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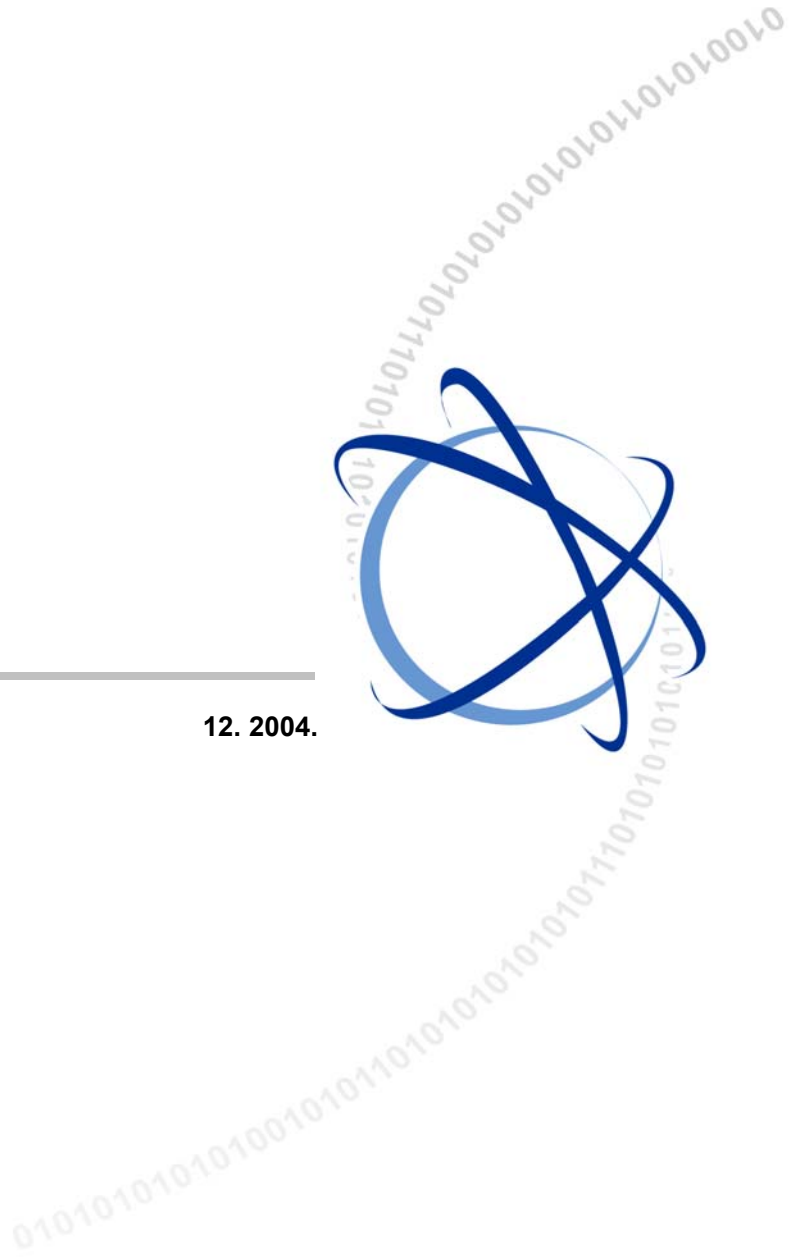

OfficeServ 100

Service Manual

12. 2004.

SAMSUNG ELECTRONICS

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INTRODUCTION

Purpose

OfficeServ 100, Enterprise IP Solutions System, is a digital telephone system designed for small to medium-sized businesses.
This manual describes the functions of the OfficeServ 100 system as well as the circuits and major functions of each hardware of which the service staff of the OfficeServ 100 system must have knowledge. In addition, this manual describes how to address the problems that might occur while the OfficeServ 100 system is used and provides a list of materials, various diagrams necessary for product services, and analysis diagrams.

Document Content and Organization

This manual consists of five chapters and two annexes as follows:

CHAPTER 1. Specifications

This chapter describes configuration and specifications of OfficeServ 100.

CHAPTER 2. Keyset Self-test and Troubleshooting

This chapter describes keyset self-test and how to troubleshoot a failure that may occur while using OfficeServ 100.

CHAPTER 3. H/W Block Diagram and Schematic Description

This chapter describes hardware configuration, block diagram and circuit description of OfficeServ 100 in each part.

CHAPTER 4. Parts List

This chapter provides a list of OfficeServ 100 parts.

CHAPTER 5. Exploded View

This chapter shows the exploded views of OfficeServ 100.

ANNEX A. PCB Component Layout

Annex A shows layout of OfficeServ 100 PCB components.

ANNEX B. Abbreviation

Annex B provides the acronyms used in this manual and their full names.

Conventions

The following special paragraphs are used in this document to point out information that must be read. This information may be set-off from the surrounding text, but is always preceded by a bold title in capital letters.

WARNING

Provides information or instructions that the reader should follow in order to avoid personal injury or fatality.

CAUTION

Provides information or instructions that the reader should follow in order to avoid a service failure or damage to the system.

NOTE

Indicates additional information as a reference.

OPERATION PROCEDURES

Indicates the operational procedures that should be executed in sequence.

References

OfficeServ 100 General Description Guide

Introduces the hardware configuration, specifications, and functions of the OfficeServ 100 system.

OfficeServ 100 Programming Manual

Introduces programming method for the OfficeServ 100 system users. Users can configure the system using the Man Machine Communication(MMC) program at the digital telephone. This manual describes how to use the MMC program.

OfficeServ 100 Installation Manual

Introduces the installation related information for OfficeServ 100 system.

Revision History

EDITION	DATE OF ISSUE	REMARKS
00	12. 2004.	Original

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SAFETY CONCERNS

For product safety and correct operation, the following information must be given to the operator/user and shall be read before the installation and operation.

Symbols

Caution

Indication of a general caution

Restriction

Indication for prohibiting an action for a product

Instruction

Indication for commanding a specifically required action

CAUTION

Static Electricity

Wear a strap on wrists, and ground the wrist strap when touching the boards or parts. if you do not wear a strap on wrists and do not ground the wrist strap, parts of board can be damaged by static electricity

Repairing Product

Do not turn off power while upgrading a program. if you turn off power during an upgrade will terminate the upgrade process. In such cases, repeat the upgrade process.

Repairing Product

- Disconnect the power plug before repairing the product.
- Replace a part with a new qualifying product that meets the specification.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

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CHAPTER 1. Specifications

This chapter describes specifications and layout of OfficeServ 100.

1.1 Specifications

Specifications of OfficeServ 100 are as follows:

OfficeServ 100 System General Specification

Table 1.1 OfficeServ 100 System Specification

System Item		Specification
Processor Type	Main Processor	MPC855, 32 bit, 50 MHz(MCP 1)
	Signal Processor	MC68EC000, 16 bit, 16 MHz
Main Memory(MCP 1)	NAND Flash Memory	16 Mbytes
	SDRAM	32 Mbytes
	Boot ROM	512 Kbytes
	SRAM	1 Mbytes(Battery Back-up)
Inter Processor Communication(MCP 1)	DPRAM	2 Kbytes
Signal Memory(MCP 1)	SRAM	1 Mbytes
Option Cards	-	MISC3, MISC 4, 500 MODEM, MGI 3, 4 WLI

Electrical Specification

- AC Input: 110 V or 220 V Selectable
- Power Consumption(Max): 140 W

Table 1.2 Electrical Specification

Sorts	Max. DC Voltage	Rating Current	Max. Current
CH1	-55.0V(±4 %)	0.6 A	1.7 A
CH2	+5.0V(±2 %)	0.8 A	4.0 A
CH3(BATT)	-54.0V(±4 %)	0.1 A	0.4 A

Dimension and Weights

Table 1.3 Dimension and Weights

Item	Height(mm)	Width(mm)	Depth(mm)	Weight(kg)
Basic(Single) Cabinet	464	365	148.2	7.5
Expansion(two) Cabinet	464	467	148.2	12.5

Environmental Limits

Table 1.4 Environmental Limits

Item	Specification
Operating Temperature	32-104 °F/0-40 °C
Storage Temperature	13.1-158 °F/-10.5-70 °C
Humity	10 ~ 90 % non-condensing

iDCS 100 System Specification

Table 1.5 iDCS 100 System Specification

System Item		Specification
Processor Type	Main & Signal Processor	MC68EC000, 16 bit Mode
Main Memory	MEM 3 Card	EPROM 3 Mbytes
		SRAM 1 Mbytes
	MEM 4 Card	Flash Memory 3 Mbytes
		SRAM 1 Mbytes
Option Cards	-	MISC1(A), MISC2(A), MODEM, ITM 3

OfficeServ 100 & iDCS 100 Common System Specification

Table 1.6 OfficeServ 100 & iDCS 100 Common System Specification

System Item	Specification
Switch Structure	256 × 256 Time slot(Channels)
Trunk Card	3 TRK, 6 TRK, BRI, TEPRI
Station Card	2/4SLI, 8 SLI, 8 DLI, 6MWSLI
Service Card	AA, SVMi 4(SVMi 8)
Keysets	DCS, iDCS, EURO KTS, S Phone, AOM, KDB-S, KDB-D, DPIM

1.2 System Layout

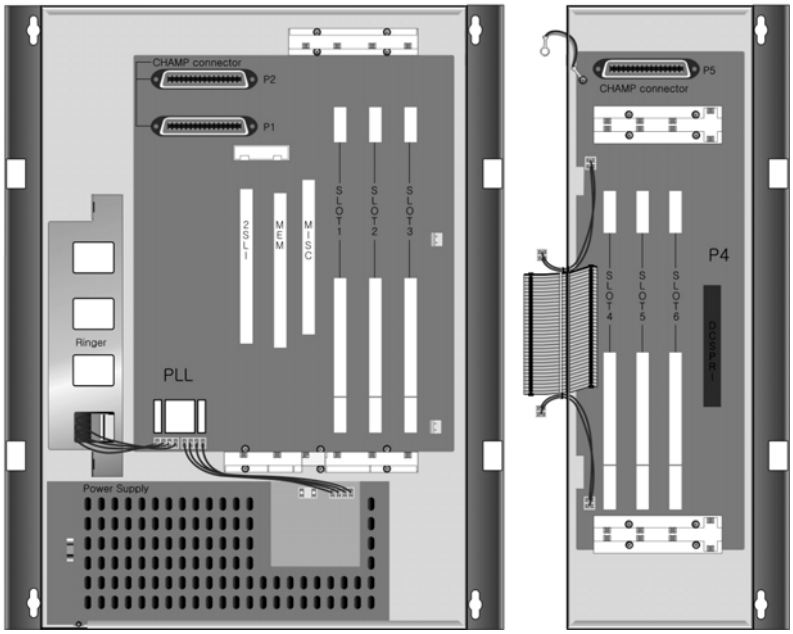

Figure 1.1 OfficeServ 100 System Layout

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CHAPTER 2. Keyset Self-test and Troubleshooting

This chapter describes keyset self-test and how to troubleshoot failures that may occur while using OfficeServ 100.

2.1 Keyset Self-test

Enter the Test Mode

1) Connect the digital keyset to DLI port and press '#' button before the digital keyset is reset.
2) LCD module is self-tested. All displayable messages are displayed.
3) Press '#' button to enter the test mode.

Key & LED Test

- All LEDs are lit. If you press the corresponding buttons, the amber LEDs turn green and the red LEDs are off.
- If you press number buttons including '*' and '#', the color of DSS LEDs are changed to red from amber, and the red LEDs are turned off.
- If you press the soft buttons, the LEDs color of 13, 14, 19, and 20(LCD displays these numbers) buttons are changed.

Ring Test

Each time you press '*' button, 8 kinds of ring are generated.

Transmission Test

The LCD displays 'C7' while tuning sync. Wait a minute and press any button to exit the test mode.

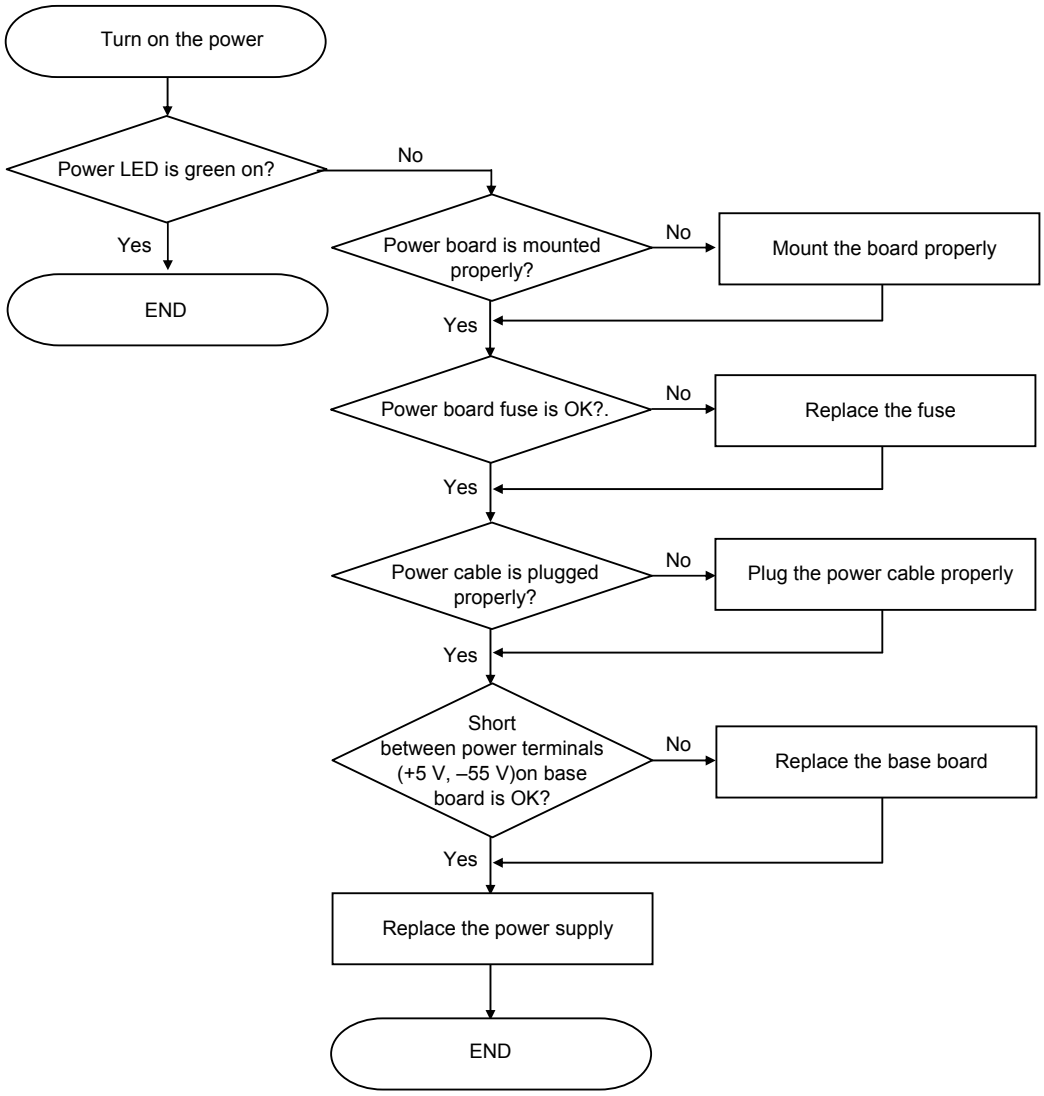
2.2 Troubleshooting

2.2.1 Power Supply Failures

Failure

OfficeServ 100 does not turn on.

Troubleshooting

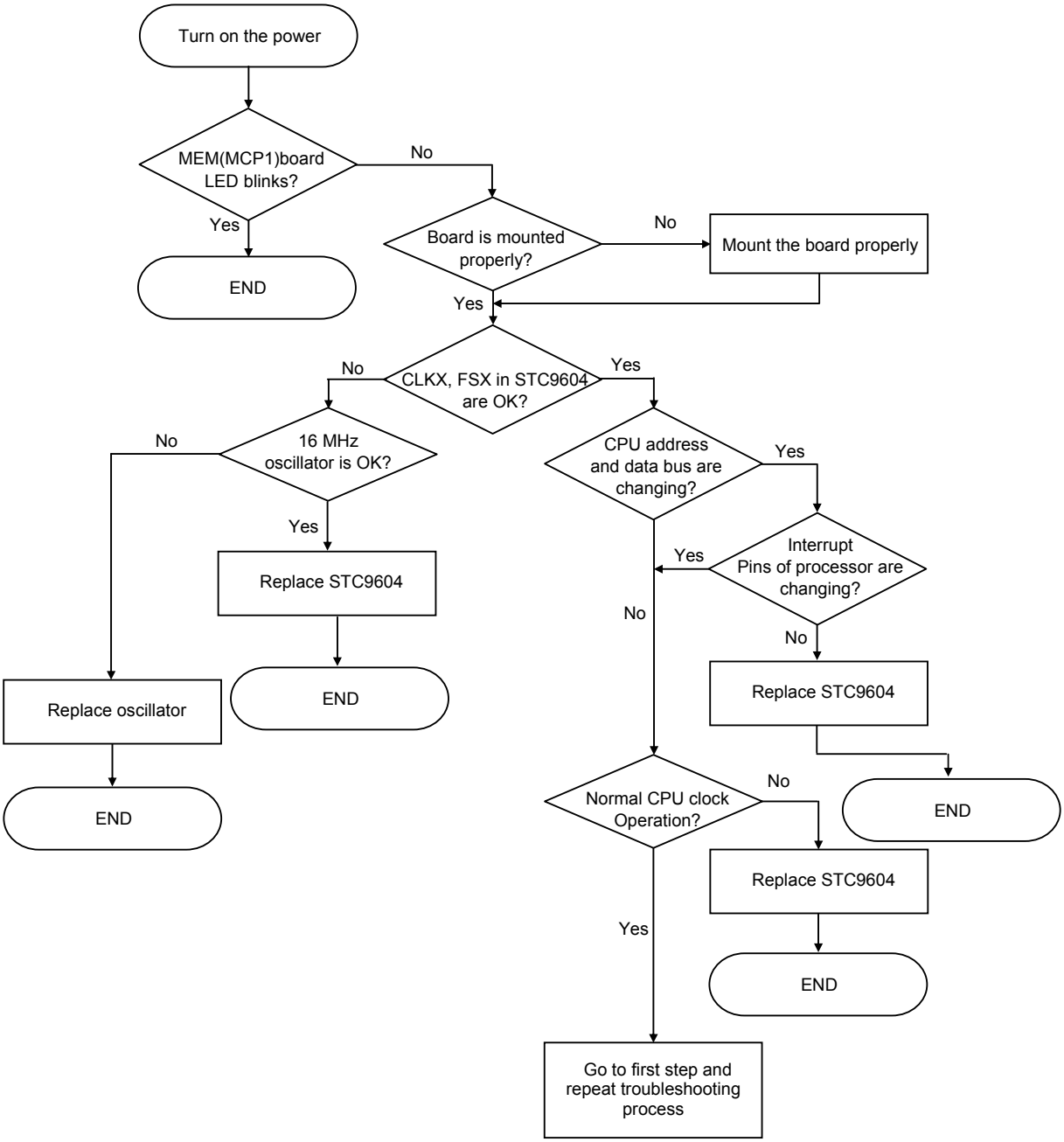


2.2.2 MEM LED Failures

Failure

When MEM LED is not blinked or system is continuously reset after 10 seconds the power turns on.

Troubleshooting

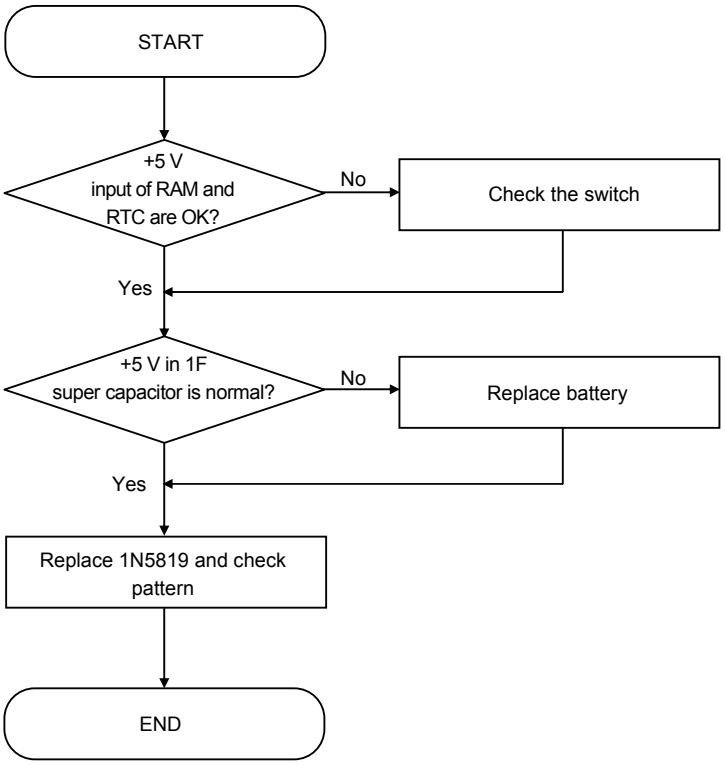


2.2.3 Memory Backup Failures

Failure

Data is erased from the memory.

Troubleshooting

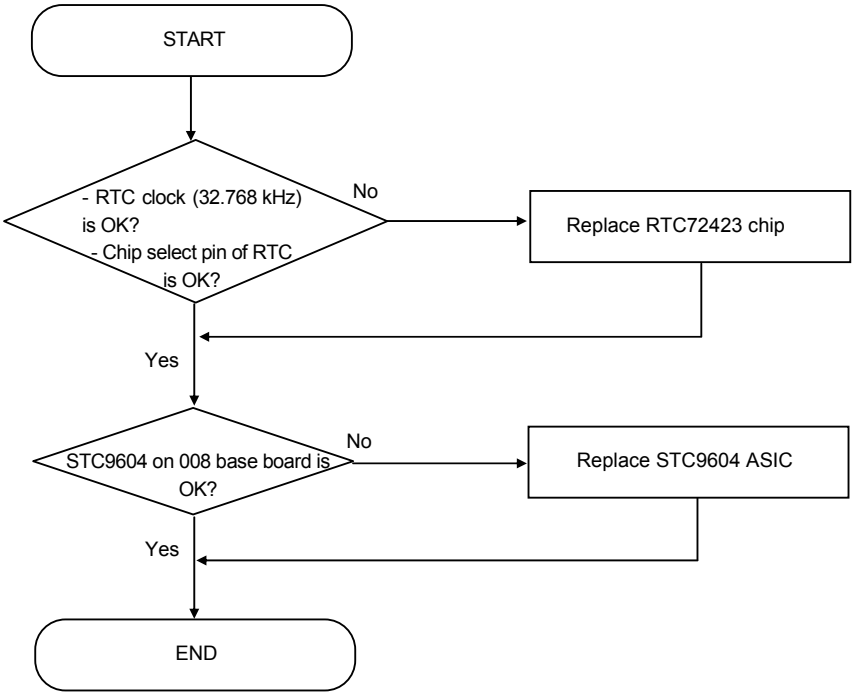


2.2.4 Real Time Clock Failures

Failure

Clock is abnormal.

Troubleshooting



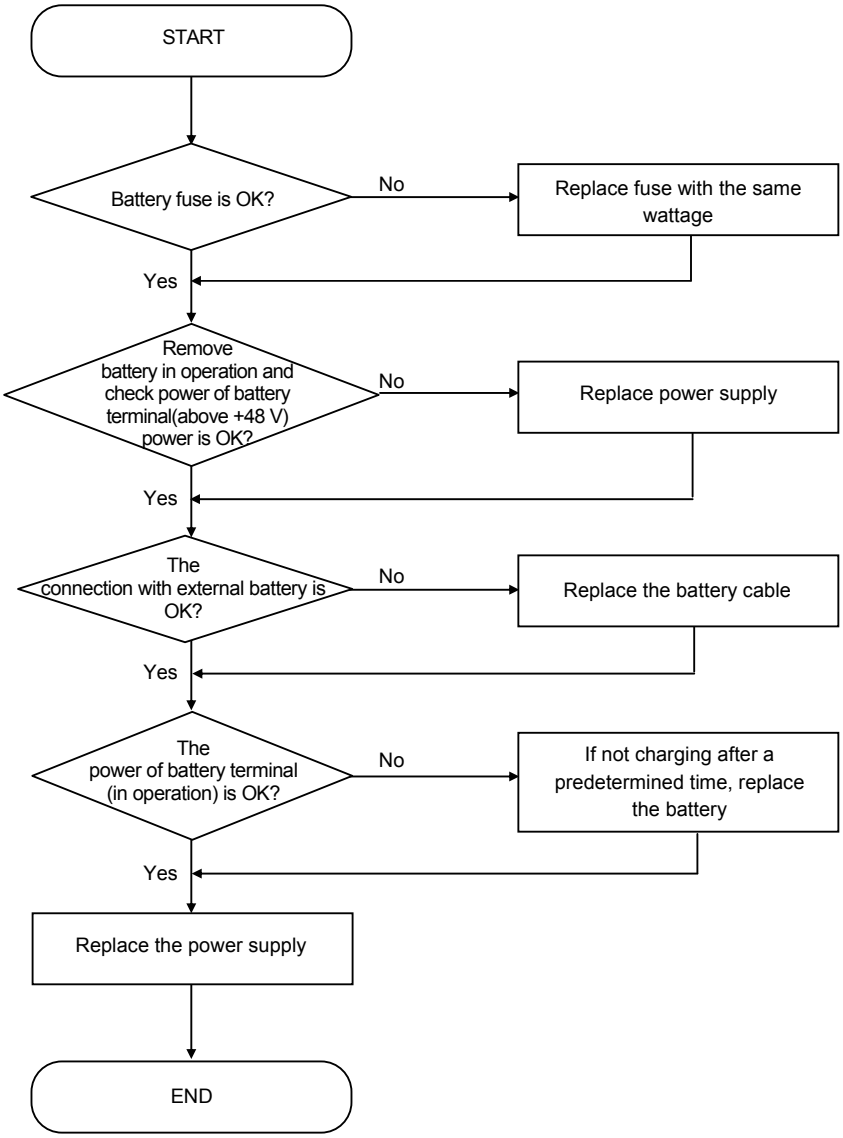
2.2.5 System Backup Failures

Failure

A system backup failure occurred.

When a power failure occurred, external battery does not operate properly.

Troubleshooting

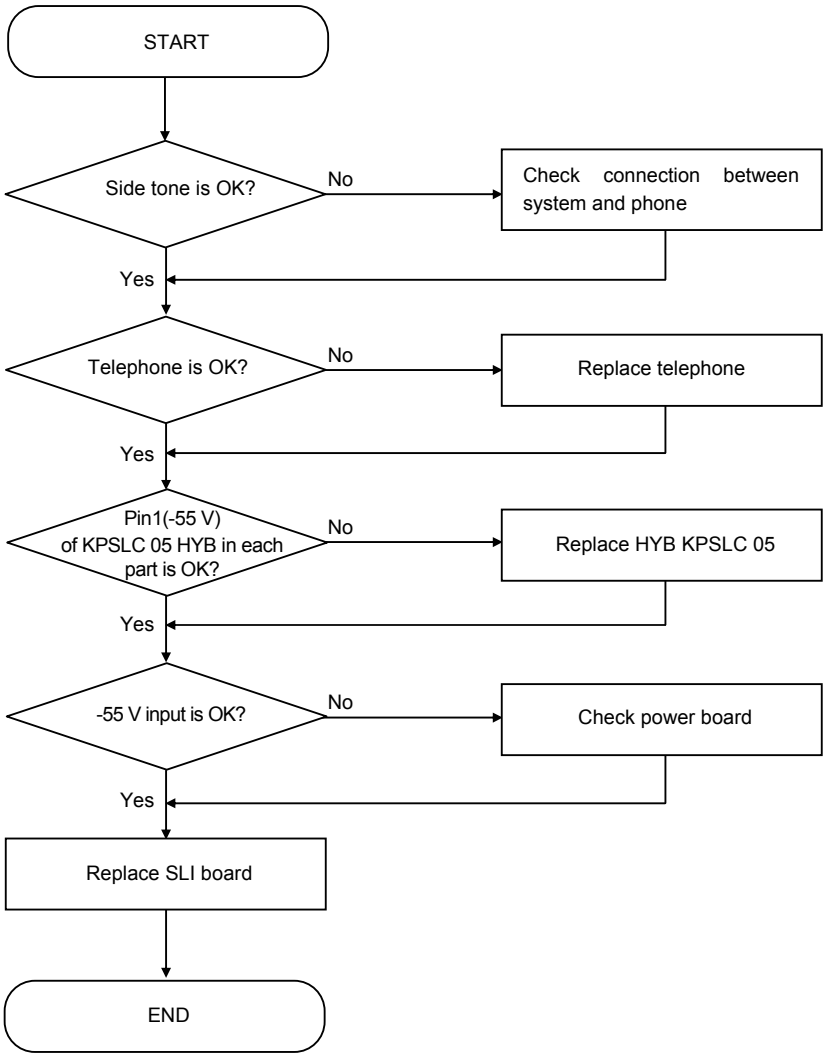


2.2.6 SLI DC Feeding Failures

Failure

The SLI phone does not operate properly.

Troubleshooting

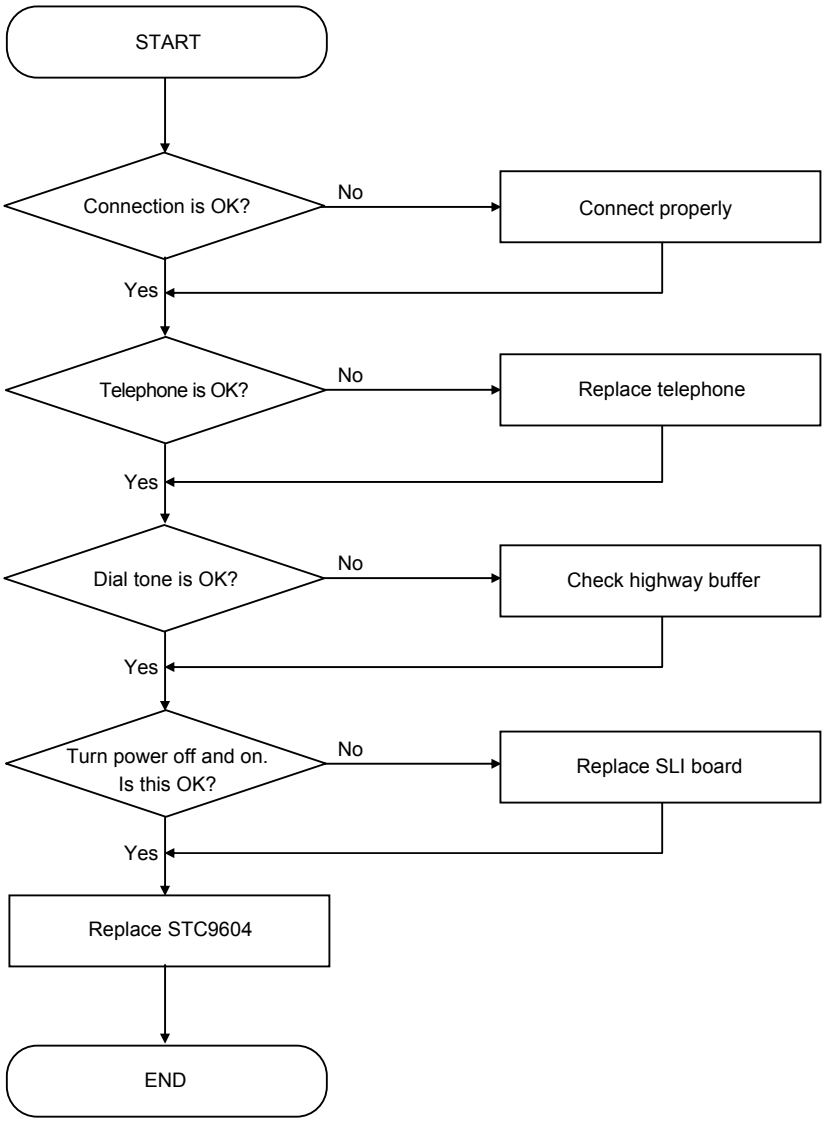


2.2.7 SLI DTMF Detection Failures

Failure

The SLI phone can not detect the DTMF button.

Troubleshooting

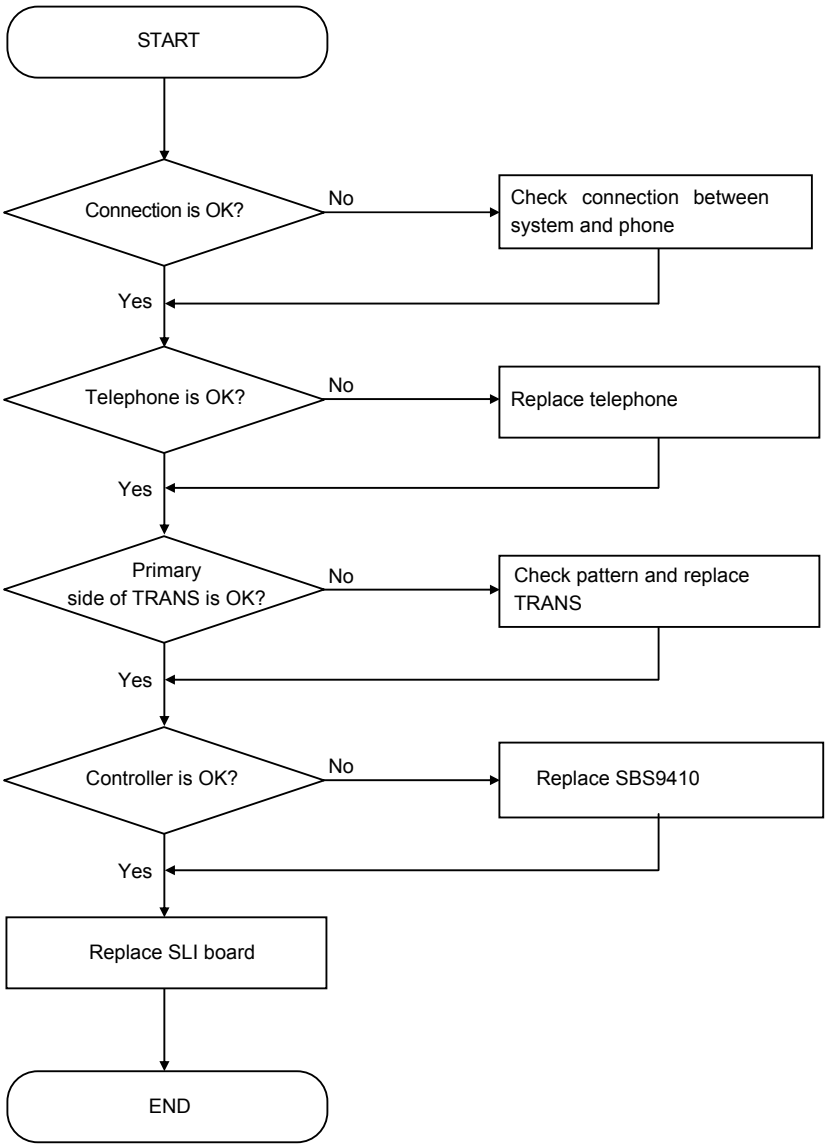


2.2.8 SLI Dial Pulse and Ring Detection Failures

Failure

The SLI phone can neither detect buttons nor ring.

Troubleshooting

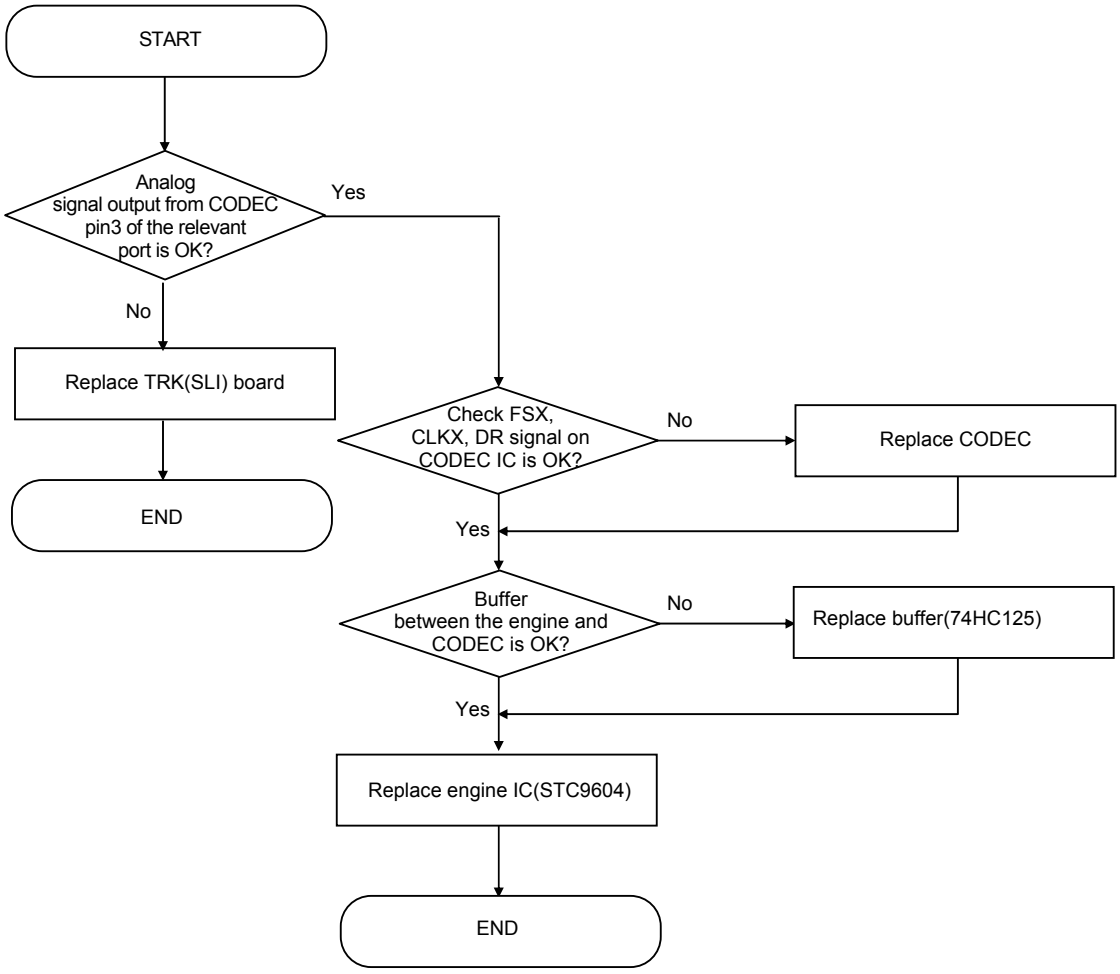


2.2.9 Tone generation Failures

Failure

Tone is not generated from TRK of SLI port.

Troubleshooting

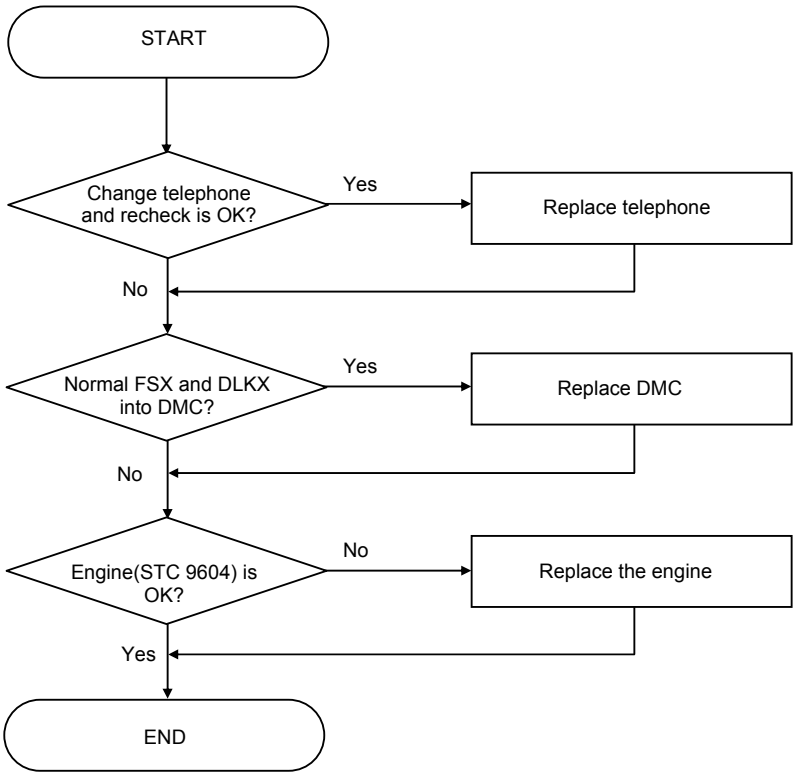


2.2.10 Digital Phone Failures

Failure

Digital Phone is abnormal.

Troubleshooting



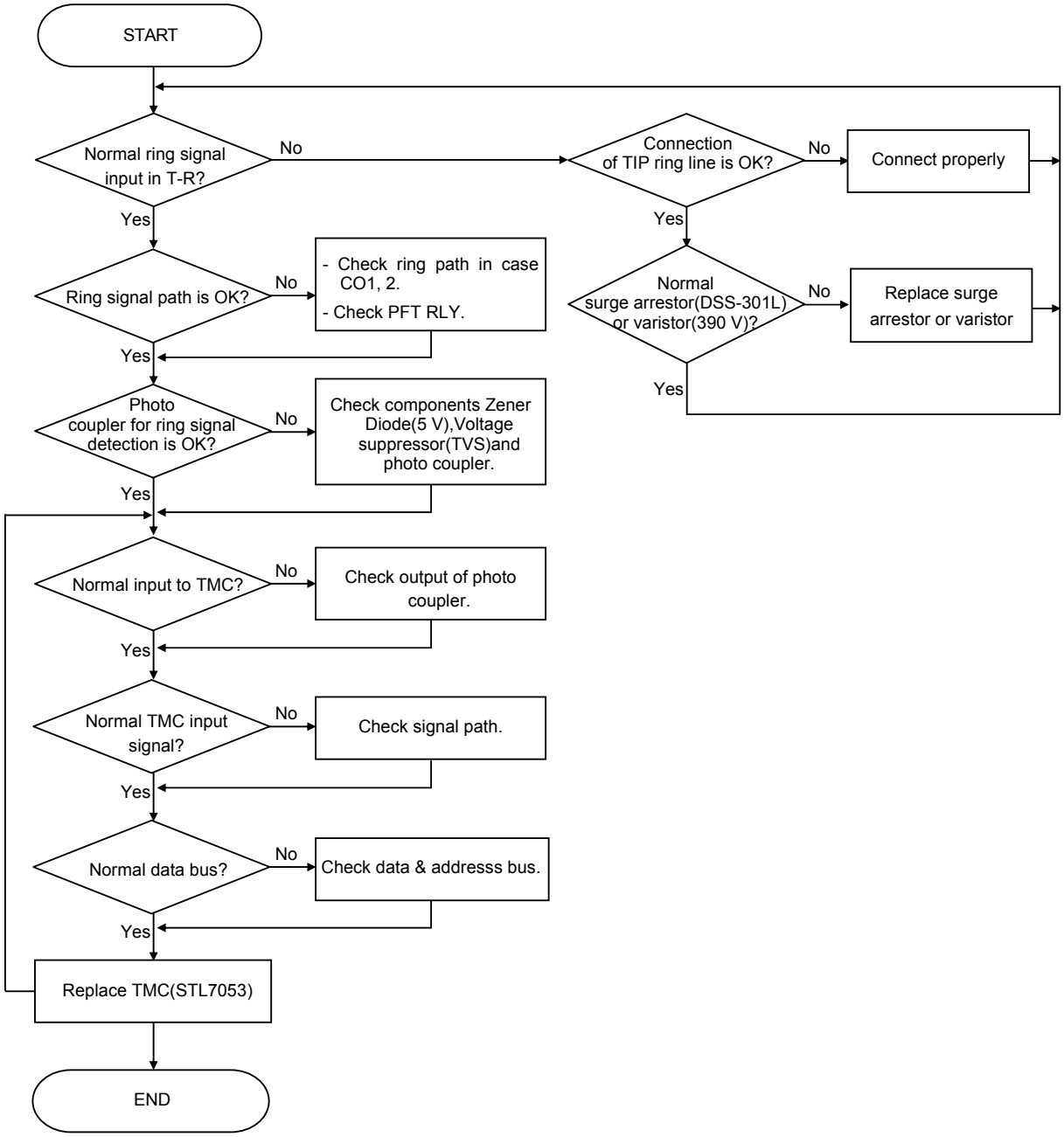
2.2.11 TRK (3 TRK, 6 TRK) Board Failures

2.2.11.1 TRK Ring Detection Failures

Failure

Reception of external calls is abnormal.

Troubleshooting

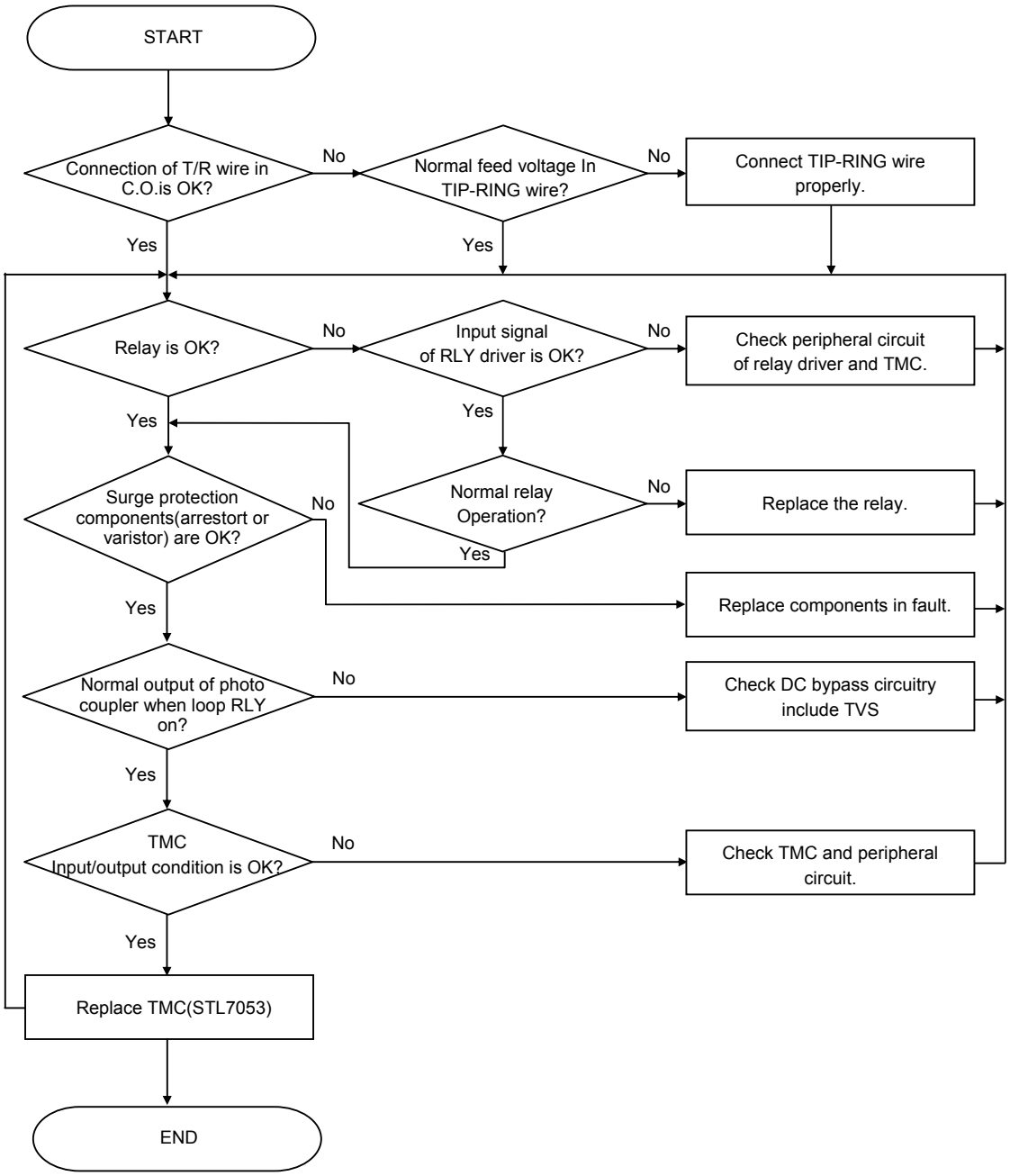


2.2.11.2 Trunk Seizure Failures

Failure

External calls can not be made.

Troubleshooting

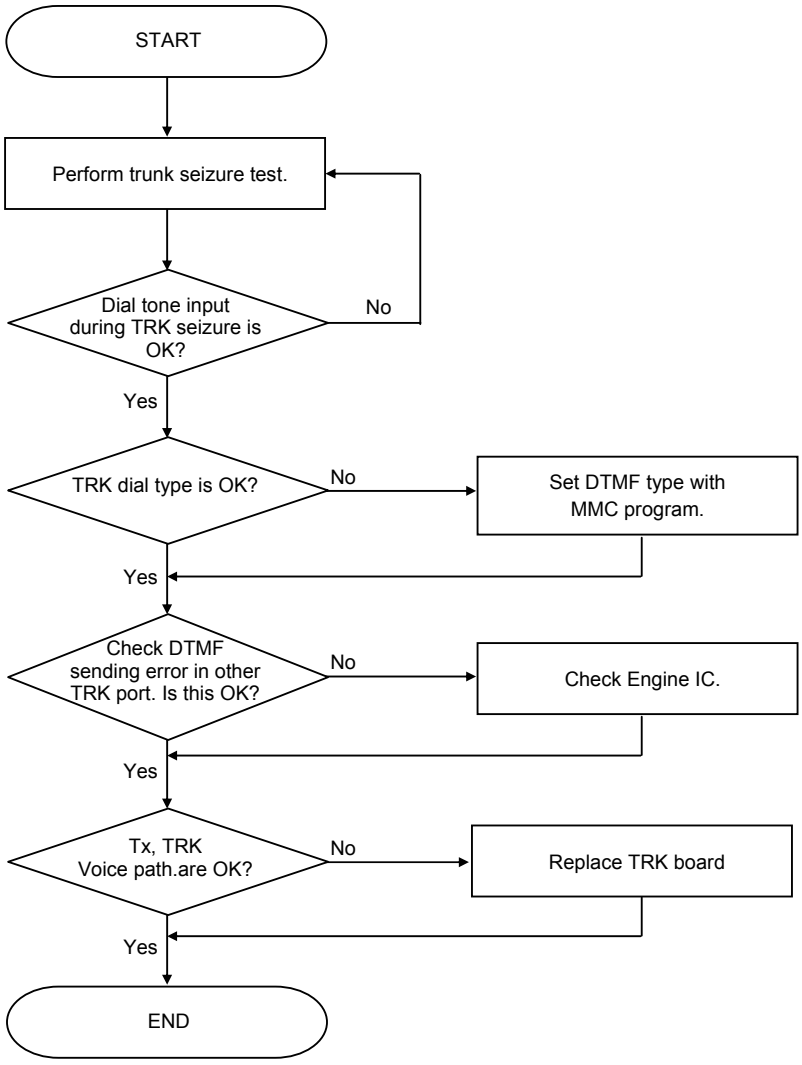


2.2.11.3 DTMF Sending Failures

Failure

TRK can not send DTMF signal.

Troubleshooting

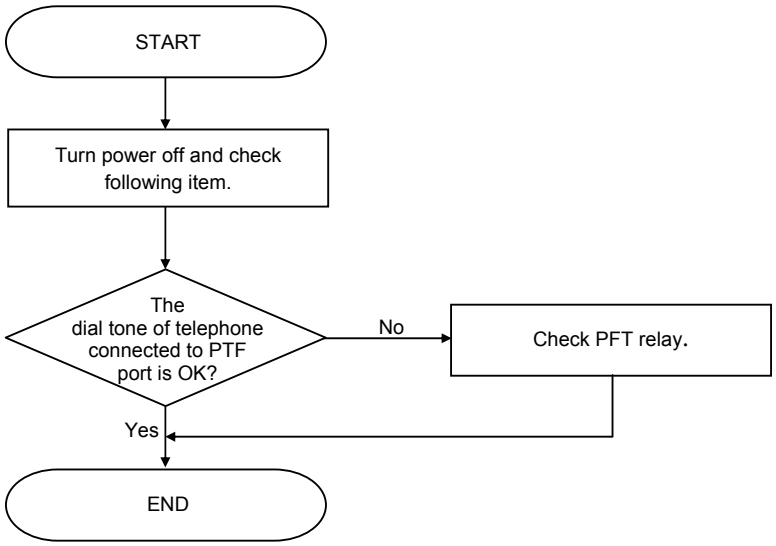


2.2.11.4 Power Fail Transfer(PFT) Failures

Failure

System backup has failed.

Troubleshooting

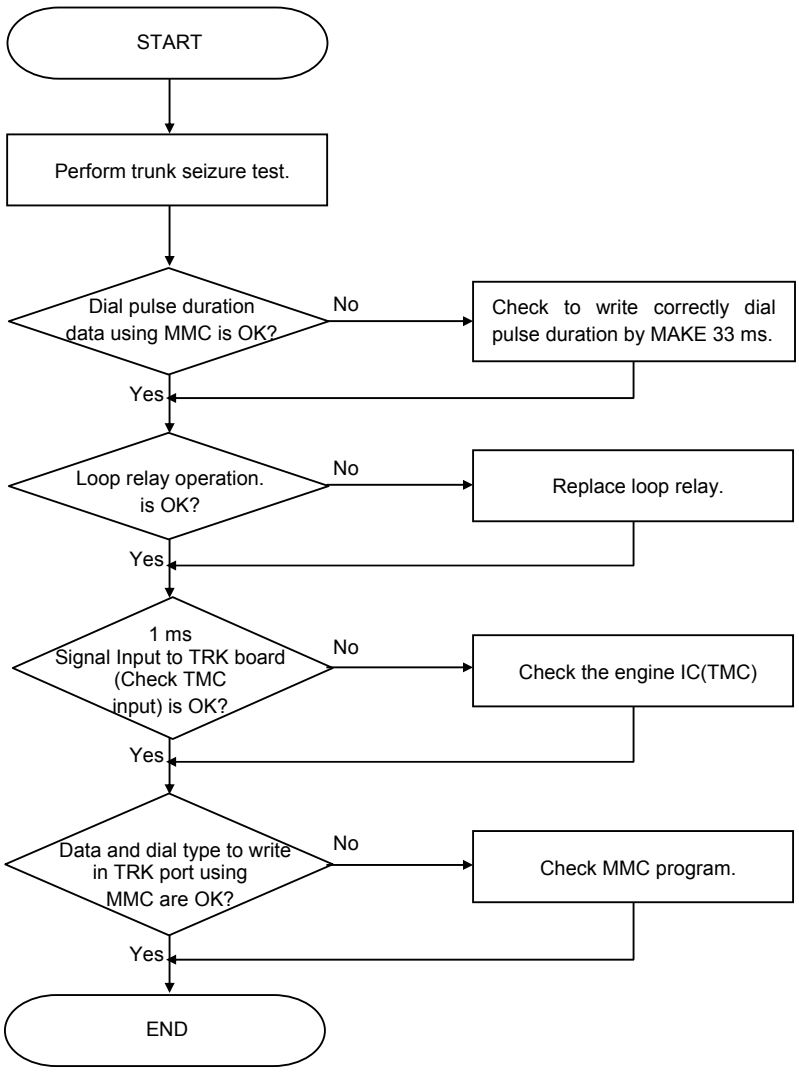


2.2.11.5 Dial Pulse Sending Failures

Failure

TRK can not send the dial pulse signal.

Troubleshooting

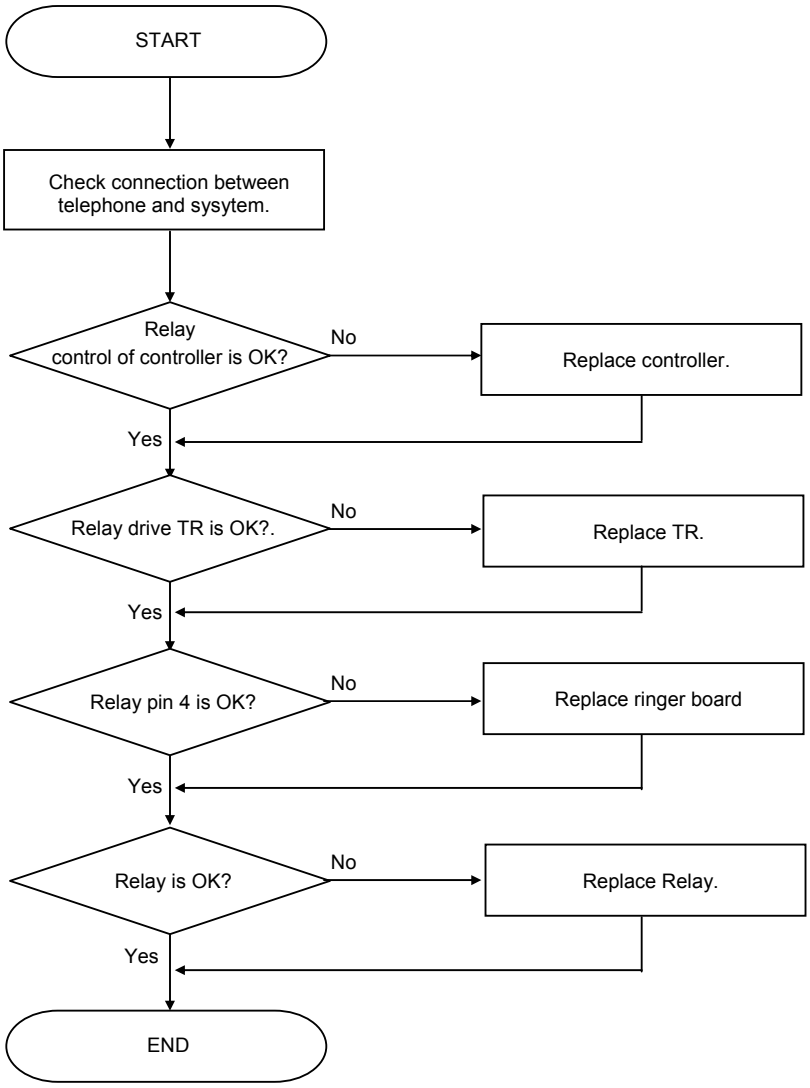


2.2.12 SLI Ring Generation Failures

Failure

The SLI phone does not ring.

Troubleshooting



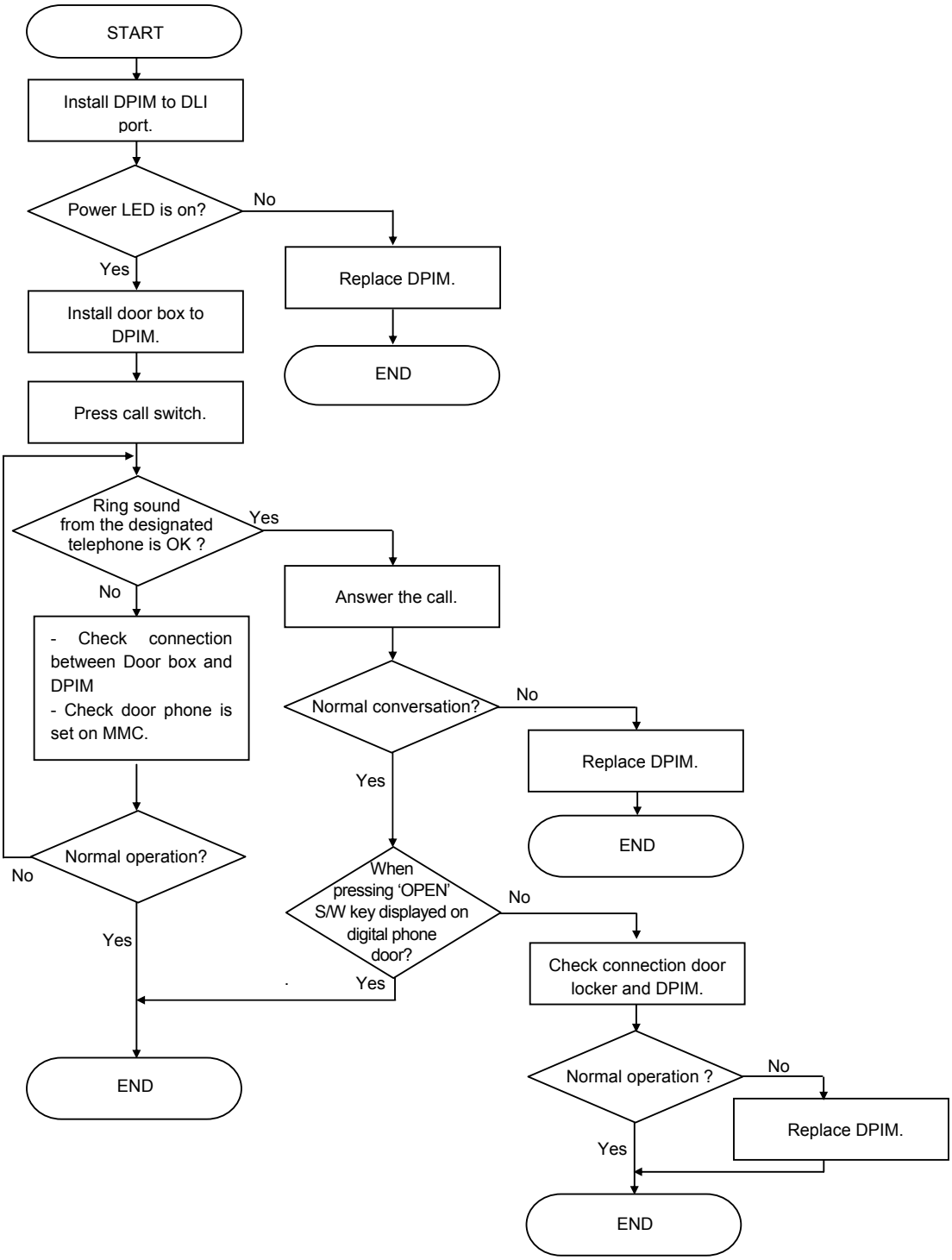
* Controller: SBS9401 or STL7053

2.2.13 DPIM Failures

Failure

The door phone or door lock is abnormal.

Troubleshooting

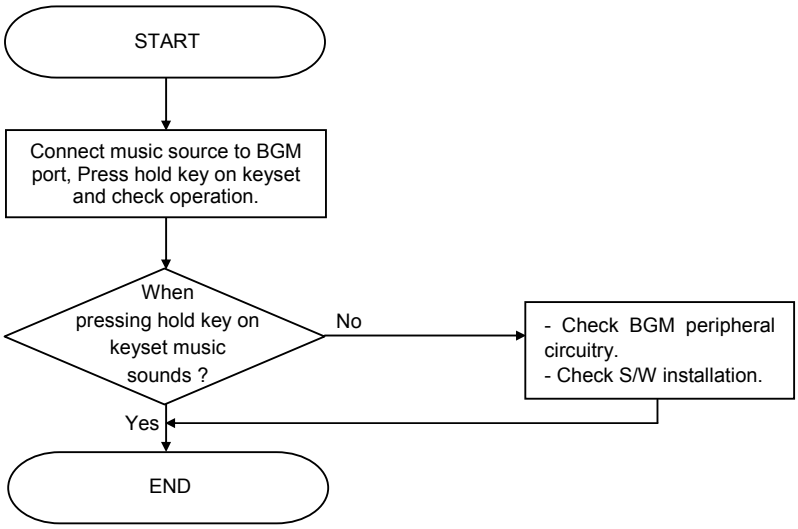


2.2.14 External Music Operation Failures

Failure

External music source is abnormal.

Troubleshooting

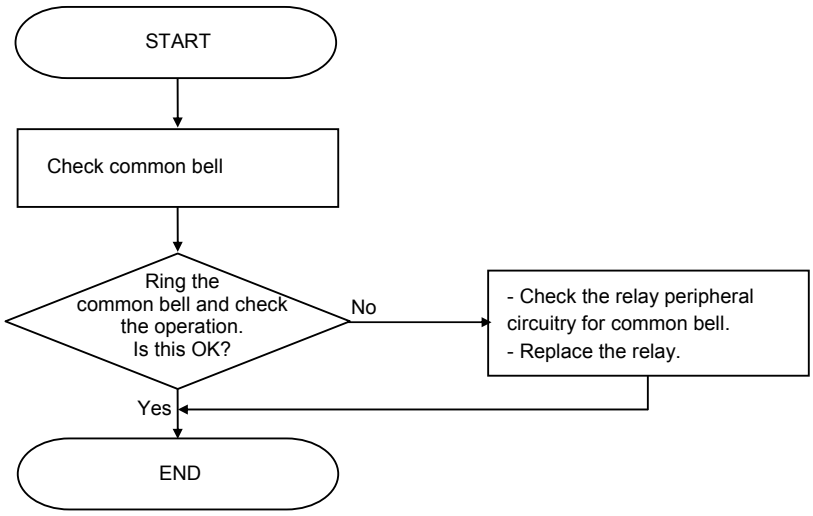


2.2.15 Common Bell Operation Failures

Failure

Common bell does not operate normally.

Troubleshooting



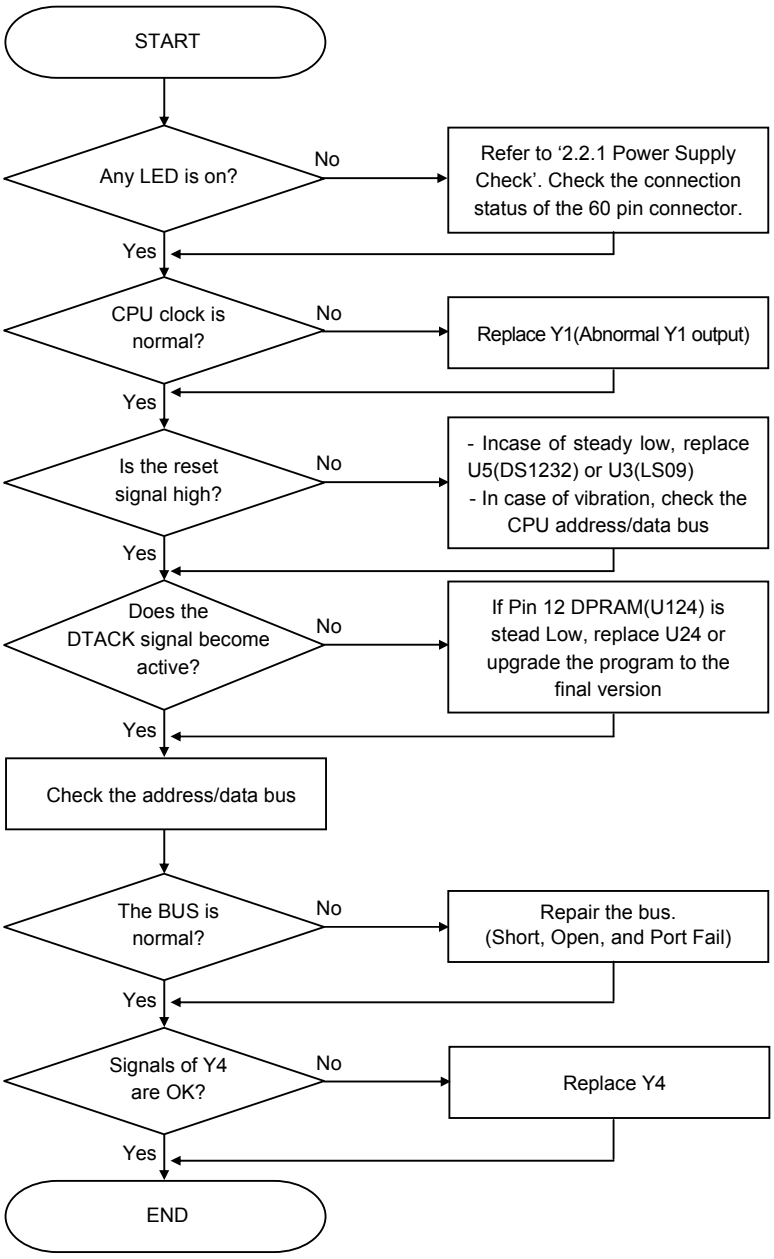
2.2.16 TEPRI Card Failures

2.2.16.1 Processor Failures

Failure

When the processor of the TEPRI card does not properly function

Troubleshooting

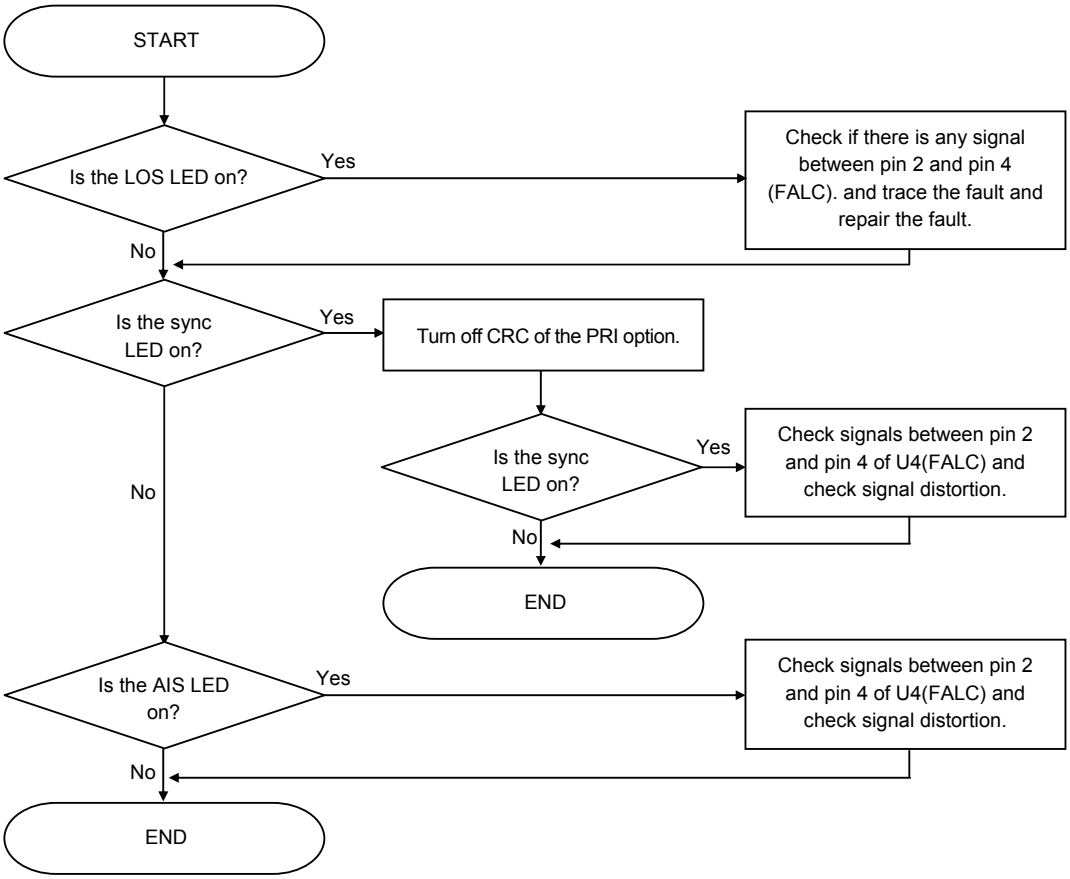


2.2.16.2 Line Displaying LED Failures

Failure

When any LED related fault occurs in the TEPRI card.

Troubleshooting

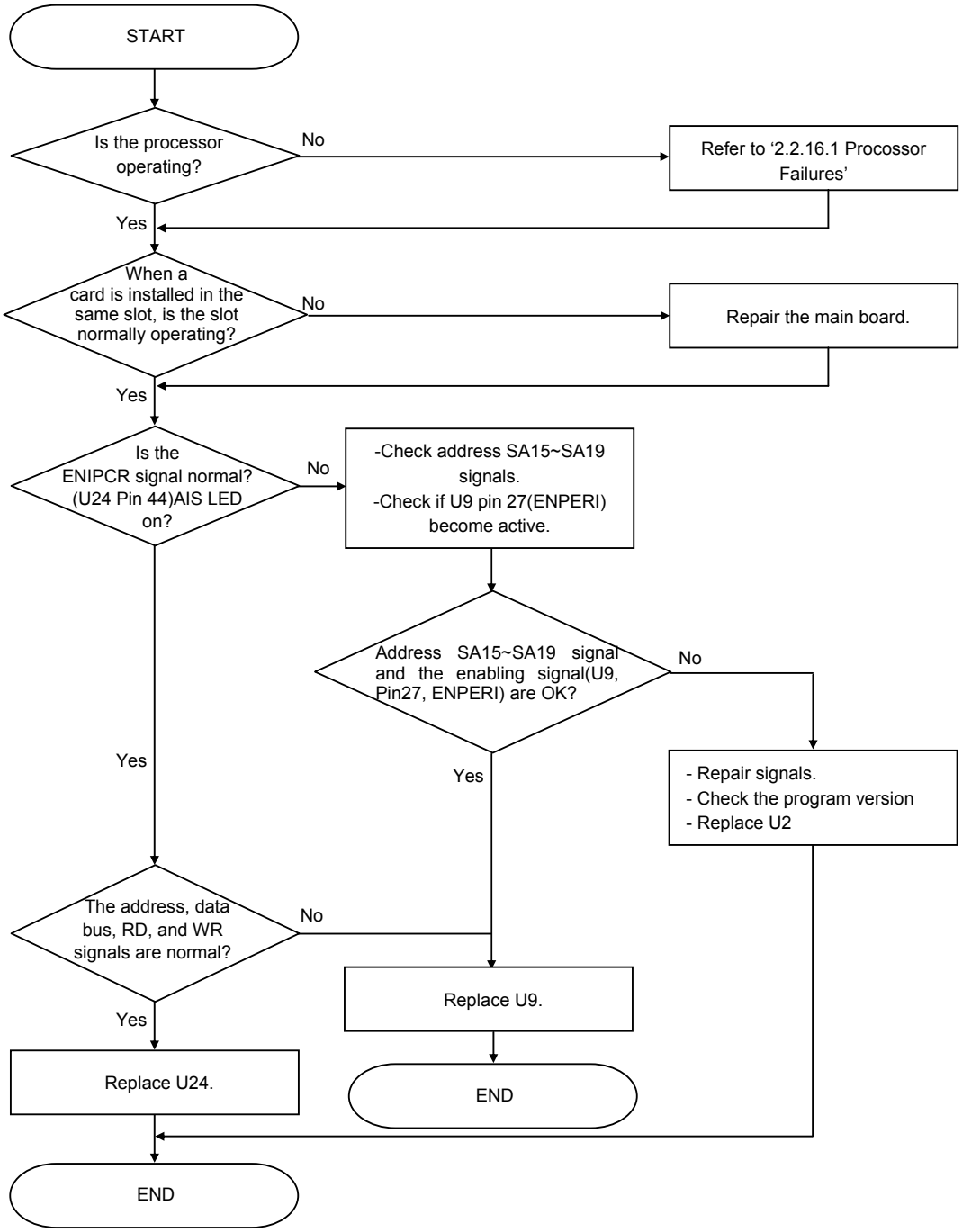


2.2.16.3 IPC LED Failures

Failure

When the IPC LED does not blink.
If the IPC LED of the TEPRI card blinks, it means TEPRI card is normally functioning.

Troubleshooting

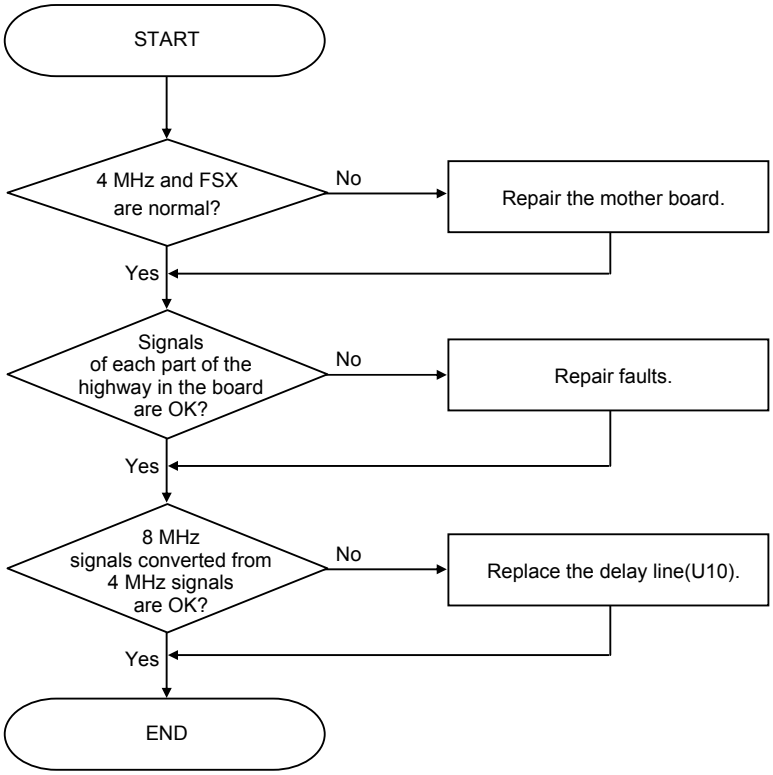


2.2.16.4 When No call is connected or noise occurs while the LED is in normal conditions

Failure

When no call is connected or noise occurs although the LED of the TEPRI card is normal

Troubleshooting



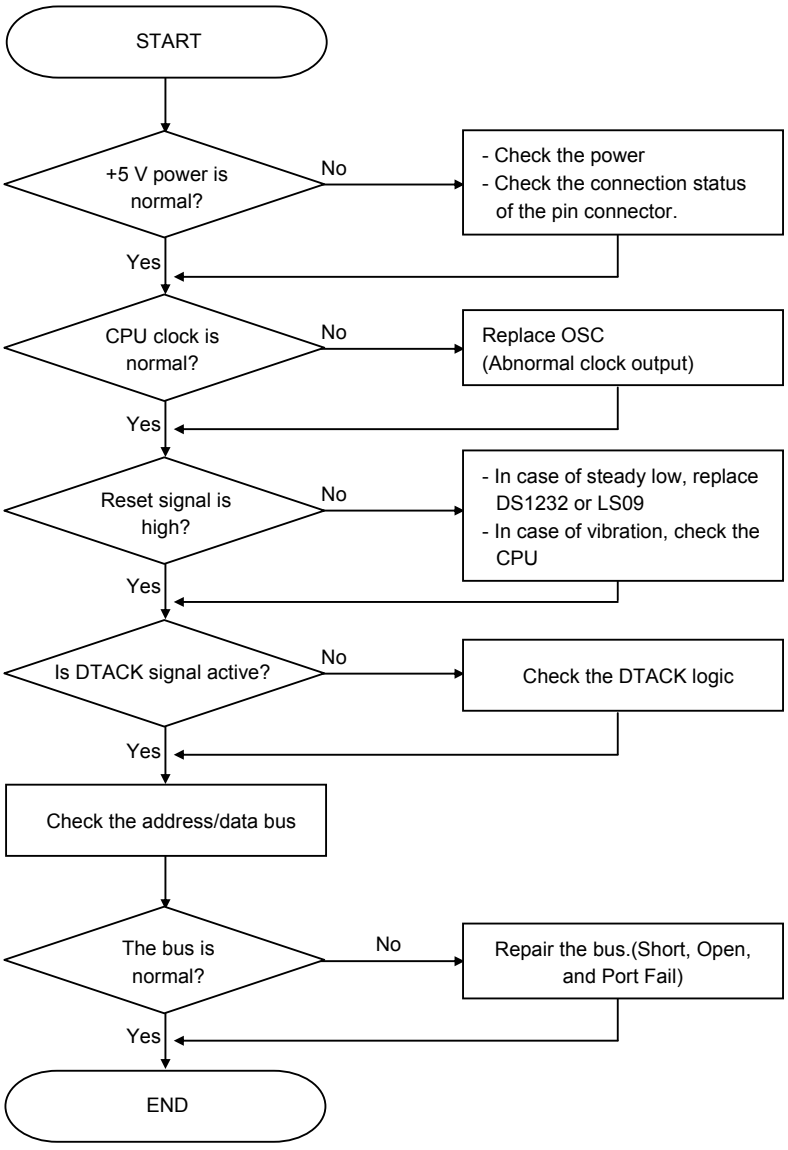
2.2.17 BRI Card Failures

2.2.17.1 Processor Failures

Failure

When the processor of the BRI card does not function properly.

Troubleshooting

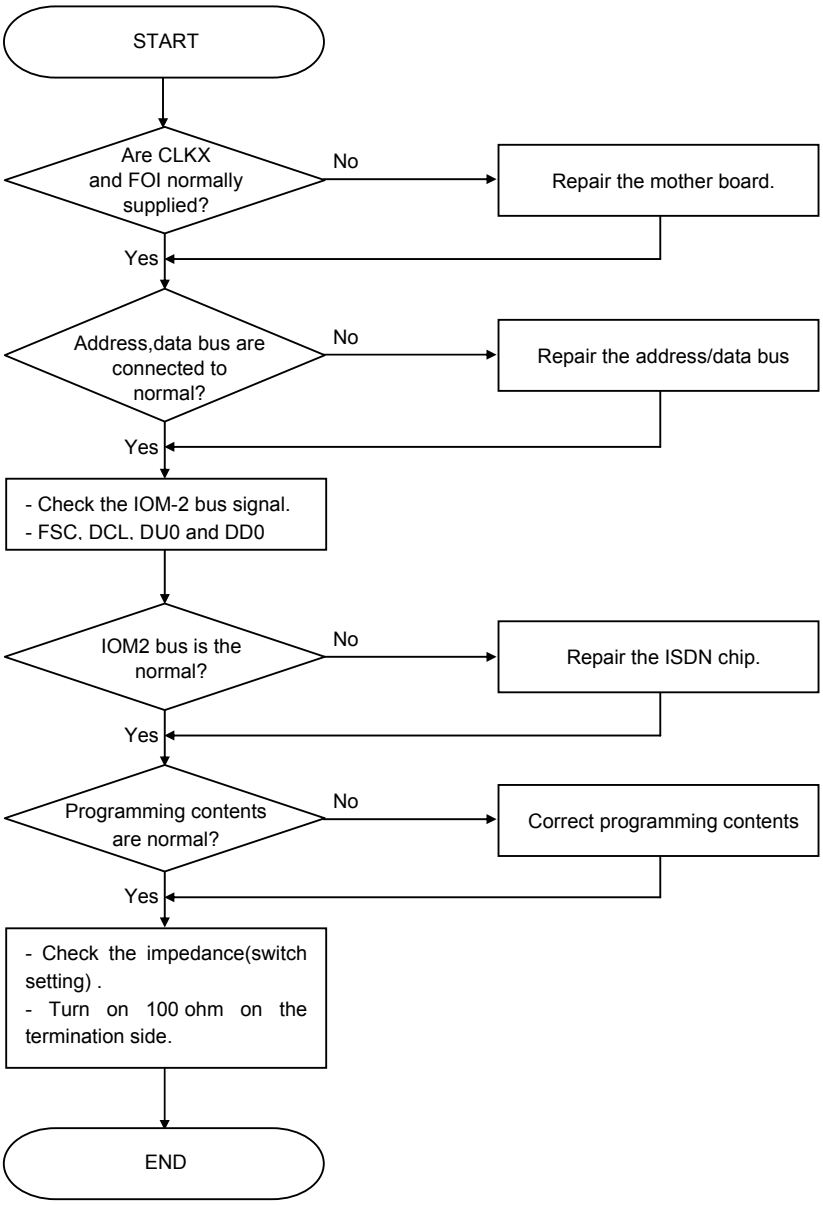


2.2.17.2 When the card functions but no call is connected

Failure

When no call is made and only the BRI card functions.

Troubleshooting

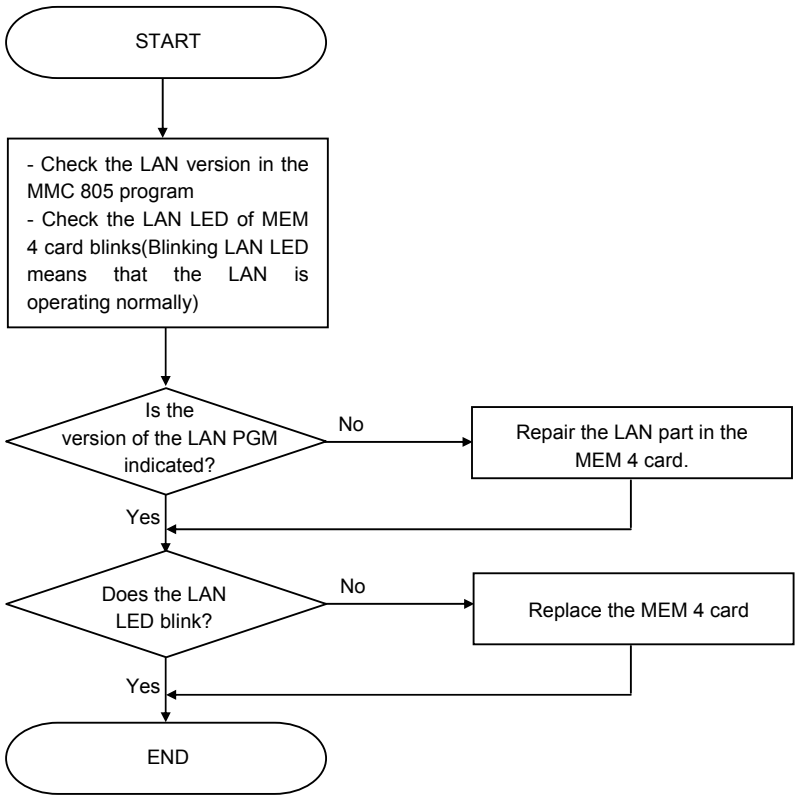


2.2.18 LAN Interface Failures

Failure

When the LAN(inside MEM 4 card)is not operating.

Troubleshooting



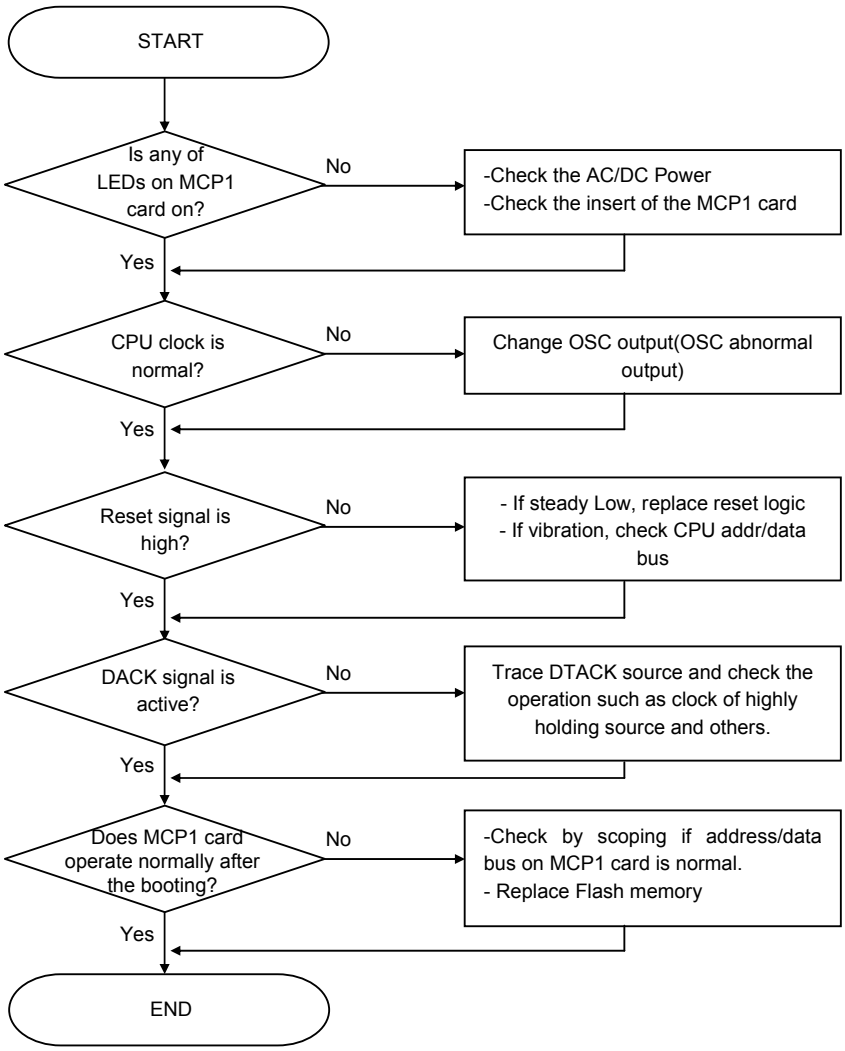
2.2.19 MCP 1 Failures

2.2.19.1 Processor Failures

Failure

When the MCP 1 card is not operating.

Troubleshooting

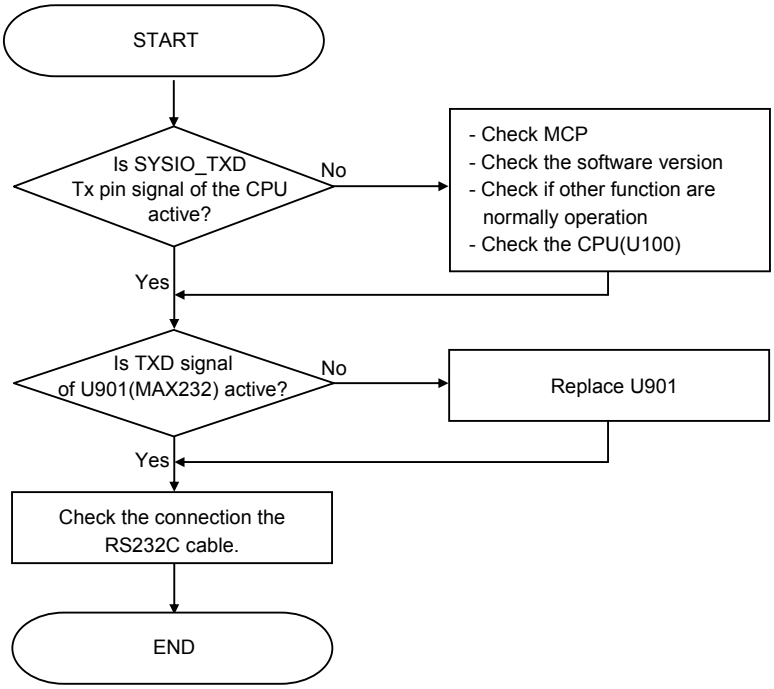


2.2.19.2 SIO Port Failures

Failure

SIO malfunction

Troubleshooting

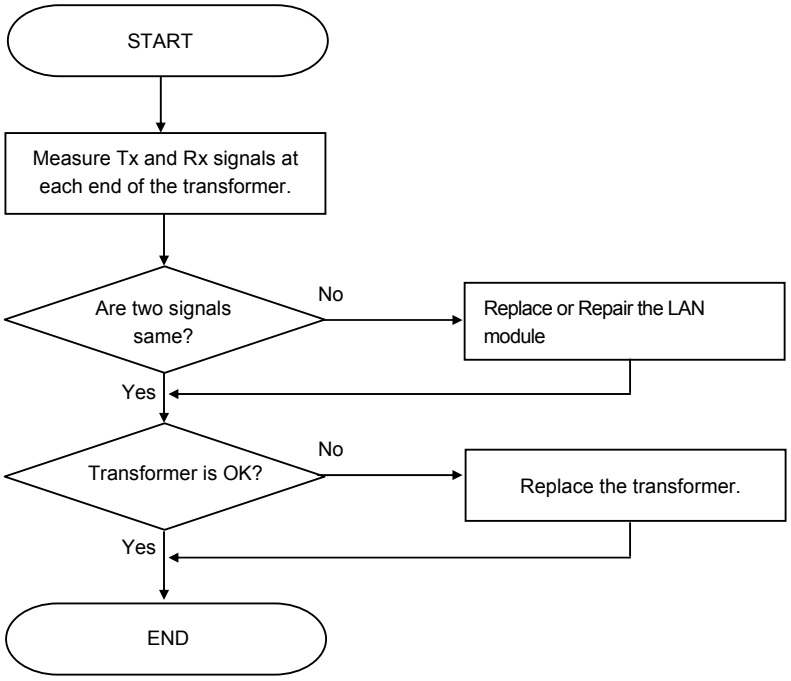


2.2.19.3 LAN Failures

Failure

LAN malfunction

Troubleshooting



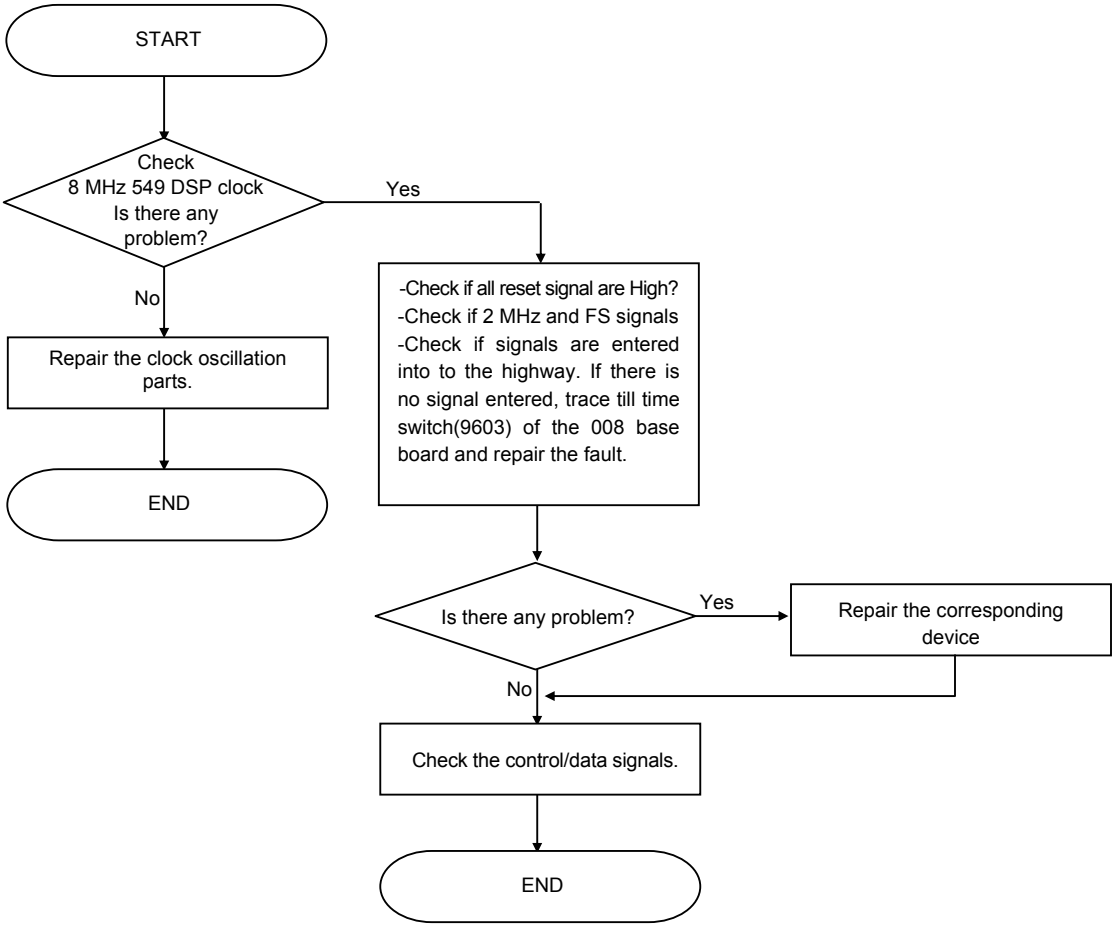
2.2.20 MISC 3 (4) Card Failures

2.2.20.1 FSK CID Tx/Rx Failures

Failure

When the FSK CID Tx/Rx does not function

Troubleshooting

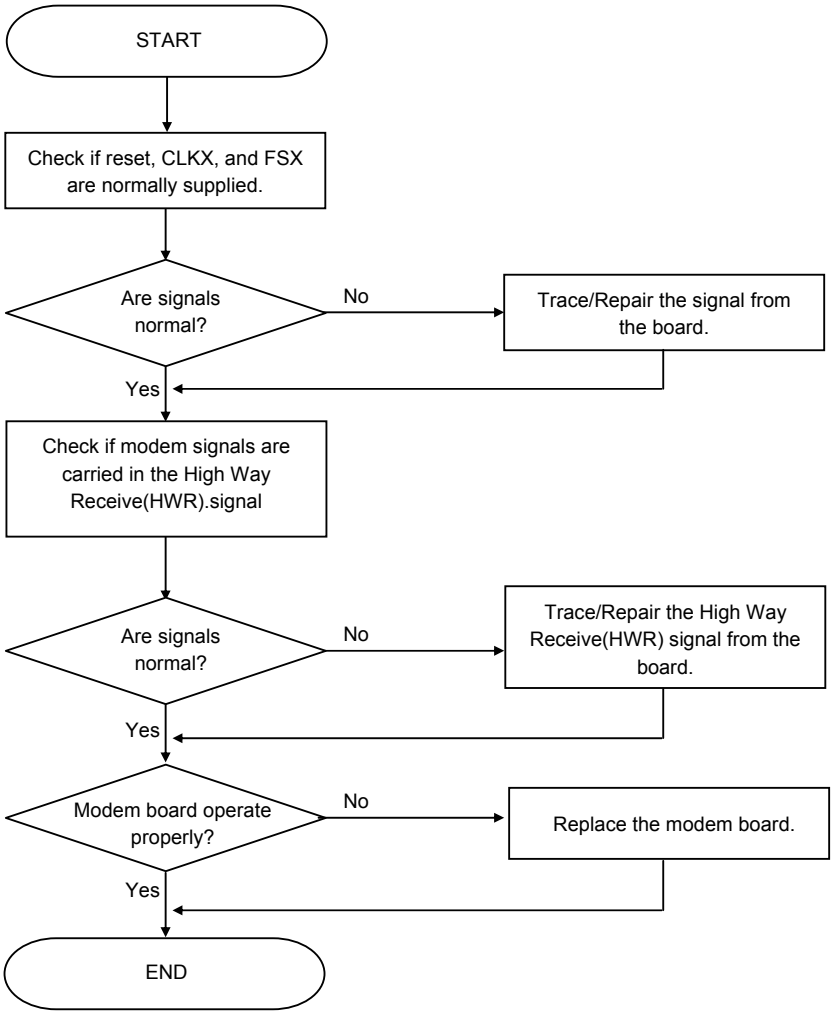


2.2.20.2 Modem Board Failures

Failure

When the Modem board installed in the MISC 3(4) board does not operate.

Troubleshooting

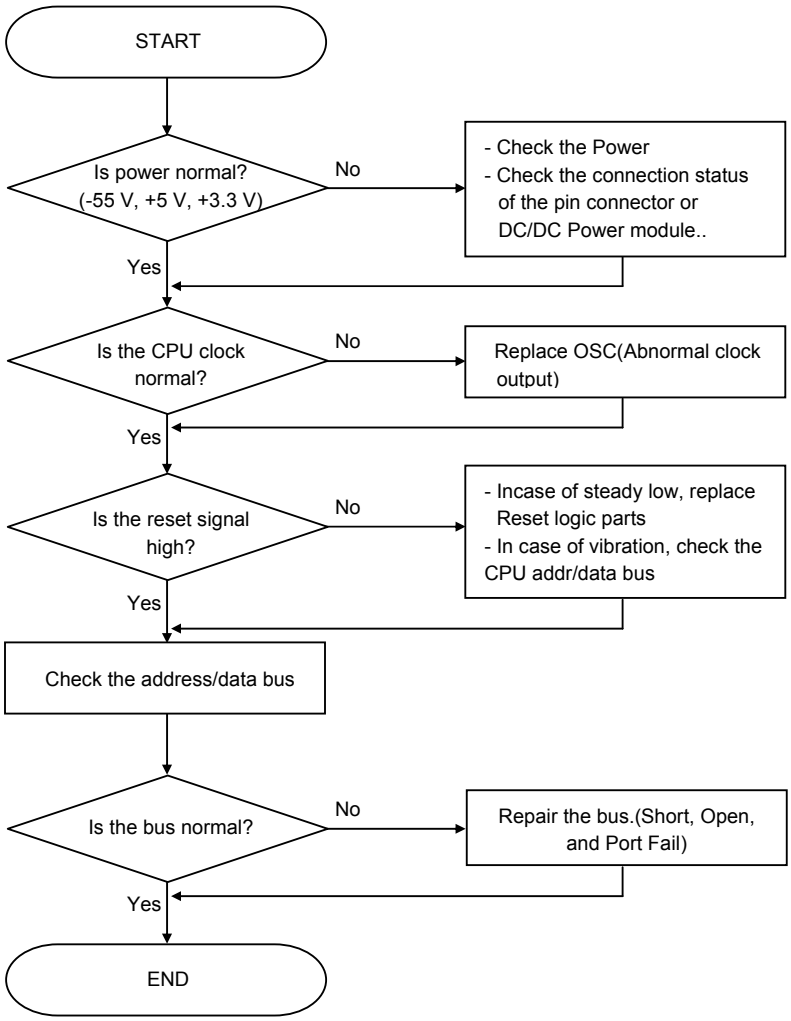


2.2.21 MGI 3 Failures

Failure

When the processor of the MGI 3 card does not properly function.

Troubleshooting



2.2.22 4 WLI Failures

2.2.22.1 Verifying the Status of WBS 24

Status inquiry via the LED status indicators

With the LED indicators on the front panel of the WBS 24, it is possible to verify the WBS 24 status. When power is supplied to the WBS 24, booting is allowed about ten minutes later. At this time, booting is indicated as the LD2 LED blinks regularly.
(At this time, other LEDs can be unintentionally turned on, but they should be ignored).
After receiving the initialized data from the system and when booting is completed, the LD2 LED blink will be disappeared. From this time, the on-line service becomes practicable. After booting is completed, each LED indicator of on-line status contains the uses as shown below:

Table 2.1 WBS 24 LED status and meanings

LED Name	Function	Green On	Green Off	Green Blinking
PWR	Status of power supply	Normal power supply	No power supply	-
WLAN	Operating status of wireless LAN	Normal operation of wireless LAN	No operation of wireless LAN	Data being received and transmitted via wireless LAN
LAN	Operation status of LAN	Normal operation of LAN	No operation of LAN	Data being received and transmitted via LAN
WLI	Connection status with the 8WLI	Normally connected with the 8WLI card	Not connected with the 8WLI card	Data being received and transmitted via the 8WLI card and the DASL line
LD1	Indicating the B channel in use	Refer to the table below		
LD2	Indicating the B channel in use	Refer to the table below		

Table 2.2 Status of WBS 24 LD1, LD2 LED Indicators and meanings

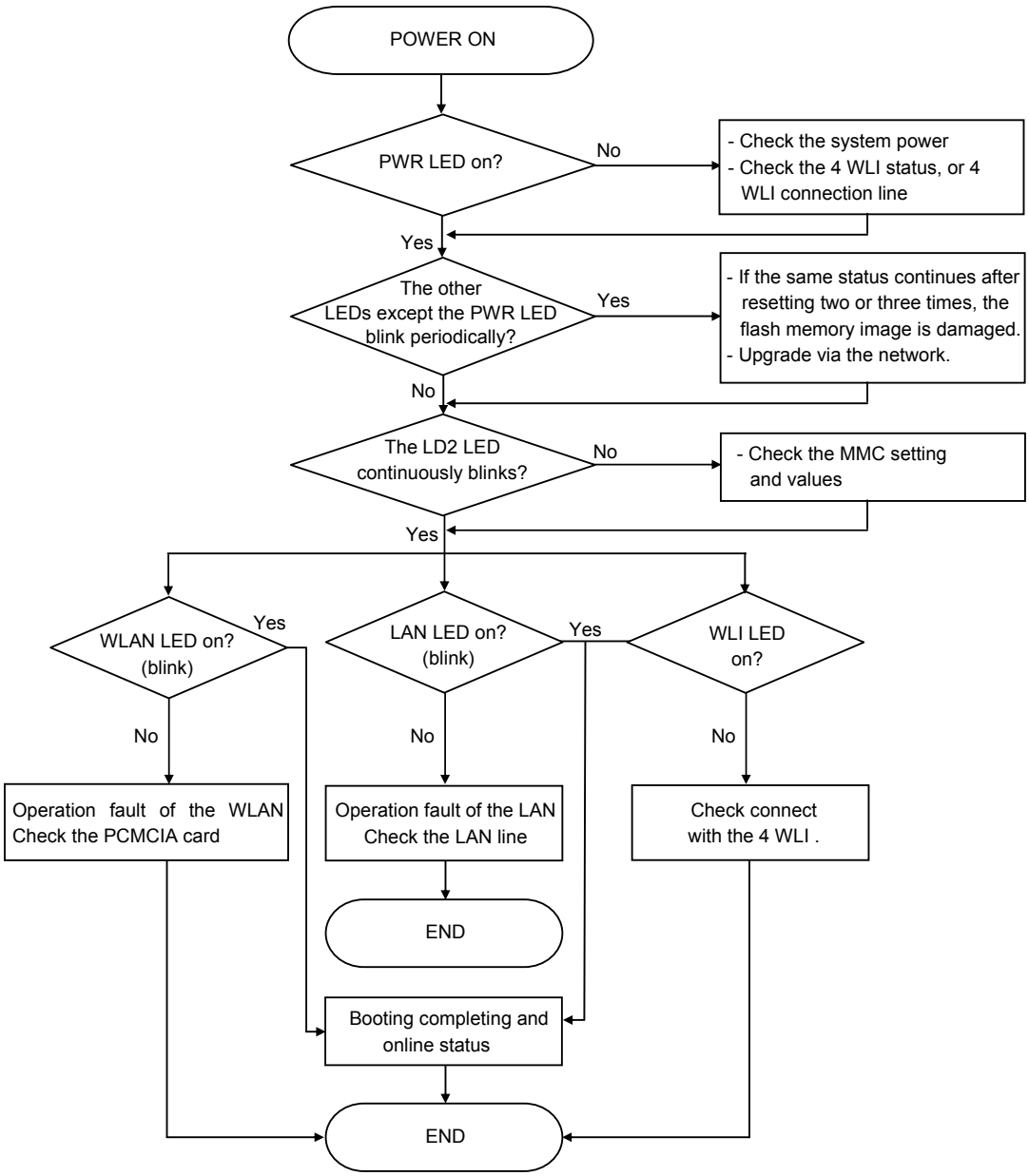
The number of B channel that is busy	LED status of the LD1	LED status of the LD2
0	Green Off	Green Off
1	Green Blinking Periodically	Green Off
2	Green On	Green Off
3	Green On	Green Blinking Periodically
4	Green On	Green On

When booting is failed

When the WBS 24 fails to boot up, it means that the flash memory with the program is not functioning. All of the 5 LEDs, except the PWR, blink periodically at the same time to inform the fault status. The flash memory might be broken when the process of the WBS 24 upgrade is interrupted, and the fault status can be removed by upgrade through network booting.

Troubleshooting

The troubleshooting steps according to the LED status of WBS 24 are explained in the following flowchart.



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CHAPTER 3. H/W Block Diagram and Schematic Description

This chapter describes the hardware blocks and related circuits of OfficeServ 100.

3.1 008 Base Board

- 008 Base Board performs as a mother board. The processor(MC68EC000) collects and analyzes all the signal data occurred when the system operates, and determines the system operation.
- Memory consists of 3 Mbytes program EPROM in the MEM 3 card, 3 Mbytes program Flash Memory in the MEM 4 card, 16 Mbytes program Flash Memory in the MCP 1 card, and 1 Mbytes SRAM in the Memory is backed up by the battery to save data in case of long time power failure(about 1 week). The backup switch should be on position to back up the memory.
- Platform of OfficeServ 100(008 Base Board) is same as iDCS 100 and DCS Compact II.
- OfficeServ 100 can accommodate iDCS 100 and Compact II cards since iDCS 100 and Compact II support backward compatibility.
- MCP 1: Containing main processor part, 2 Kbytes DPRAM for IPC communication MP & SP Processor, real time clock, a monitor LED, a RAM clear switch, LAN interface, 4 WLI, MGI 3 and MISC 3(4) card
- DTMF, sender, tone generator, timing generator, DSP tone receiver, time switch & conference are composed into one ASIC STC-9604.
- DSP in the DKP engine STC-9604 receives the DTMF signal from the C.O. line. It can treat 4 Channels(MAX) received at the same time.
- Time switch of the STC9604 accommodates 256 channels, Conference can be performed with 6 groups of 5 parties.

3.1.1 Block Diagram

The block diagram of 008 Base Board is shown below:

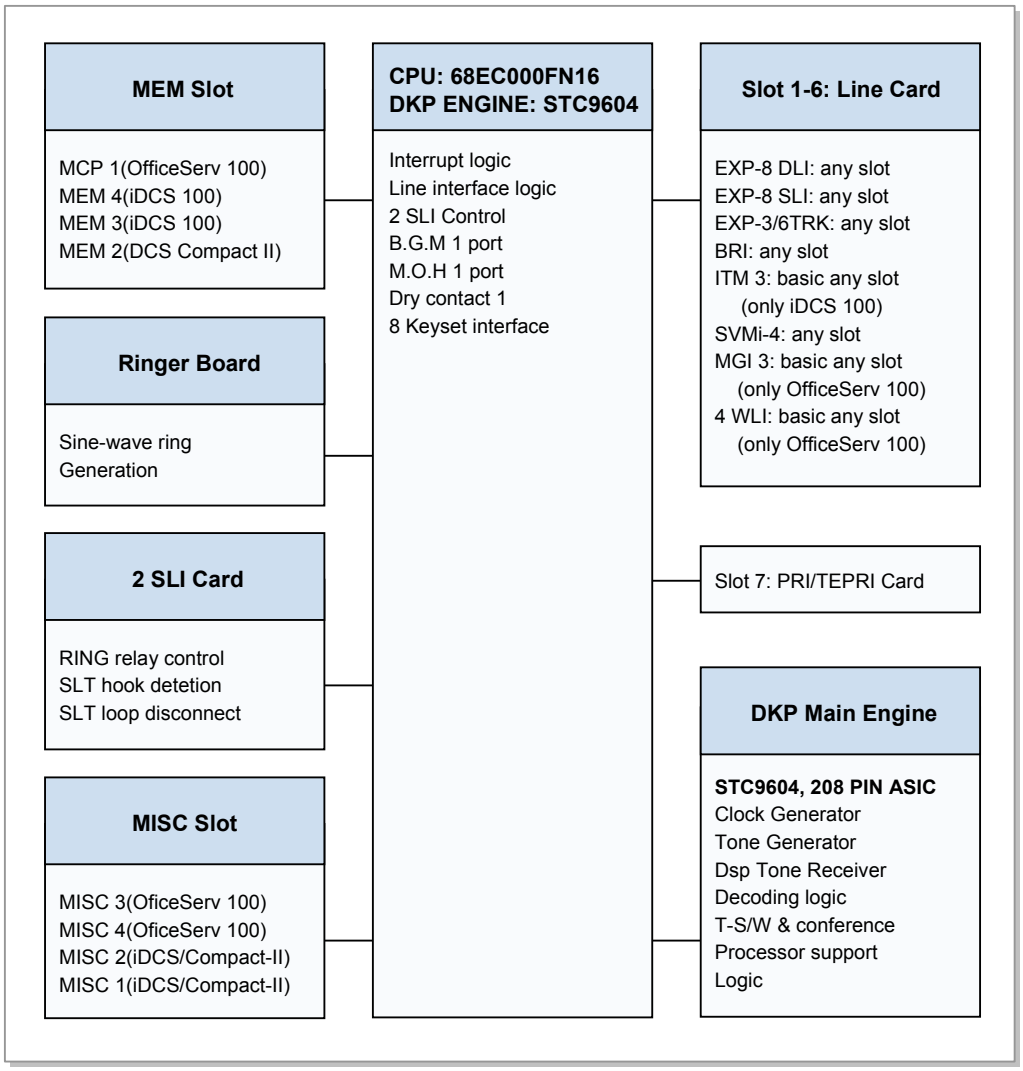


Figure 3.1 008 Base Board Block Diagram

3.1.2 Circuit Description

The Circuit Description of 008 Base Board is shown below:

CPU

Motorola 68EC000FN16 is used for CPU. 68EC000FN16 is compatible with 8 bit or 16 bit mode operation. 16 bit mode is available by setting MODE pin to high or open. In this system. 16 bit mode is used. 16.384 MHz supplied from clock generation logic and it is required to apply over than 100 ms for reset time.

Pin Description

- A0 ~ A23(Address Bus): 16 Mbytes Memory
- D0 ~ D15(Data Bus): LDS for D0 ~ D7 , UDS for D8 ~ D15
- Address Strobe(AS): Address is available while AS is low
- Read/Write(R/W)
- Upper and Lower Data Strobe(UDS, LDS)

Table 3.1 Upper and Lower Data Strobe (UDS, LDS)

UDS	LDS	Date Byte Selected
0	0	Word Operation
0	1	Upper byte(D8 ~ D15)
1	0	Lower byte(D0 ~ D7)
1	1	No Valid Data

- Data Transfer Acknowledge(DTACK): Wait signal
- IPL2 ~ IPL0(Interrupt Priority Level): Interrupt priority level of 68EC000 is determined with this 3 signal inputs.

Engine (STC-9604)

Clock Generator

The 16 MHz system clock output from 16 MHz oscillator is provided to STC9604. Engine(STL9604) generates 8.192 MHz, 4.096 MHz, 2.048 MHz, 1 kHz, and 20/25 Hz, 8.192 MHz is provided to CPU and the rest are provided to the line control IC.

Time Switch

It performs switching for 8 highway(total 256 channel). 8-steps gain control is available.

Digital Conference

It is possible to support 6 groups of 5 parties. Any 5 of 256 channels can be assigned to the station who is joined into the conference.

Tone/DTMF Generation

It generates 15 Dual/signal tones and 16 DTMFs as each 32 channels by using the sine wave from data in STC9604.

Tone/DTMF Detection

Highway data from the time slot determined in TSAC is supplied from IDSPIN(Pin61) of STC9604.

The input signal is converted to 8 bit parallel data and stored into the allocated registers for each channels.

The DSP core(inside STC9604) starts detecting by reading enabled channel PCM data at every 125 μs interrupt. Detecting is achieved only with tone detect control register enabled channel from CH1 to CH4 during 125 μs interrupt. If a valid tone or DTMF signal is detected, the result is recorded to the relevant register of each channels. CPU will read the data at the register.

Digital Line Interface

8 DLI's equipped into the 008 Base Board performs interface between DPIM, and digital keyset phone.

It uses QDASL chip(TP3404). The QDASL uses 2B+D at each port. Signal transmission is achieved with 144 Kbps full duplex Alternative Marking Inversion(AMI) code transmission mode.

End to end communication supports voice channel B1 and B2, and two extension phones can be connected to 1 port. 192 Kbps is used for actual transmission between DLI and digital phone, 16 Kbps for sync, and the rest are used for null data.

Transmission distance between DLI and digital phone covers a maximum of 400m by using AWG26 transmission code.

Parallel control data out from UART of internal DMC(in the STC9604) is converted to serial data and transmitted to DASL. DASL transmits the control data to the digital phone in a format of AMI code.

The control data out from the digital phone is transmitted to the CPU through the reverse process.

Internal DMC interface

Address A4, 5, 8, 9, 10, 11, 16 are used for communication between DMC and CPU. There are address to read/write each port D channels data, to be masking INT status, to read INT status of DASL and to be setting as the loop back mode for test. The interface includes the data bus D0 ~ D7 and INT Rx0, Rx1, and INT Tx0, Tx1. The Rx INT will be enable when even one byte is received in the buffer, and Tx INT will be enable when the buffer is empty.

If INT is enabled, CPU reads the INT status and performs INT service for the port of the selected bit. The INT status is cleared as soon as CPU read it. For highway(B-CH) control HC125(Tri-state buffer) is located between the time switch and DASL, it is enabled by TRS(pin14) of DASL. BCLKX(2.048 MHz), B4M, and CCLK(1.028 MHz)are provided for clock.

Quad Digital Adaptor Subscriber Loops(QDASL) Interface

DX & DR can transmit D-CH's serial data of each port. B-CH & D-CH are scrambled to the AMI Code and transmitted through line.

INT0 ~ INT1 are used to control the micro channel interrupt of each channel. DASL INT is occurred only when micro channel is accessed. No signal(C0), out of sync(C1), and bipolar violation(C7) are required to generate DASL INT. Since INT occurs only when power turns on at first time and the DASL status is changed by some error, INT is designed to tie up with UART Tx by using AND gate.

Keyset Interface

DLT(T2-5, T7-10) is used for matching transformer. Resistance(100 Ω) at L0 of DASL is for matching Impedance. 2 μF are used to reduce noise. Zener Diode is for hazard protection.

TMC (Inside STC9604)

Internal Trunk Module Controller(TMC: 8 Channel)

BGM 1 port

008 Base Board has one optional background music input 1 port. It can be selected between internal or external. In case of internal, used to melody IC.

PAGE 1 Port

The port is for external paging. PCM data(from highway 0 Rx) is transformed to analog signal and the analog signal is fed to transformer(T2).

Dry Contact

It is dry contact relay 1 port. It makes use of extract signal that received from engine to operate relay.

Control Signal for 2 or 4 SLI

It is generated at TMC port(in engine) to control 2 or 4 SLI card.

3.2 MCP 1 Card

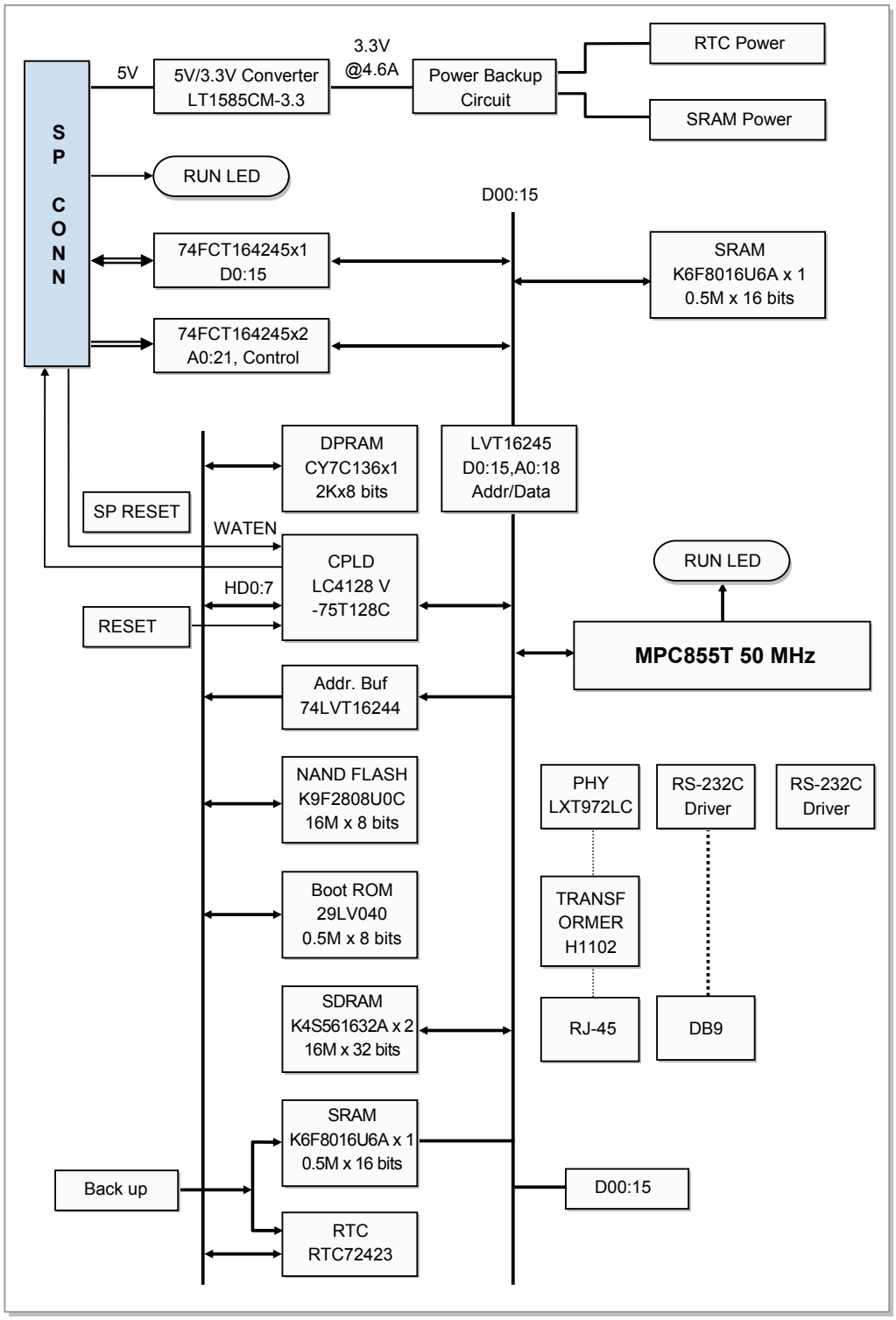
MCP 1 card is the main processor card with a 32 bit processor, and controls the overall operation of the OfficeServ100 system.
MCP 1 card supports RJ-45 LAN Interface, DB9 SIO connector and Inter Processor Communication(IPC) with SP(68EC000 in the 008 Base Board). The LAN module is required to expand the system memory, to provide SIO ports 1EA, and a 10/100 BASE-T LAN interface processor.

- MCP 1 card can accommodate iDCS 100 and Compact II cards
- MCP 1 card Includes new MISC 3(4), MGI 3 and 4 WLI cards & other cards, except MISC 1/2, ITM 3 Cards.

The MCP 1 card is mounted to the MEM slots from the basic cabinet of the OfficeServ 100 system.

3.2.1 Block Diagram

The block diagram of MCP 1 is shown below:



3.2.2 Circuit Description

CPU (MPC855T)

This is the main processor, which uses a MPC855 of Motorola. The MPC855 is a data bus that operates in 32 bit mode.

The major specifications of the MPC860 are as follows:

- Embedded Power PC core.
- 4 Kbytes of data cache and 4 Kbytes of instruction cache.
- Supports MMU.
- 32 bit Dynamic Bus Controller.
- 32 bit Address Lines.
- Memory Controller(8 banks).
- 4 16 bit timers and 2 32 bit timers.
- Built-in system integration unit.
- 8 external interrupts and 23 internal interrupts.
- High-performance SIO can operate due to the in-built communication processor.
- On-chip 16 × 16 Multiply Accumulate Controller.
- 4 baud rate Generators.
- Supports 1 SCCs that enable the HDLC communication.
- Supports 2 SMCs that enable the asynchronous communication.
- In-built MAC that can support 10/100 Mbps of LAN.

SCC

- Serial Communication Controller(SCC)1: Used as a system SIO to enable you to use SMDR or PCMMC.
- Serial Management Controller(SMC)1: Debug port for system engineers.
- Serial Management Controller(SMC)2: Used as a communication port to control 500 MODM D-Board.

System Clock

50 MHz is used as the main clock oscillator in the MCP 1 card.

Program Flash ROM

The flash ROM of 16 Mbytes is used as the memory where the program needed to start and operate the system is saved. The saved program can be upgraded by using SIO or LAN interface

Boot ROM (Flash ROM)

512 Kbytes of flash ROM is used as boot ROM. The boot ROM downloads the STARTUP.PRS program(system startup program) needed to operate the system on SDRAM from program flash ROM. Once the STARTUP.PRS program runs, the boot ROM downloads the main program from program flash ROM and the system operates properly.

SDRAM

32 Mbytes is provided for SDRAM. The main program is resident in the SDRAM, which saves data needed to process the system. In addition, the SDRAM is designed to operate as 'No Wait' to ensure the highest performance of the system.

SRAM

1 Mbytes is provided for SRAM. Memory can be backed-up in SRAM, which saves a variety of information on database. The information on database needed to operate the system is saved in SRAM.

Real Time Clock(RTC)

RTC72423 of SEIKO is used as RTC. Super cap supports its back-up.

Watch Dog

Watch Dog recovers the system automatically when an error occurs in the system.
It is designed to reboot the system if the system abnormally operates for about 1.6 seconds.

CPLD (Complex Programmable Logic Device)

CPLD of Lattice is used. CPLD consists of most logics used for the MCP 1 card. The logics can be changed by using PC from outside through the JTAG bus.

LAN Interface

The MCP 1 card may be connected to LAN without a LAN card. MAC is built-in CPU and the maximum connection speed is 10/100 Mbps. Once the LAN cable is mounted, the speed is automatically selected.

Universal Asynchronous Receiver & Transmitter (UART: SIO)

UART is an element, which enables the asynchronous serial communication and is used as a system input/output port(SMDR or PCMMC). UART is connected to outside through the DB9 connector.

- The default speed is 19.2 Kbps and it can be changed. High-performance SIO can operate due to the in-built communication processor.

3.3 MEM 3 (4) Card

MEM 3 and MEM 4 card are two kind of new memory card type

3.3.1 MEM 3 Card

Changing Point

For expanded program memory(EPROM) size:

- 2 Mbytes → 3 Mbytes
- Compact-II → iDCS 100

Other functions(SRAM 1Mbyte, RTC, Watch-dog & LED drive circuits etc) are same as Compact-II MEM or MEM2 card

3.3.1.1 Block Diagram

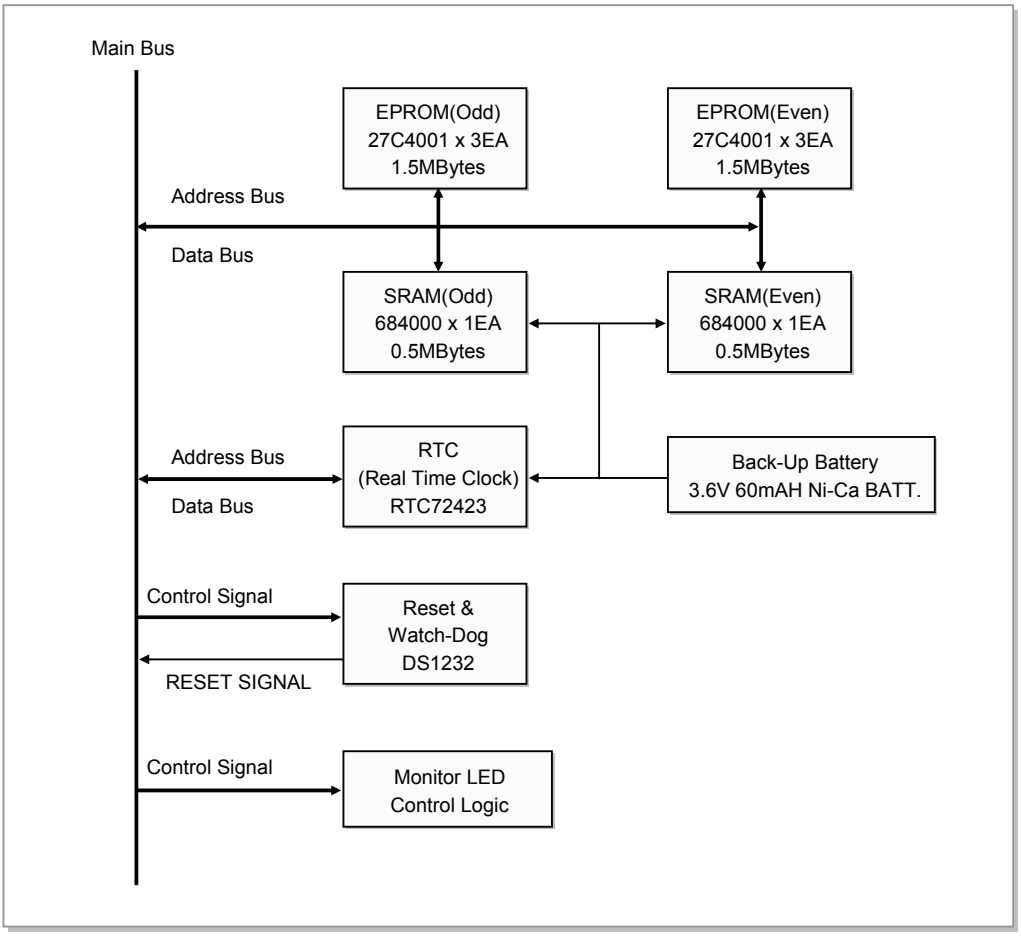


Figure 3.3 MEM 3 Card Block Diagram

3.3.2 MEM 4 Card (With LAN Interface)

Changing Point

- Expanded program memory(Flash memory size: 3Mbytes) with LAN interface
- Flash memory to use for program & database download by LAN interface
- Other functions are same as Compact-II MEM(2) or MEM 3 card

LAN Interface circuit

- Flash memory size: 8 Mbytes
- Speed: 10/100 Mbps
- Physical connection: RJ-45(1 Port)
- Serial communication port(Async): 1 Port(DB9 Connector)

LAN Circuit LED status

Table 3.2 MEM 4 Card LAN Circuit LED Status

Display LAN Speed Status	ON	OFF
LED 1	100 Mbps	10 Mbps
LED 2	Link	No Link
LED 3	Rx Data Exist	None

3.3.2.1 Block Diagram

The block diagram of MEM 4 Card is shown below:

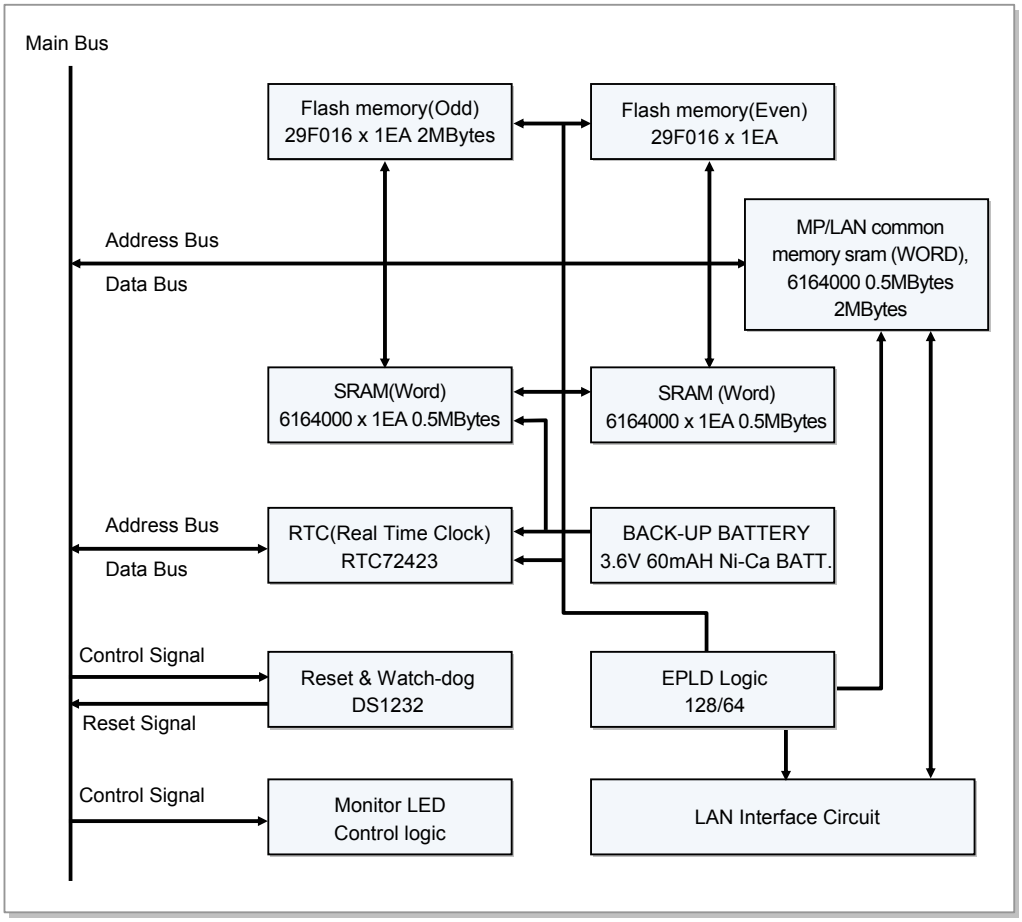


Figure 3.4 MEM 4 Card Block Diagram

3.3.2.2 LAN Interface Circuit

LAN interface is provided by a MEM 4 board that is installed on 008 Base Board. It provides system SIO function and LAN network interface for running an application

The block diagram of LAN interface circuit is shown below:

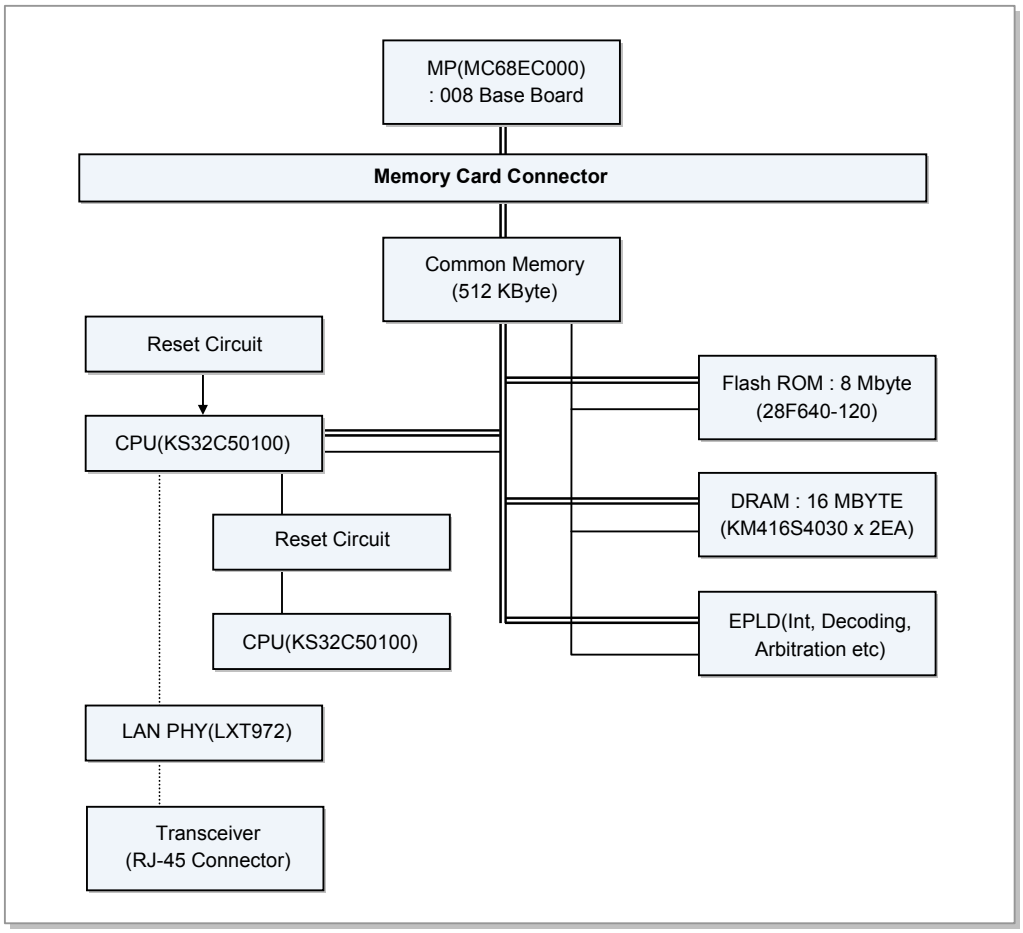


Figure 3.5 LAN Interface Circuit Block Diagram

CPU (KS32C50100)

CPU has a 32 bit bus structure, and the bus width following the register setting. In case of reset, the boot ROM runs in 8 bit mode.

Boot ROM

Boot ROM used flash memory whose capacity is 512 Kbytes. The data bus is running in 8 bit mode. At boot ROM, programs necessary for the booting LAN circuit are saved, and if necessary, they can be upgraded by downloading programs from LAN.

DRAM

DRAM uses synchronous DRAM and the capacity is 16 Mbytes. The data bus is composed of 32 bit.

Main CPU Interface

The message exchange with Main CPU is performed by the common memory mode.
The capacity of common memory is 512 Kbytes. The hardware is configured in a way that the common memory can be accessed from both Main CPU and LAN CPU, and its logic is configured within the EPLD.

PHY (LXT972)

PHY is a physical interface for LAN connection and uses LXT972 from level one.
The MAC function is provided within the CPU, so it is not configured externally. RJ-45 connector for LAN cable connection is located on MEM 4 board.

SIO Port (DC9)

One SIO port is basically provided and asynchronously operated.
The maximum transmission speed of the port is 38.4 Kbps and the basic transmission speed is 19.2 Kbps.
Pin configuration of SIO port is shown in the following table:

Table 3.3 Pin Configuration of SIO Port

No	Name	Source	Destination	Remarks
1	-	-	-	Not used
2	RxD	Ext.Equip	OfficeServ 100	Async Max 38.4 Kbps
3	TxD	OfficeServ 100	-	Async Max 38.4 Kbps
4	DTR	Ext. Equip	OfficeServ 100	Data Set Ready
5	GND	OfficeServ 100	OfficeServ 100	Ground
6~9	-	-	-	Not used

LAN Port (RJ-45)

Pin configuration of LAN port is shown in the following table:

Table 3.4 Pin Configuration of LAN Port

No	Name	Source	Destination	Remarks
1	TD+	OfficeServ 100	-	Tx Data
2	TD-	OfficeServ 100	-	Tx Data
3	RD+	Network	OfficeServ 100	Rx Data
4	-	-	-	Center TAP
5	-	-	-	Center TAP

No	Name	Source	Destination	Remarks
6	RD-	Network	OfficeServ 100	Rx Data
7	-	-	-	Center TAP
8	-	-	-	Center TAP

3.3.3 MEM 3 (4) Card Circuit Description

Real Time Clock (RTC)

RTC72423 which has small access time is used for RTC. It is equipped in the MEM Card for battery back up function. CPU is connected at data bus. D8 ~ D11 and A1 ~ A4 is used.

Memory Backup

60 mA battery equipped in the MEM Card is used for memory backup by SRAMs and RTC IC in case of power failure for a maximum of one week. To erase the SRAM and the RTC data, set the backup switch to off and turn the power off. Software reset also available.

Watch Dog

It monitors the address within the specified range and reset the system if it can not access the address within a specified time. If the program does not work properly, the watch dog address can not be accessed within a specified time, and Watch dog circuit resets CPU. Watchdog is inserted to ST * of Micro-monitor chip DS1232S(DALLAS).

Power On Reset

DS1232S resets the CPU when power turns on. It stabilizes the system operation. DS1232 Accepts a minimum of 250 ms as reset time and the reset voltage to be 4.5 V by adjusting TOL Pin.

Table 3.5 MEM 3(4) Card Power on Reset

TOL	Voltage		
	Min	Typical	Max
VCC	-5 V	4.5 V	+5 V
GND	-5 V	4.74 V	+5 V

Manual Reset

Manual Reset can be operated by turn on TACT switch being connected PBRST* pin.

Monitor LED Indication

One LED which shows the system status according to the system programming is equipped in the MEM 3(4) card.

- LED Off: Abnormal power
- LED On: Power is normal but system does not work properly
- LED Blink: Both power and system are normal.
  (Normal system means memory read/write and decoding logic work properly)

3.4 3 TRK Card

3.4.1 Block Diagram

The block diagram of 3 TRK Card is shown below:

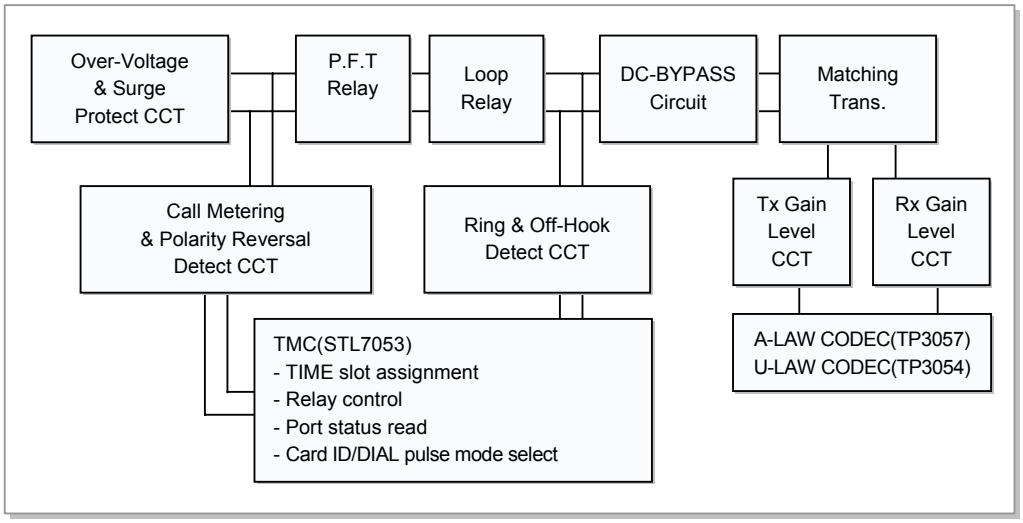


Figure 3.6 3 TRK Card Block Diagram

3.4.2 Circuit Description

Loop Trunk Interface 3 port

Sending and receiving voice frequency range(300 Hz~3400 Hz) between keyphone system and trunk line are achieved with DC current bypass circuit, matching transformer, balancing network, hybrid circuit, PCM codec, channel assign timing control, digital gain control circuit. DC bypass circuit is needed for using small transformer with DC bypass before T1, T2, T3 transformer. Off-hook & ring signal detecting circuit are in this internal circuit.

Loop start trunk is applied to system which has complex resistive impedance.

Surge and Over Voltage Protection Circuit

Fuse type surge-Absorber for first protection circuit, T.V.S(1.5KE15A) for second protection circuit and zener diode for third protection circuit are provided to protect the system from surge and over voltage damage at 3 trunk lines.

Polarity Reverse Sensing(PRS) Circuit

It is signal polarity reverse detecting circuit of C.O line interface. Be careful TIP-RING lead’s polarity when installing system at the site.

Ring Incoming Signal Detection Circuit

Ring incoming signal from C.O is available when TRK interface is hook-on status, regardless of trunk type. DC voltage of Ring signal is cut by poly-capacity(0.82 μF/250 V) and ring signal above reference value(relation with Zener diode(5.1 V) is passed.
Ring signal generates ring detection signal when above setting voltage(1.2 V) is flowed through serial connected diode(2 EA) and parallel connected photo coupler input. It switched high if ring signal is applied.

DC Current Bypass Circuit

This circuit seizures DC loop and passes AC signal to the next step. It generates output of H.O.S detection to the system with photo coupler.

Caller ID Relay

It makes path(by RL4, RL5, RL6) to detect caller ID in 1200 bps FSK signal received between ring and ring during on hook state. DSP for Caller ID is in the MISC card.

Balance Network

It is used for 2W/4W interface. Tx uses OP AMP(3404) and Rx uses OP AMP in the codec.


NOTE

6 TRK Card

It has 8 loop start trunk port and 2PET port. Other function is same 3 TRK Card

3.5 8 SLI Card

3.5.1 Block Diagram

The block diagram of 8 SLI Card is shown below:

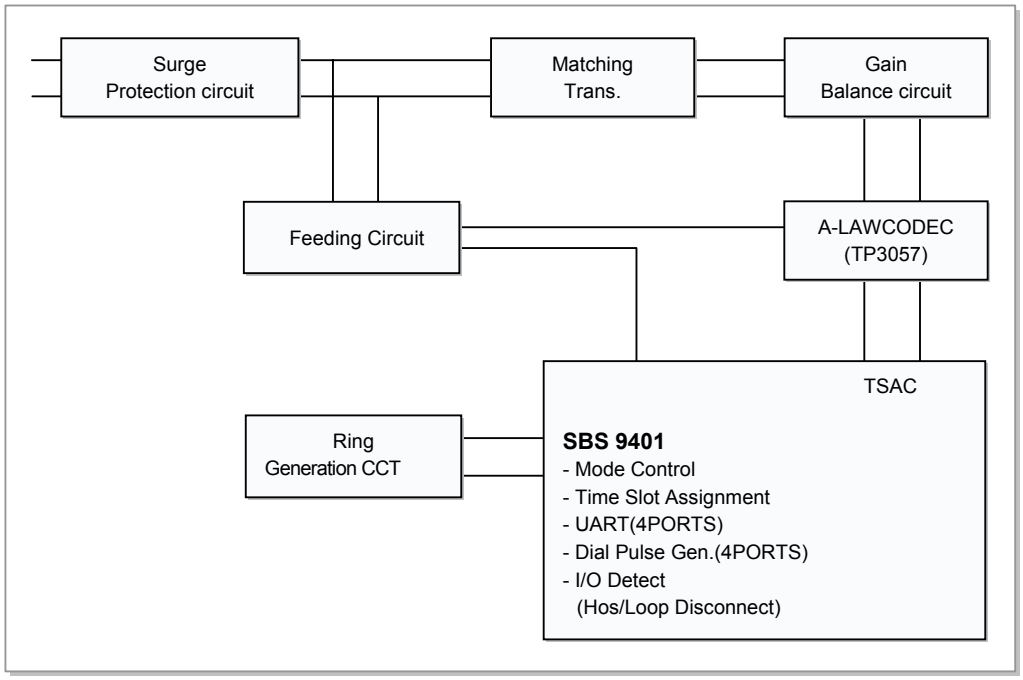


Figure 3.7 8 SLI Card Block Diagram

3.5.2 Circuit Description

Voice path

The voice signal from subscriber is fed to primary T1 with AC plus DC forms. The output signal from T1 is AC signal. Balance logic with using OP-AMP(MCC34072D) transmits and receives +2.0 dBm to the Tx port of codec, -7.0 dBm down to the subscriber from Rx port. Then is supplied to highway 0 after converts signal as PCM code by codec. codec receives 2048 MHz clock frequency, and loads 8 kHz Delayed PCM DATA to DX & DR by sampling for each 8 kHz. A-law is used by pull up BCLKR, 7th Pin of Codec.

SLI Interface

DC Loop Disconnection

It is composed with connection and disconnection DC Loop. If LD Signal pin(output of ASIC IC(SBS9401)) is Low, DC(-48 V) is supplied to the line and restricted current flowing to the loop by connecting 300 ohm. If LD Signal is high, DC loop is cut.

Loop & Pulse Detection

Loop detection detects hook on/off state of single line telephone. When hook-off is occurred, DC loop is enabled. TR(Q33) Emitter port is lower than GND level, so TR(Q41) is off and output is high. Normal state output is low. When subscriber uses dial pulse, detects digit state as the same above procedure.

Ring Trip

If the subscriber lift handset when the telephone is ringing, Relay are released to finish the ring signal transmission. When the subscriber hook-off during ringing, Collector of TR(Q41) outputs high.

Ring Generator Circuit

Ring(80 Vrms/40 mA,20/25 Hz) is transmitted to the line with driving relay(TQ-5 V) controlled by RCO-1 received from 008 Base Board when to generate Ring. Ringer circuit is composed of pulse for small and simple.

Balance Network

It is used 2W SLC, 4W SLC interface. In this circuit, hybrid IC(KP007SA) equipped with 4 port OP-MP uses at each Tx port OP AMP in the codec uses at Rx port.

3.6 2 SLI Card

3.6.1 Block Diagram

The block diagram of 2 SLI Card is shown below:

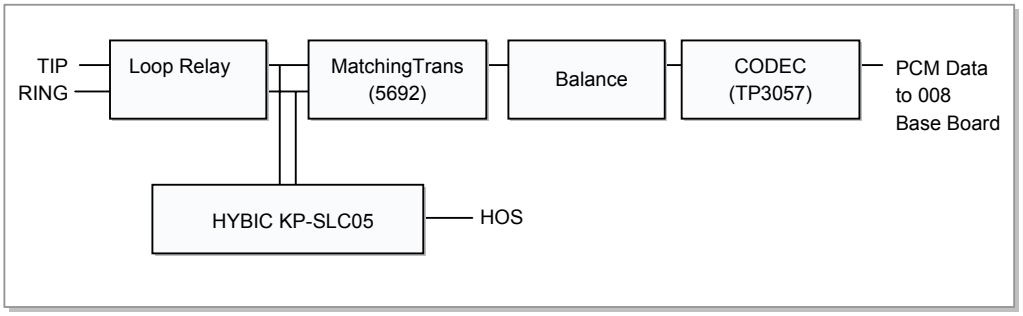


Figure 3.8 2 SLI Card Block Diagram

3.6.2 Circuit Description

SLI Voice Interface

The signal from the regular telephone is fed to primary T1(5692) through the pins 2, 3, 7, and 6 of k1, and C103, C104. The output signal from T1 is fed to VFXI(pin15) of U102 through the balance circuit HYB4, then is supplied to Highway 0 in a format of PCM data.

DC Feeding

-55 V DC, the power operate a single line telephone, comes out from pin 2 and 4, and is supplied to the regular telephone.

Hook Detection & Dial Pulse Detection

HYB 1 is used to detect hook on/off signal or pulse dial on a signal line telephone.
If the phone is off-hook of during the make time of pulse, HYB 1 pin 5 becomes low, and if the phone is on-hook of during the break time of pulse, HYB 1 pin 5 becomes high. The condition of pin 5 transfers to the pin 23 of U20 in the 008 Base Board.

Ring Trip

If the station user lift the handset when the phone is ringing, Relay K1 and K2 are released to finish the ring signal transmission. The pin 5 of HYB 1 and 2 become high. TMC(U20) can detect the signal status.

3.7 8 DLI Card

It is option card required 8 digital extension lines. U1(STI9511) controls 8 digital extension lines. The card contains the followings:

- Digital Module Control(DMC) Interface
- Digital Adaptor Subscriber Loops(DASL) Interface
- Dissimilar Gateway Protocol(DGP) Interface

3.7.1 Block Diagram

The block diagram of 8 DLI Card is shown below:

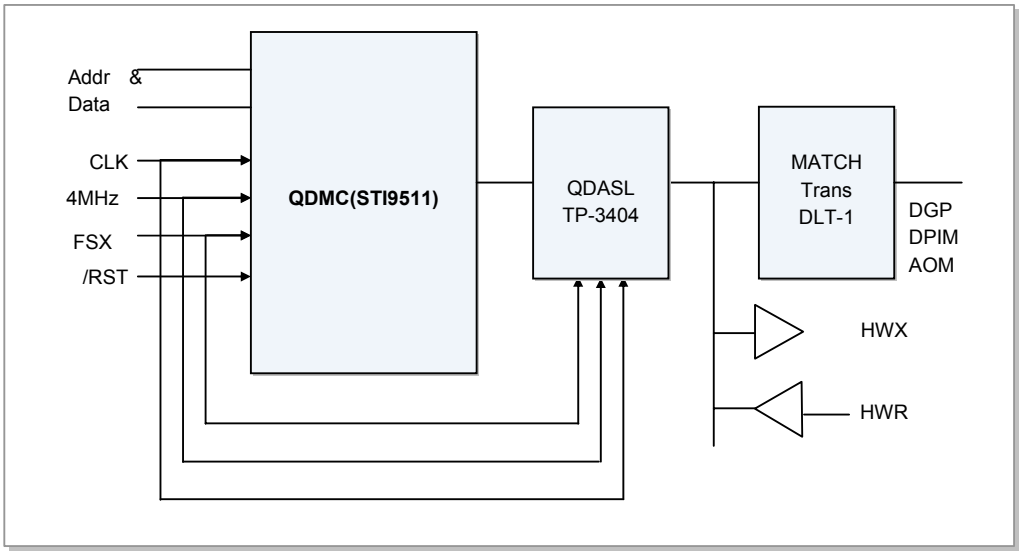


Figure 3.9 8 DLI Card Block Diagram

3.7.2 Circuit Description

QDMC (STI9511)

QDMC(STI9511) is a specifically designed Application Specific IC(ASIC) used to control the TP3404, a Quad Digital Adaptor for Subscriber Loops(QDASL) chip of National Semiconductor(NS). The TP3404 is an expanded chip of TP3401/3402/3403. A single transceiver of channel Time Compression Multiplexed(TCM) transmission mode is expanded to 4 ports and the micro wired control and other control structures are modified.

The Characteristic Features of the QDMC are as follows:

- Reception/transmission of data in the Universal Asynchronous Receiver and Transceiver(UART) for the D-Channel
- Selectable UART data speed(2 Kbps /4 Kbps /8 Kbps /16 Kbps)

- B-Channel has a bypass interface feature.
- Micro wired Serial Control(16 bit) interface
- Control of two TP3404 chips(a total of 16 Channels can be used.)
- Recognition of the card and identification
- 4.096 MHz Master Clock
- 5 V Operation

QDASL Interface

The QDASL is the D-Channel of each port, and there are RxD and TxD for transmission of serial data. The AMI code is made along with the B-Channel and sent to the line, and the D Channel is used to control the telephone and the B-Channel is used to make voice signals. The QDASL has /INTD for processing the channel interrupts to the microphone of the QDASL in each port. However, INT of the QADSL is generated only when the channel is accessed with a microphone and when the DASL is initialized. At this time, the INT generating conditions are No signal(CO), Out of sync(C1), bipolar violation(C7), etc. Since INT is generated only when power is first turned on and when a QDASL status is changed due to an error from the telephone, UART Tx INT and AND gate are used together in a combined form. INT is a clock of the µ-CH control part that sets up the QDASL's initial state. INT is configured of CCLK(1 MHz), CI for control data entry, and CO for status print-out. Also, the B-Channel, which can allocate 8 bits and 32 channels per 8 K(the same method as the system hardware allocation.), opens up the hardware buffer according to its own hardware frame sync and sends to the QDASL. The control data is transmitted to the sub time slot D-Channel, which can allocate 2 bit of 256 Channels. Here, the sub time slot means dividing 8 bits of the B-Channel into 4 of 2 bits. Therefore, to receive 1 byte of D-Channel data from the QDASL, four frames of data should be received.
On the other hand, the QDMC provides 128 sub time slots.

Digital Telephone Interface

The digital telephone can be connected as a result of the following steps:
The QDASL(TP3404) generates the AMI code and sends it to the digital telephone through a Trans. Also, the AMI code received from the telephone via trans is demodulated and the serial data is sent to the QDMC. The QDMC converts the entered serial data into parallel data through UART and sent to the CPU.
Since one QDMC controls two QDASLs(a total of 8 ports), generated a /TSB signal from each QDASL will be used after ANDing.
DLT-1 is used as a matching trans. The resistance of 100 Ω located at the QDASL LO layer is for adjusting impedance and 2 µ F is for noise reduction. Also, two Zener diodes(3.6 V), the trans input terminal is for protection against hazards. The power of -56 V is supplied to the telephone through a poly switch in order to prevent excess current from coming into the telephone. The varistor at the input terminal of a trans is for protection against hazards.

3.8 MISC 1 (2) Card

One dedicated slot in the Basic KSU is for an MISC card and two kinds of MISC cards are available.
MISC 1(2) cards only used together with the MEM 4(or MEM 3 or MEM2: iDCS 100 or DCS Compact II System) cards. New MISC 1A(2A) Card installed with 500 MODEM is not operation SIO 1 RS232C.
The MISC 1 card contains below items :

- One additional external music interface for MOH or BGM
- One additional external page interface
- One alarm sensor detection circuitry
- 4 channels DTMF receiver
- Three general-purpose Dry contact relays
- 8 channel FSK Caller-ID
- Two RS232C Serial interfaces with connectors for PCMMC, SMDR and external local modem interface.

The MISC 2 card is similar to the MISC 1 card but is also equipped with a built-in 4-ch AA function.
It is strongly recommended that this card be used in situations requiring heavy single line telephone use.

3.8.1 Block Diagram

The block diagram of MISC 1(2) Card is shown below:

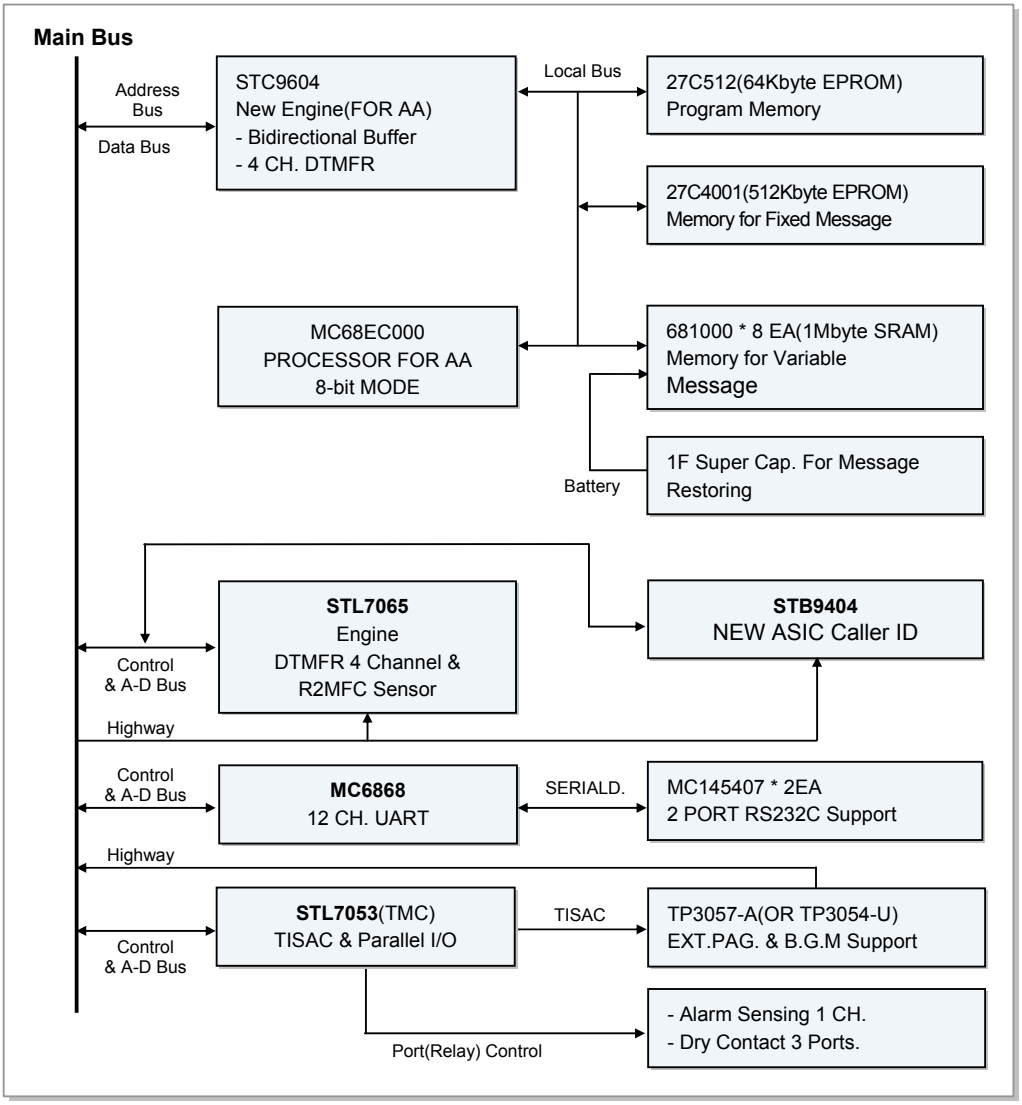


Figure 3.10 MISC 1 (2) Card Block Diagram

3.8.2 Circuit Description

Dry Contact

It is used to signal control of 3 port for signal's On/Off for external paging, BGM source or other purpose's On/Off. Mute signal of TMC ASIC(SLT7052) controls the 3 port.

Zone 1 = Mute 0(Write 800000 D6)
Zone 2 = Mute 1(Write 800100 D6)
Zone 3 = Mute 2(Write 800200 D6)
Data '0' = Normal Open
Data '1' = Relay On

External MOH

There are external/internal MOH Interface in the 008 Base Board. External MOH in the MISC board is prepared for 1 more port needed. Input impedance is matched to 600 ohm. This circuit is divided by transformer, and output impedance is 600 ohm. Adjust gain with using OP-AMP and MOH level is 17 dBm. The signal goes to the HWR0 though codec that is switched at the T-switch of the 008 Base Board.

RS232C Interface

It is composed with RS232C driver 2 port to communicate serial data for SMDR & PC MMC. MC68681 is used for UART. Baud rate can be changed from 75 bps to 19.2 Kbps by S/W programming. Interface that reading data at the CPU is interrupt mode, and /Wait signal is inserted to the CPU(in the 008 Base Board) by DTAK signal that generated when control command is written. Interrupt level is main process's level 5, same as DLI SIO Rx INT, S/W can distinguish type whether SIO Rx or DUART.
MC68681 is used as RS232 line driver/receiver IC, satisfied with EIA-232D & CCITT V.28. Power of MC68681 uses +5 V to the RS232C connection part, and 5 V/GND to the logic circuit.
Internal Logic is made up of Inverter. If output data of MC68681 is low, output +3.9 V(3.5 min, RL = 3 kohm), but if high, output -4.3 V(-4.0 V min, RL 3 kohm) to the connection port.
When data is inserted from external device, 1.80 V(1.35 V min) is operated as input turn on voltage(low input to the MC68681) and 1.0 V(1.25 V max) is operated as turn off voltage(high Input to the MC68681). Both of 2 ports(RS232C connection) is 9 pin connector(DB9).

Table 3.6 Serial Interface Port Pin Description

PIN No.	1	2	3	4	5	6	7	8	9
Function	DCD	RxD	TxD	DTR	GND	(N.C)	RTS	CTS	(N.C)

4 Channel DTMF Receiver

Engine(STL7065) is used to channel DTMF receiver, and used to only DSP(for DTMF) See The 008 Base Board circuit description for the DTMF receiver.

4 Channel Automatic Attendant(AA)

The circuit performs auto attendant that provides automatic answering of incoming calls, Presentation of choices to the caller, and connection to extensions based on those choices.

A.A Feature

- A number of channel: 4 Channel.
- AA recording time:(120 sec recording regeneration +60 sec regeneration)/Channel
- A number of AA DTMF receiver: 4 Channel.
- Processor: 68EC000 FN 16.
- AA memory size:
  - SRAM 1 M → Voice data and program
  - EPROM 512 K → Voice data
  - EPROM 64 K → Program memory
- IPC with main memory: Using 2 latch of 1 byte in the STC9604.
- Recording Data Backup: Using 3.6 V Ni-Cd battery.
- It is possible to record with BGM port in the 008 Base Board.

8 Channel FSK Caller-ID Receive

STB9404 is the ASIC that provides CID detection.

3.9 MISC 3 (4) Card

Many miscellaneous function DTMF receiver(4ch), BGM, Page, Common Purpose Relay(3port), CID Rx, 500 MODEM(option) are contained MISC 1. MISC 4 support MISC 3 feature and 4 channel AA.
New feature support the FSK Caller ID sender to SLT: With total 16 Channel for CID Tx & Rx ports.
Only used 500 MODEM optional D-board and 3 pin cable connected the MCP 1 board for MP serial data(TxD, RxD ,GND) signaling to the modem.
MISC 3(4) cards only used together with the MCP 1(OfficeServ 100) cards

3.9.1 Block Diagram

The block diagram of MISC 3(4) Card is shown below:

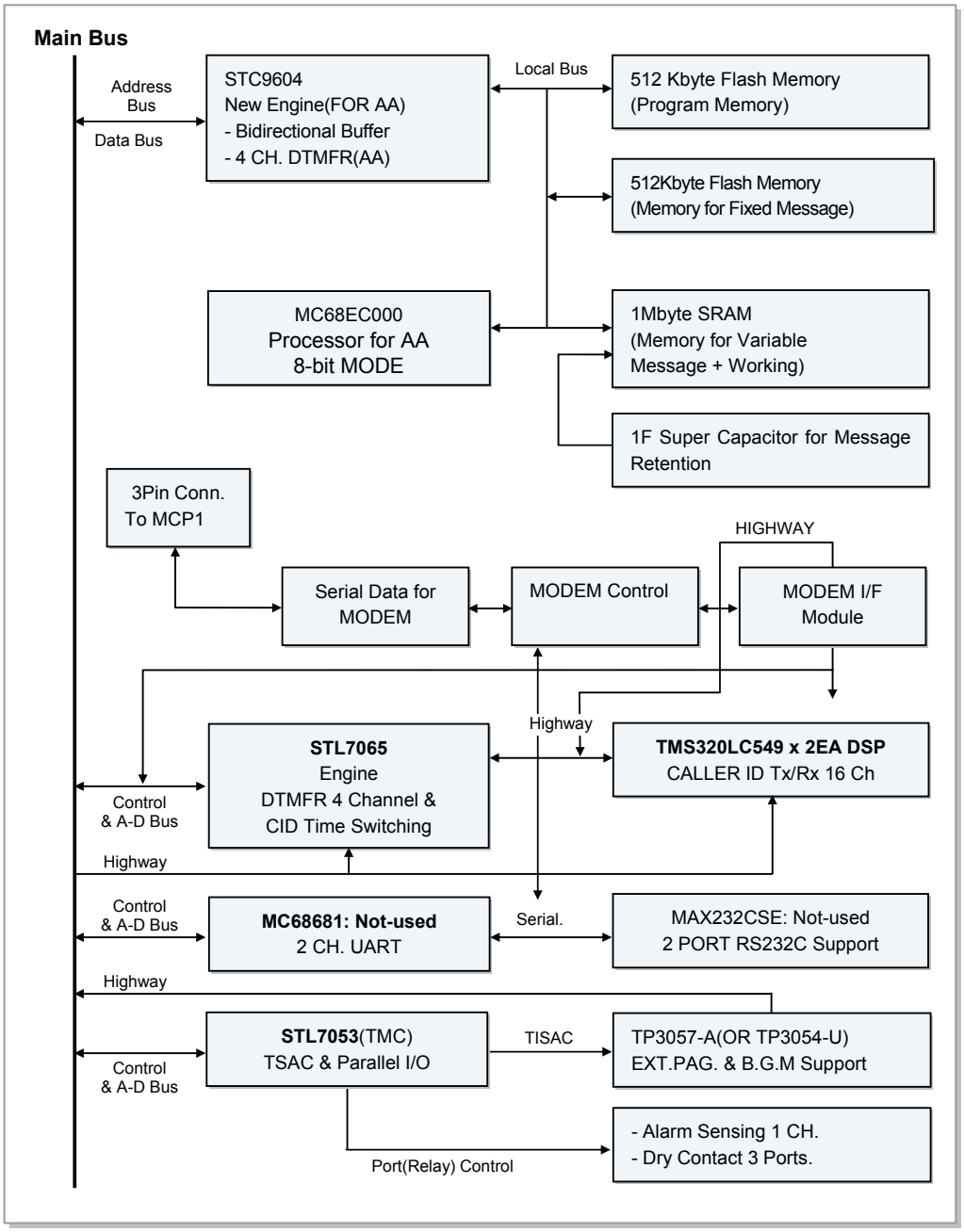


Figure 3.11 MISC 3 (4) Card Block Diagram

3.9.2 Circuit Description

Programmable Logic Device(PLD)

CPLD of Lattice is used for PLD. PLD consists of most logics used for the MISC 3(4) card. The logics can be changed by using PC from outside through the JTAG bus.

500 MODEM Daughter Board Interface

The common resource board is mounted to the OfficeServ 500 modem daughter board.

16 Channel FSK Caller-ID Receive and Transmit

TMS320LC49 IC is the DSP that provides CID detection and transmit.
The CID function provides up to 8 channels receive and 8 channels transmit basically per DSP chips.

4 Channel Automatic Attendant (AA)

- A number of channel: 4 Channel
- AA recording time:(120sec Recording Regeneration + 60sec Regeneration) ÷ Channel
- A number of AA DTMF Receiver: 4 Channel
- Processor: 68EC000 FN 16
- AA Memory Size:
  - SRAM 1 M → Voice data and program
  - 512 K Flash Memory → Voice data
  - 512 K Flash Memory → Program memory
- IPC with main memory: using 2 latch of 1 byte in the STC9604
- Recording data backup: 1 F super capacitor

3.10 4 BRI (S0T0) Card

The Basic Rate Interface(BRI) card is used to connect the terminal for ISDN and the system. The station's ISDN switching system. The BRI card is composed of 2 B-Channels for transmitting voice and data, as well as 1 D-Channel for transmitting signals. B-Channel or D-Channel, each transmits with a speed of 64 Kbps and each board is composed of 4 ports.

3.10.1 Block Diagram

The block diagram of 4 BRI(S0T0) Board is shown below:

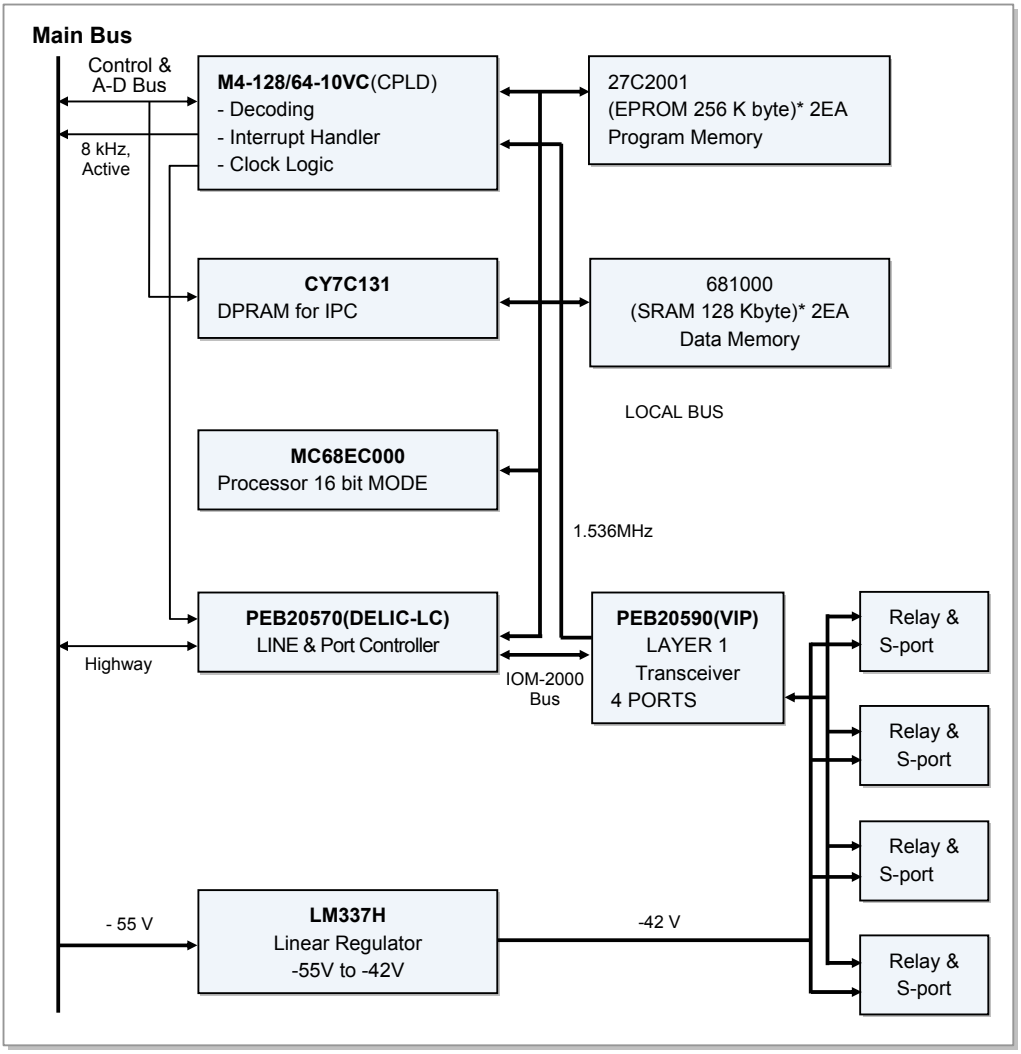


Figure 3.12 4 BRI (S0T0) Card Block Diagram

3.10.2 Circuit Description

CPU and Memory

The CPU is for 16 bit. The 68EC000 of Motorola is used. It has a built-in serial transmission function. ROM is 512 Kbytes and SRAM is 256 Kbytes.

Reset Logic

The DS1232S chip is used, and it performs the power on reset, watch-dog, etc.

IPC (Information Exchange Between Main ↔ BRI CPU)

The dual port memory(C7C131, 1024 byte) is used for Inter Processor Communication(IPC) between SP and the CPU inside BRI. The memory performs decoding logic, interrupt control, and priority adjustment simultaneously.

PLD

CPLD of lattice is used for PLD. PLD consists of most logics used for the MISC 3(4) card. The logics can be changed by using PC from outside through the JTAG bus.

Interrupt

- Level 7 | Non-maskable interrupt used in debugger(unused).
- Level 6 | DELIC-LC interrupt for line and port interface controller.
- Level 5 | Unused.
- Level 4 | Interrupt for IPC.
- Level 3 | 1 msec interval timer interrupt for priority task generation.
- Level 2 | Interrupt for prohibited memory-access.
- Level 1 | SIO interrupt(unused).

Control-signal latch for I/O Interface

Control signal is needed to communicate between input/output device and CPU.

- D8(layer 1 activated): This bit indicates layer 1 status whether it is available or not.
- D9(enable 8 kHz): It is start bit of 8 kHz generation logic to sync with received signal from line.
- D10(confirm bit): If this bit is high, card is power-on-reset status. But if this bit is low, 1 kHz generated in the key-system is supplied continuously, and periodic port access is not necessary.
- D13(confirm bit): This bit is used for stopping offered frame sync.

Basic Rate Interface (BRI) part

4 BRI(S0T0) Card has 4 ports-BRI, and BRI is composed with 2 B-CH(64 Kbps voice-band), call channel, and 16 Kbps D-CH for signaling.
VIP(PEB 20590), the new programmable U_PN and S/T transceivers, provide 8 layer-1 ports via IOM®-2000 interface. They have to be connected to DELIC via IOM-2/GCI.
DELIC is available in two dedicated versions: DELIC-LC(PEB 20570) is a line card controller providing switching, multiple HDLC and layer-1 control.
The DELIC and VIP chipset is the most flexible and optimized solution for telecom applications like digital line cards.

VIP (PEB 20590, Versatile ISDN Port/DSP Embedded Line and Port Interface Controller)

The VIP is a configurable ISDN transceiver vice for the interface standard S/T.

- Eight 2B + D line interfaces with full duplex transceivers, up to four S/T.
  - S/T I/F at 192 kbit/s with line transceivers(ITU-T I.430,ETSI 300.012 and ANSI T1.605).
  - Receive timing recovery via on-chip PLL.
  - Conversion between pseudo-ternary and binary codes
  - Execution of test loops
- IOM-2000 interface to DELIC supporting up to three VIPs(24 Channels).
  - Transceiver initialization and configuration
  - Control of layer-1 activation/deactivation
  - Exchange of command and status information
- Signaling control for all VIP channels by dedicated HDLC controllers in DELIC

DELIC-LC (PEB20570,DSP Embedded Line and Port Interface Controller).

- One IOM-2000 I/F supporting three VIPs i.e up to 24 ISDN channels
- Two IOM-2(GCI) ports(configurable as PCM ports) supporting up to 16 ISDN channels or 32 analog subscribers
- 4 PCM ports with up to 4 × 2.048 Mbit/s(4 × 32 TS) or 2 × 4.096 Mbit/s or 1 × 8.192 Mbit/s
- Switching matrix 256 × 256 TS(8 bit switching)
- 24 HDLC controllers assignable to any D or B channel(at 16 Kbit/s or 64 Kbit/s)
- Serial communication controller: high speed signaling channel for 2.048 Mbit/s.
- General purpose I/O ports
- Programmable PLL based Master/Slave clock generator, providing all system clocks from a single 16.384 MHz crystal source

System Interface Clock Unit

The BRI trunk is composed of the LT-T mode and operates according to the system' standard clock based on the BRI line's clock. The synchronizing circuit synchronizes the entire system clock based on the 8 kHz clock at the PLL of 008 Base Board.

S0/T0 Feature

Basically, ISDN provides S0 TRK(TE mode) of BRI and the intercom interface(NT mode) together.

3.11 PRI Card

- CPU and Memory
- Keyphone System Interface
- PCM Data Highway Interface
- PRI Network Interface

3.11.1 Block Diagram

The block diagram of PRI Card is shown below:

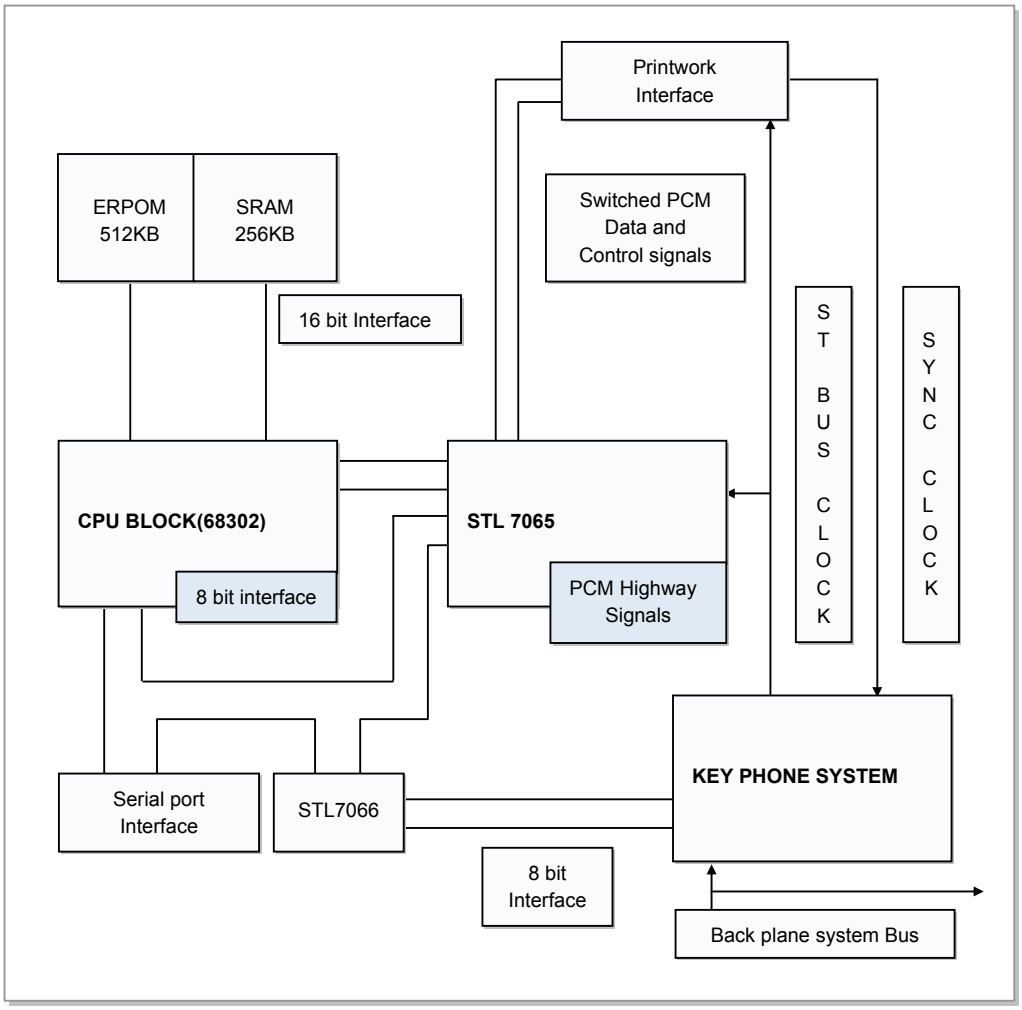


Figure 3.13 PRI Card Block Diagram

3.11.2 Circuit Description

CPU AND MEMORY

CPU(Motorola 68302,16 bit): Motorola 68302 has 68000 capacity and Communication between Processor capacity.

Reset Logic

DS1232s(the power monitor and the reset circuit) is used as reset logic. DS1232s indicates input voltage level and 1 kHz clock input, and offers Reset Pulse to the CPU and I/O.
If 1 kHz clock input is not inserted during 600 msec, DS1232s resets system automatically.
The other source of reset is /CDRST and SRST generated from keyphone system.

Control ASIC(STL7066) Interface

Refer to STL7066 manual(this manual is data sheet that describes ASIC chip) for detailed explanation. In this manual, Needing usage will be described.

STL7066 has capacity as followings:

- Chip select generation for serial port and LED access
- Interrupt control and priority encoding
- 1024 byte dual port memory resource for the CPU and the signal processor in K/P system
- CPU cycle termination

DPRAM(dual port memory)

The DPRAM is very sensitive memory, it is used to communicate between processors.
DPRAM is divided by 2, one is used as received buffer, the other is used to transmitted buffer.

Address decoding

CPU needs interface with SRAM, EPROM, STL7066, STL7065 and serial port. Selection signal between SRAM and EPROM chip is generated from 68302. Decoding of STL7066, 7065 is achieved at the internal ASIC, and serial port chip selection signal is generated at the STL7066.

Interrupt

4 kinds of interrupt are available. 3 kinds of interrupt is coded in the STL7066 ASIC chip, and decided priority. The other one is generated by the internal factor of 68302.

Interrupt source priority is as follows:

- Level 7: NMI, used in VME debugger
- Level 4: Internal HDLC controller
- Level 3: 1 msec Interval timer interrupt for Periodic Operation.
- Level 1: SIO interrupt

PCM Data highway interface

PCM Highway is composed of PCM transmit data(DSI), PCM receive data (DSO), SC2B, SC4B, SFOB. STL7065 is used as time switch.

PRI Network Interface

PRI network interface is composed of MT89790B, Tx/Rx Converter and MH89791(CEPT PCM 30 transmitter equalizer). MH89790B supports interface between 4,048 Kbps digital trunk and MITEL'S serial telecom bus(ST-BUS). ST-BUS is composed of three control line, two transmit, and receive data line, frame sync, 2 MHz and 8 MHz clock.
CSTI0, CSTI1, CST0 is control line. CSTI0, CSTI1 is input of chip that received from time switch Rx/Tx PCM data that is composed of 30 B-Channel, 1 D-Channel and control channel. Each channel is 8 bit and 64 Kbps. Time slot 0 is control channel and time slot 16 is D-Channel. PCM transmission line from keyphone system is connected to the time switch. D-Channel is inserted to the time slot 0 by 68302. Impedance of receive line is made to 75 Ω or 120 Ω by using jumper JP14.

3.12 TEPRI Card

The TEPRI simultaneously supports T1/PRI and E1/PRI and can be installed into the dedicated slot.
supporting 24/32 channels. The T1/E1 card includes one T1/E1 port.
The TEPRI card is same PBA using in the iDCS 500 TEPRI(unused DCS card pack).

3.12.1 Block Diagram

The block diagram of TEPRI Card is shown below:

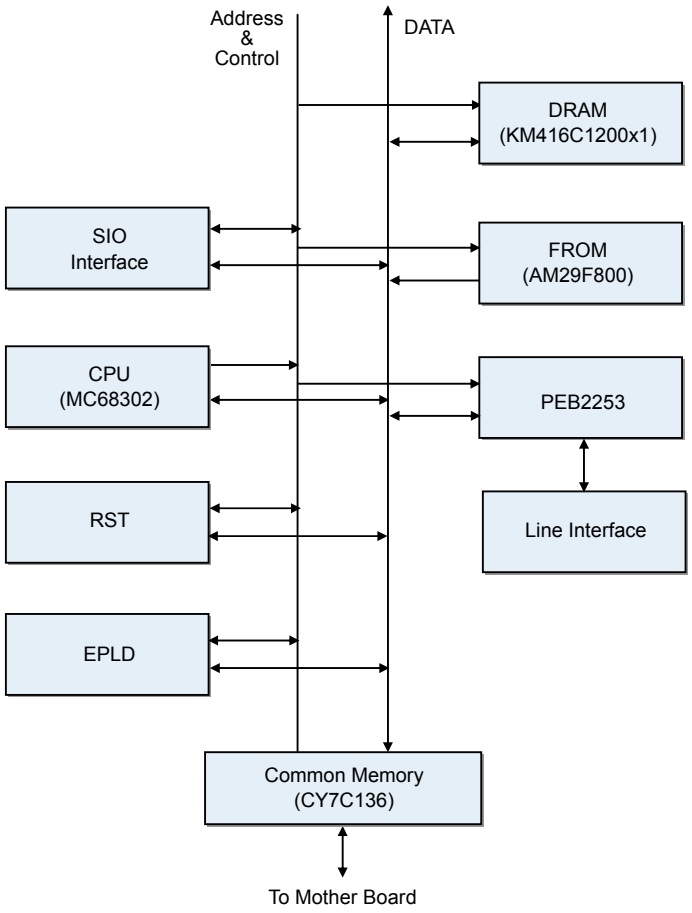


Figure 3.14 TEPRI Card Block Diagram

3.12.2 Circuit Description

Line Interface

- Selective use of T1/E1 signaling through programming
- Use of impedance circuit simultaneously satisfying T1(100 Ω) and E1(120 Ω)
- Provision of surge protection of a level recommended by the ITU
- Provision of jitter characteristic satisfying the ITU-T I.431 and G703
- Provision of selectable line codes(HDB3, AMI)
- Programmable Threshold of loss of signal indication
- Accomplishment of HDLC or Common Associated Signal(CAS) through CCS

CPU (MC68302)

- A 68302FN16 is used. And a CPU clock of 16.384 MHz is provided.(16 bit data bus).
- A ROM of 1 Mbytes(AM29F800B, 512K × 16 bits FLASH ROM) is used.
- A 2 Mbytes DRAM(KM416C1200, 1M × 16 bits) is used as a RAM.
- Two general purpose timers within the CPU is used for interrupt for timing reference.
- A DS-1232 is used for reset. a reset button for a test is provided and mixes a reset signal with a reset signal from the Main board.
- A CPLD M4A5-64/32 is used for receiving peripheral circuits.
- A DPRAM(71C132Y) is used for IPC with Main CPU.Level6 interrupt is connected to the card slot.

Clock

- A DPLL exists in a PEB2254.
- A PLL circuit of the PLL board performs synchronization of a system clock.
- 4.096 MHz, CLKX, and FSX are provided from the 008 Base Board.
- A SCLKX/SLCKR of the PRB2254 converts 4.096 MHz into 8.192 MHz using delay line before distribution.
- An active signal indicating valid reference clock is provided through the CPU port.

SIO

- A serial port for a test is provided through a serial communication controller 3 of the CPU. and a DB-9 connector can be connected on the front.
- A baud rate source clock, as a CPU master clock, can be increased up to 38,400bps, and its speed is determined by software.

3.13 ITM 3 Card (Only use in the iDCS 100 system)

The number of the installed ITM 3 card is limited to one in the iDCS 100 system(MEM 3 or MEM 4).
The ITM 3 card can be installed in the universal slots on the Basic KSU.
The ITM 3 card is connected to an IP network through an Ethernet. Voice Data is compressed according to ITU-T G.723.1 or G.729 and transmitted and received between network.
The ITM 3 card compresses voice data, restores voice data, embodies an H.323 protocol for linkage with an IP network, and links the Ethernet to an existing G.711 A/u law 64 Kbps Time Switch.

3.13.1 Block Diagram

The block diagram of ITM 3 Card is shown below:

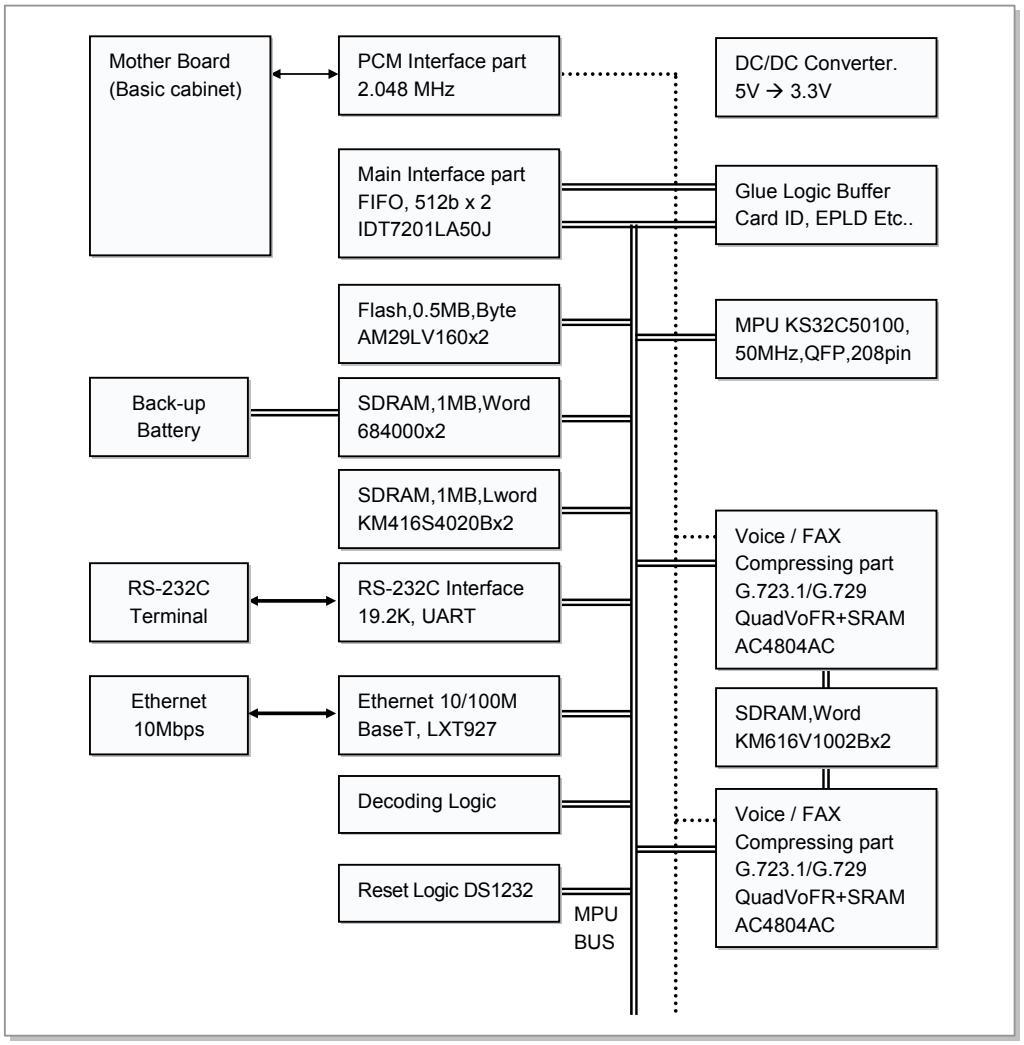


Figure 3.15 ITM 3 Card Block Diagram

3.13.2 Circuit Description

G.723 CODEC

- Available channel: 4 channels ÷ Chip × 2EA = 8 channels
- Interface between Quad VoFR and HOST is embodied by EPLD.
- A product of the company Audio Codes is used for Quad VoFR.
- Four independent voice and FAX channels are supported in each chip.
- User configuration H.323 voice coders:
  - G.723.1 MP-MLQ @6.3 Kbps and 5.3 Kbps
  - G.729A CS-ACELP @8 Kbps
- Non-standard lower bit rate MP-MLQ derivatives
- 'Soft', field-upgradeable functionality.
- Robust Bad Frame Interpolation(BFI).
- G.165 adaptive echo canceller.
- TIA 464A DTMF detection and generation.
- MF detection and generation.
- Parallel host processor interface.
- Host programmable tone signaling.
- Configurable PCM I/F: PCM highway or parallel I/F.
- Gain control.

RS-232C Interface

- Use of UART0 in KS32C50100
- Maximum of 38.5 Kbps UART
- Used for Debugger, Flash memory update, DSP program update, and test.

Main CPU Interface

- FIFO IDT7201LA50J × 2
- Tx and Rx of 512 bytes

Ethernet Interface

- Use of LXT972: Ethernet Interface PHY Transceiver
- Use of RJ-45 connector

3.14 MGI 3 Card

The MGI 3 card supports the VoIP Gateway, which enables telephone calls through the Internet. Since the MGI 3 card can not support the H.323 protocol by itself, the MGI 3 card shall always be used together with the MCP 1 card. When mounted with the 500 MGI 3 D-board, the MGI 3 card can support up to 16 internet telephone(VoIP) ports by adding 8 channels of internet telephone ports. Up to 3 cards MGI 3 shall be installed in the basic cabinet 3 universal slot. The features of the MGI 3 card(such as LAN port connection, RS232C connection, reset button, and jumper setting) are identical to that of the ITM 3 card, except for the front panel LED feature.

Table 3.7 MGI 3 Card LED feature

LED	Color	Description
PWR	Light Green	Displays the power supply status of the MGI 3 board. - On: Power is supplied normally. - Off: No power supply.
SRV	Light Green	Displays if the voice service is available. - Blink: Service is available. - Off: Service is unavailable.
Tx	Light Green	Displays the status of data transmission through Ethernet. - Blink: Data is being transmitted. - Off: No data transmission.
Rx	Light Green	Displays the status of data reception through Ethernet. - Blink: Data is being received. - Off: No data is received.
RUN	Light Green	Displays the operation status of the MGI 3 card. - On: MGI 3 card is operating normally. - Off: MGI 3 card is not operating normally.
IPC	Light Green	Displays if messages are transferred between MGI 3 card and the main control part. - Blink: Messages are transferred normally. - Off: No message transfer.
DSP	Light Green	Displays the usage rate of the DSP channel. - Blink: DSP channel is being used. Blinks every 1 second for 1 to 4 channels, 0.5 second for 5 to 8 channels, 0.25 second for 9 to 12 channels, and 0.125 second for 13 to 15 channels. - On: All 16 channels are being used. - Off: No DSP channel in use.

3.14.1 Block Diagram

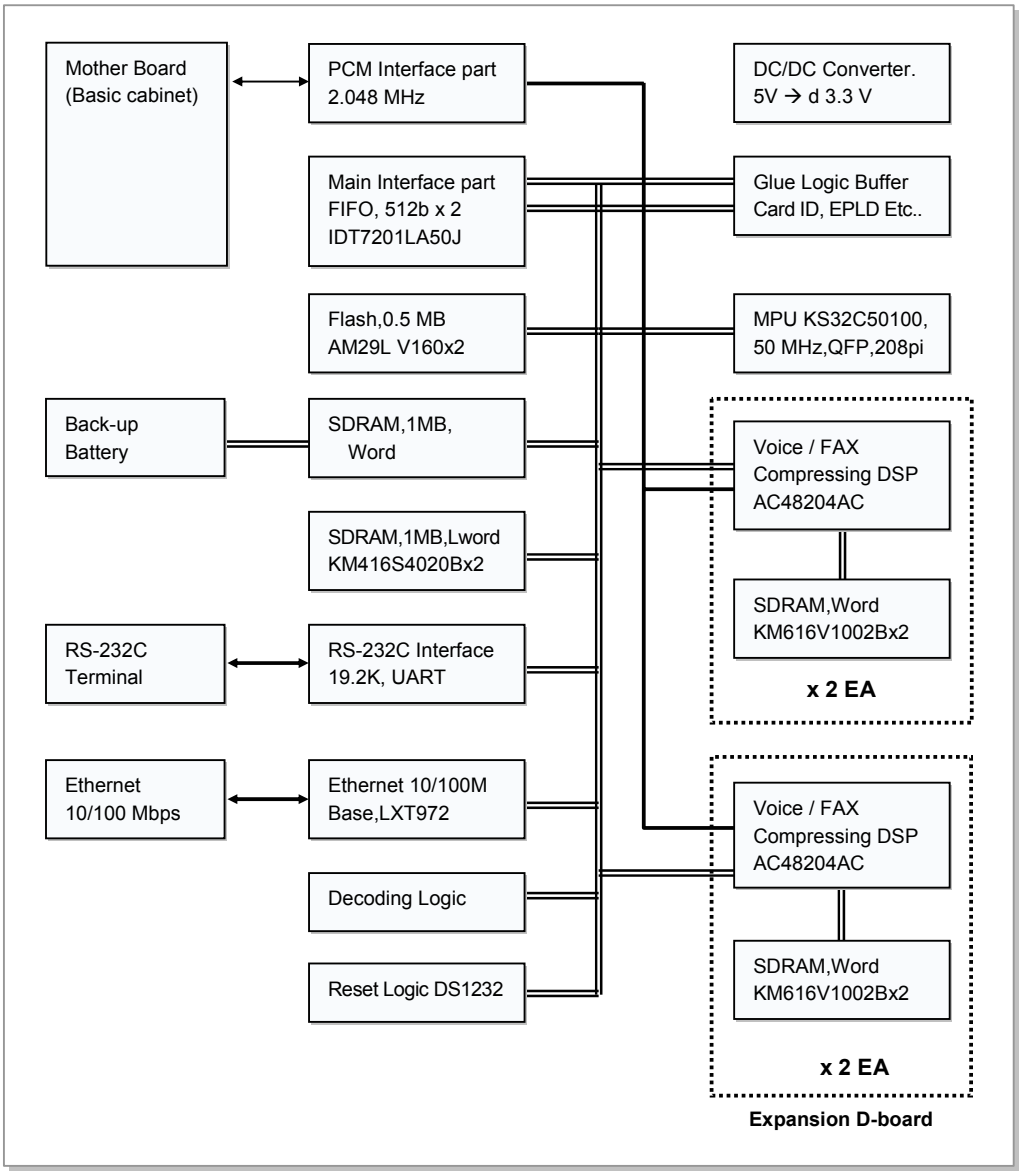


Figure 3.16 MGI 3 Card Block Diagram

3.14.2 Circuit Description

AC48204 Voice over Packet Processor (DSP) Features

- 4 channels of two LBR vocoders(G.723.1 and G.729)
- Up to 64 msec G.168-2002 compliant echo canceller
- T.38 compliant fax relay
- Complete voice band signaling support.

RS-232C Interface

- Use of UART0 in KS32C50100
- A maximum of 38.5 Kbps UART
- Used for Debugger, Flash memory update, DSP program update, and test.

Main CPU Interface

- FIFO IDT7201LA50J × 2
- Tx and Rx of 512 bytes

Ethernet Interface

- Use of LXT972: Ethernet Interface PHY Transceiver
- Use of RJ-45 connector

3.15 4 WLI Card

The 4 WLI card is a system card that is connected to the WBS 24 DBS in order to provide a wireless LAN function. For the DBS, the WBS 24 DBS will be used. A maximum of 4 base stations will be served from one 4 WLI, and the maximum number of simultaneous calls are 16 channels

3.15.1 Block Diagram

The block diagram of 4 WLI Card is shown below:

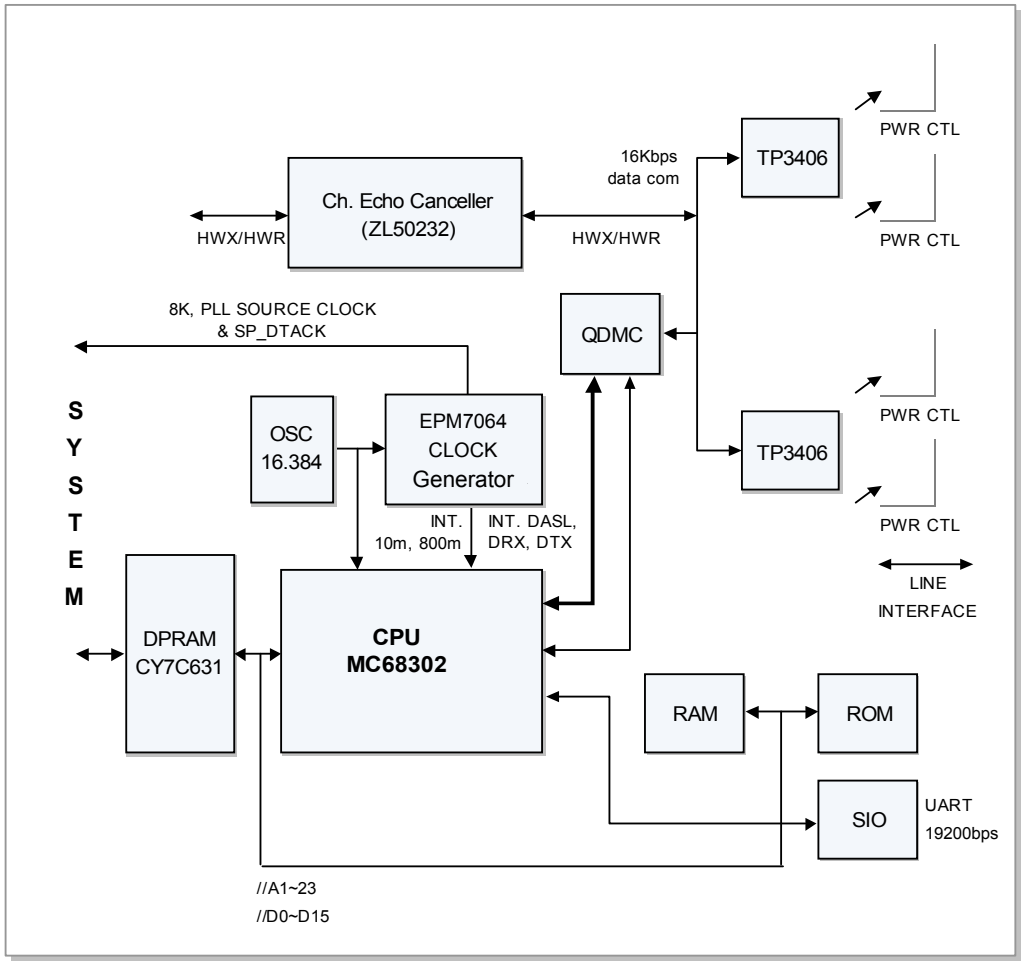


Figure 3.17 4 WLI Card Block Diagram

3.15.2 Circuit Description

CPU

The MC68302 of Motorola is used, and the operation speed is increased using 16 bit word Operation.

The dedicate-Interrupt mode is selected to used the followings:

- Level 7 is abort.
- Level 6 is QDASL(TP3406) INT.
- Level 4 is QDASL UART Rx, Tx, 10ms INT.
- Level 1 is 800ms INT.

Using the I/O port, the time for DASL synch data transmission is adjusted.
The I/O user interface uses SCC3 inside the processor, and the speed is 9600 bps.
The modified program can be directly upgraded through a PC by using Flash memory of 8 Mbits(1 Mbytes) as the program memory. For the Word Operation, two of 4 Mbits RAM(Total: 1 Mbytes) are used.

DBS Interface Unit

One QDMC ASIC chips perform the assignment of time slots for 16 QDASL transport chips, UART data communications, and micro control.

Through MBS mode, the QDASL transport chip receives the frame signals of identical timing from DBS terminals connected to each port. Also, two DASL chips are connected to each DBS. To obtain a space on the PCB, the EPLD board is used. At the output terminal of TTL Level, pull up of 1.2 KΩ is added to implement connection with the CMOS device. Using the MOSFET, the power feeding control by S/W is available for each port.

Reset Unit

The reset unit uses the watch dog chip to prevent abnormal system operation due to voltage changes and obtain the power on reset timing margin. The manual reset switch and the NMI switch should be applied to this reset unit. Thus, the monitoring function for system operation can be enhanced.

3.16 SVMi-4 Card

SVMi-4 card is a module that provided voice mail function in OfficeServ 100 system, up to on one SVMi-4 is available per cabinet.

3.16.1 Block Diagram

The block diagram of SVMi-4 Card is shown below:

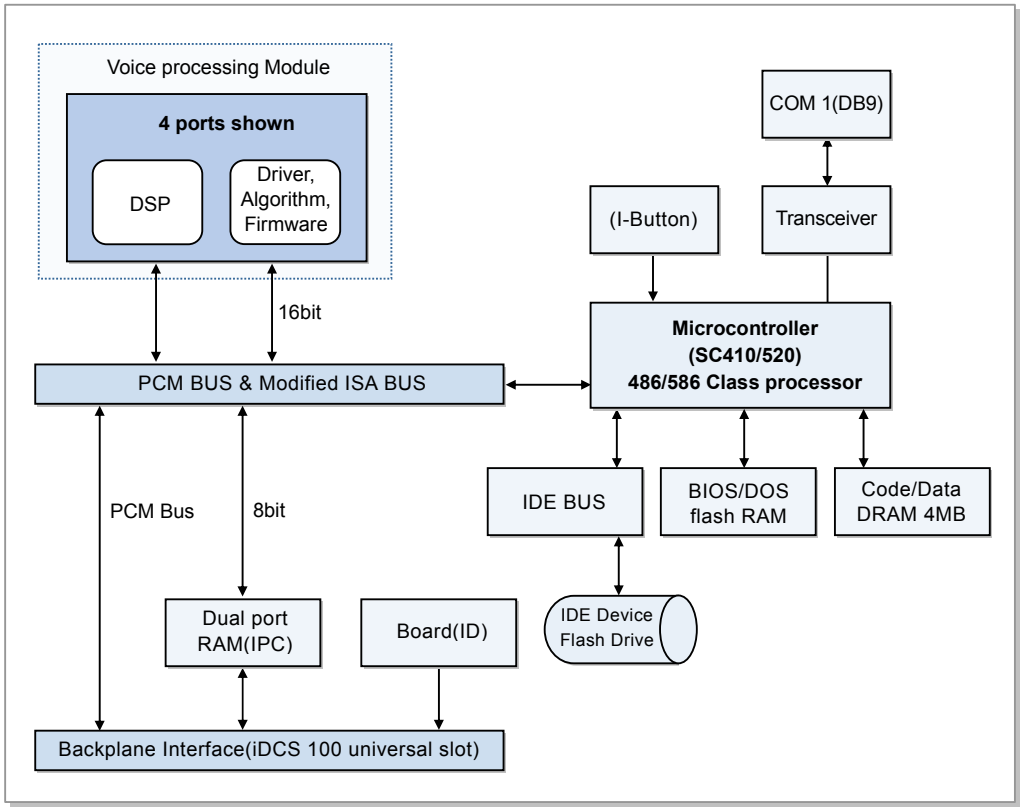


Figure 3.18 SVMi 4 Card Block Diagram

3.16.2 Circuit Description

CPU

Uses AMD Elan SC410 Embedded PC with 486 CPU @33 MHz

DRAM

Uses 4 Mbytes DRAM, No SIMM or DIMM module
Uses Samsung K4E160812D-FC50 3.3 V

Auxiliary Memory Units

Used Compact Flash Memory Card.

Peripherals and Connectors

COM1: DB9 Connector, Serial port
Usage: Terminal Emulation or External Modem Connection

LED

D1(Green) : Represents the status of Compact Flash Memory card. When reading or writing on the Compact Flash Memory, LED turns green.
D2(Red/Green) : LED turns red in case of abnormal operation or failure to initialize BIOS, while LED turns green in case of normal operation.

Button

S1 button is SVMi-4 boards own reset button. When the button is pressed, the PC part and the BICOM DSP part are reset.

Real Time Clock

There is no built-in real time clock. The system receives time and information.

BIOS

Phoenix PICO BIOS
Embedded in Flash 128 Kbytes E-PROM

Operating System (OS)

Uses datalight DOS version 6.2

BICOM DSP

Accommodates 4 channels per DSP
Interface: BICOM DOS API version 3.06

System Interface

Uses universal slot at DCS Compact-II and OfficeServ 100
IPC for data transmission and reception uses CY7C131

BICOM DSP Function

- BICOM compression rate
- DTMF sensing
- Audio Signal
  - AGC Specification: Configurable
  - Silence Threshold: Default –40 dBm(Changeable)
  - Average Transmit Level: AGC controlled playback level is kept at –12 dBm
  - Frequency Response: 300 ~ 2600 Hz, ±3 dB at 24 Kbps rate, 300~3400 Hz at 32 Kbps rate.
- Volume control and all the related message movement controls are supported via the API.

3.17 PLL D-Board

PLL Board is composed of circuit that is for locking 8 kHz sync signal that is generated at the BRI or PRI or TEPRI Board, and generates 4 M clock and FOI for being used as reference clock to realize Multi-slot ISDN Board of OfficeServ 100 System.

3.17.1 Block Diagram

The block diagram of PLL D-Board is shown below:

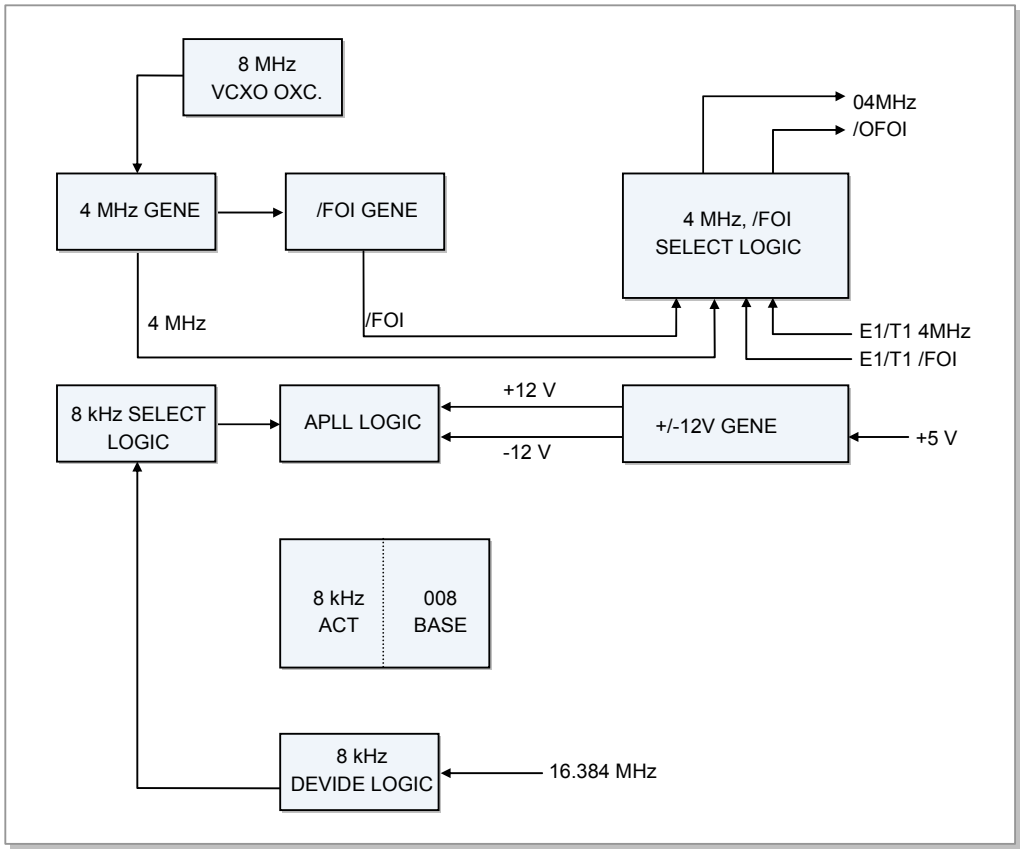


Figure 3.19 PLL D-Board Block Diagram

3.17.2 Circuit Description

Analog phase locking logic(APLL)

APLL part receives divided 2 kHz from 8 kHz select logic Part, 8 kHz comes from ISDN(BRI, PRI) card equipped in each slot of 008 Base Board and divided 2 kHz from 8.192 MHz VCXO Oscillator. It is used to supply to the CA3410 and the output of CA3410 is inserted to the 8.91 MHz VCXO Oscillator as reference value to oscillate. It is possible to supply 4 MHz to the whole system by dividing oscillation frequency with 2, and used as sync clock of whole system.

8 kHz Select Logic Part

In the OfficeServ 100 system, BRI board at the universal slot, TEPRI and PRI at the 4th expansion rack can be installed. The highest priority Board clock is used to sync. 74HC148 is used to priority encoder. priority is that PRI or E1/T1 in the 4th expansion slot is the highest and from left side in the universal slot is high.

4 MHz, /FOI Select Logic Part

When digital trunk card(TEPRI/PRI) is installed in expansion rack 4th slot, 4 MHz and /FOI which are supplied from digital trunk card(E1) that is used as sync clock through whole system by setting T1DET as high to the 74HC4053. When ISDN card is installed, T1 DET is changed to low, and 4 MHz and /FOI is supplied to the engine.

4 MHz, /FOI Generation

Generates 4 MHz by dividing(by 2) output 8.192 MHz VCXO oscillator synchronized at the reference ISDN card, and /FOI by dividing output of 8.192 MHz VCXO oscillator synchronized at the reference ISDN card and then supplied to 4 MHz/FOI select logic.

+/-12 V Generation

+12 V is made by +12 exclusive DC/DC converter(LT1108) with supplied +5 V and –12 V is made by common DC/DC converter(MC34063), and then supply it to the CA3410.

3.18 Ringer Board

Ringer Board generates sine wave ring signal and provides it to single line telephone.
It is composed of WEIN bridge oscillation part, and amplification. Ringer-1 module has 3 Wattage and Ringer-2 module 10 Wattage.

3.19 DPIM Module

Digital Door Phone Interface Module(DPIM) converts the digital signal from digital keyphone to analog signal to communicate with the analog door phone. The allowable distance between DPIM and main system is of 400 m. It is a maximum of 200 m between DPIM and the door phone, and a maximum of 600 m between the main system and door phone.

3.19.1 Block Diagram

The block diagram of DPIM Module is shown below:

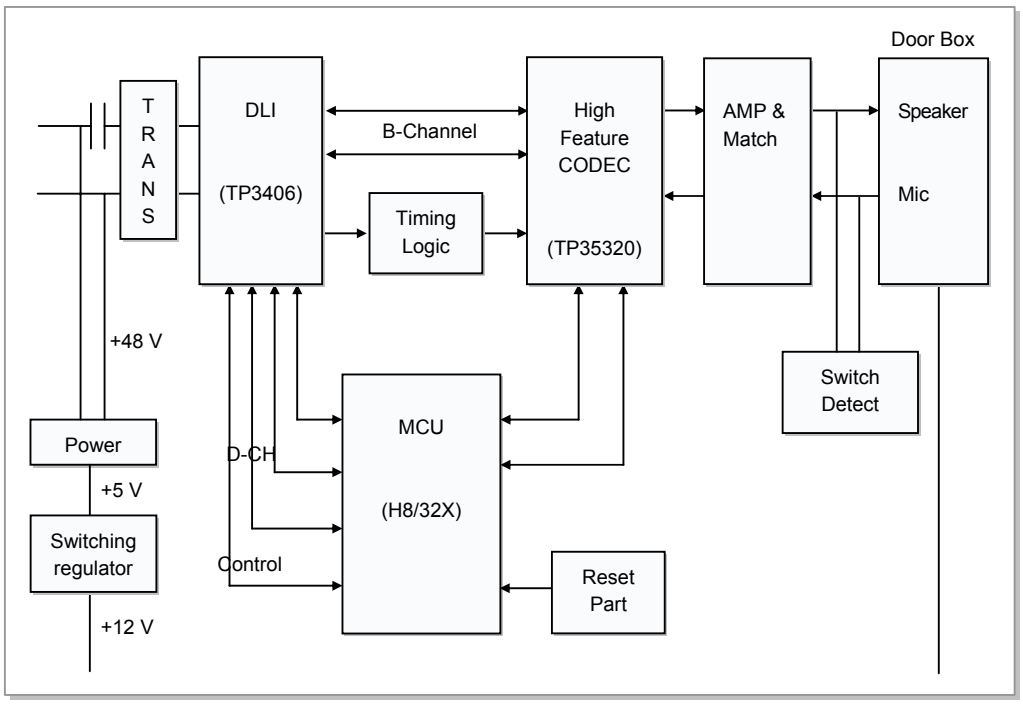


Figure 3.20 DPIM Module Block Diagram

3.19.2 Circuit Description

The DPIM uses the door box(which has been used for the analog keyphone and speaker). DPIM converts the digital signal form digital keyphone system into the analog signal to send to the door box, and sends the analog signal from the door to the digital keyphone system after converting to digital signal.

Amplifier and Matching

The analog signal out from HFC and door box is amplified at TL084. TL084 is equipped with 100 kohm for input resistance.

Door Locker Control

Door locker can be installed in DPIM. Relay switch is used to open the door, P10(pin48) in MCU us the relay control port, Which is the key scan port in the digital phone. D6(IN4148) is to get rid of the opposite electric power generated at the relay, and capacitor and resistor is used to bypass the spark generated at relay contact.

Switch Detect

A push switch in the door is used by a visitor to call the one inside. DPIM detects whether the switch is pushed or not with photo coupler, and supply the signal into the MCU port 46(pin 15)/the MCU sends the data in a format of serial data to TP3406 U5 through D channel. The main system transmits the signal to the pre-assigned port to connect the visitor the user inside.

The switch detect signal consists of two lines because it is transmitted through the center tap of matching transformer. Even though +5V is fed to the transformer, it does not damage the transformer.

+12 V Generator

+12V power with 5Vp.p(+5 V reference) should be supplied to the OP amp(TL084).
The step up DC to DC converter(LT1109,U11) is used to generate +12V output from +5V input with simple peripheral circuit.

3.20 Power Supply

3.20.1 Block Diagram

The block diagram of Power Supply is shown below:

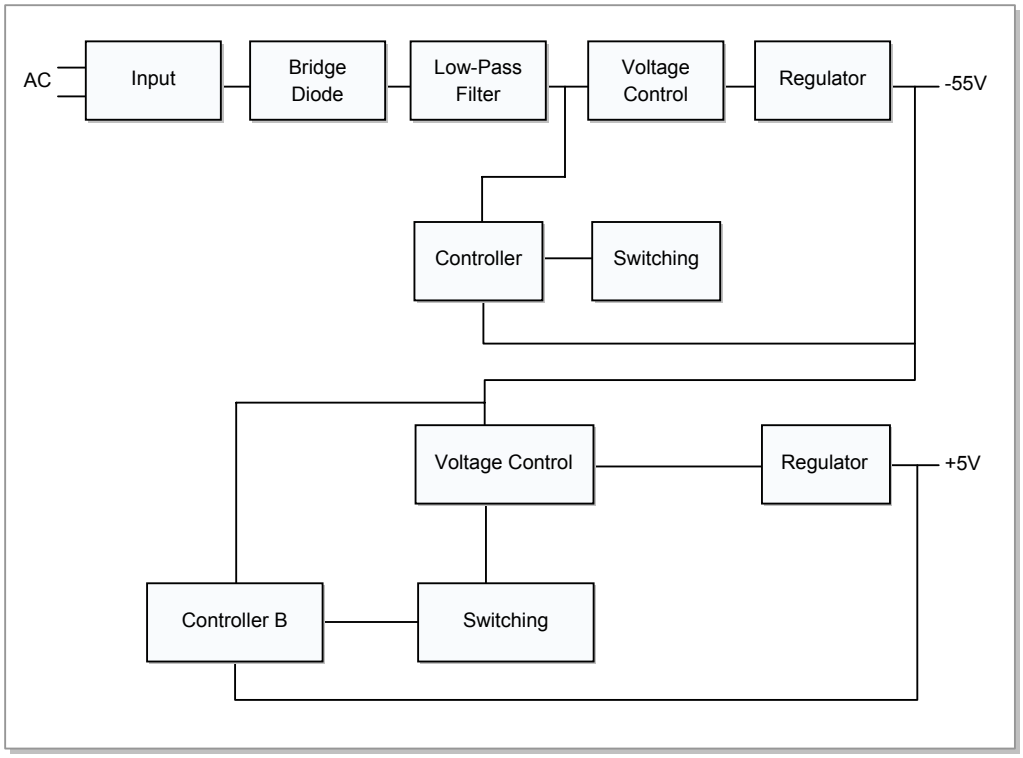


Figure 3.21 Power Supply Block Diagram

3.20.2 Circuit Description

The Power Supply unit supplies power to the cabinet of the OfficeServ 100 system. Example of the unit includes the CKPS-V3C series. This Power Supply unit is mounted to the basic cabinet.

The Power Supply unit operates with AC input power or battery power and supplies –55 V, -54 V, +5 V of power to the cabinet.
Let's assume that the system operates with AC power. If the battery is discharged and there is no remaining power, the Power Supply unit will supply 0.4 A of power for battery charge.

Electrical Specification

- AC Input:10 V or 220 V Selectable
- Power Consumption(Max): 140 W

Sorts	Max. DC Voltage	Rating Current	Max. Current
CH1	-55.0 V(±4 %)	0.6 A	1.7 A
CH2	+5.0 V(±2 %)	0.8 A	4.0 A
CH3(BATT)	-54.0 V(±4 %)	0.1 A	0.4 A

CHAPTER 4. Parts List

This chapter provides a list of OfficeServ 100 parts.

4.1 TEPRI Card

(Q'tt : Quantity)

Part No	Reference	Q'tt	Part Name	Specification
0402-001081	D1-D8	8	DIODE-RECTIFIER	RGF1D, 200 V, 1 A, DO-214BA, TP
0403-000141	D9, D10	2	DIODE-ZENER	1N4735A, 5 %, 1000 MW, DO-41, TP
0406-000127	TVS1-TVS3	3	DIODE-TVS	P6KE18CA, 17.1/18/18.9 V, 600 W, D O
0601-001391	LED1, LED2	2	LED	CBI-ANGLE, GRN, 2.9mm, 565nM, 8.6X10X10 mm
0801-000393	U11	1	IC-CMOS LOGIC	74HC86, OR GATE, SOP, 14, 150 mil, QUAD, ST, 2.0/6.0 V
0801-000547	U33	1	IC-CMOS LOGIC	74ACT273, D FLIP-FLOP, SOP, 20, 300 mil, OCTAL, ST, 4.5/5.5 V
0801-000841	U19, U20	2	IC-CMOS LOGIC	74ACT14, INVERTER, SOP, 14, 150 m il, HEX, ST, 4.5/5.5 V
0801-001070	U6	1	IC-CMOS LOGIC	74ACT04, INVERTER, SOP, 14, 150 m il, HEX, TP, 4.5/5.5 V
0801-001072	U4, U25	2	IC-CMOS LOGIC	74ACT32, OR GATE, SOP, 14, 150 mil, QUAD, TP, 4.5/5.5 V
0801-001075	U34	1	IC-CMOS LOGIC	74ACT138, 1-8 DECORDER/DEMUX, SOP, 16, 150 mil, SINGLE, TP, 4.5/5.5 V
0801-001079	U21-U23, U26-U32	10	IC-CMOS LOGIC	74ACT245, BUS TRANSCEIVER, SOP, 20, 300 mil, OCTAL, TP, 4.5/5.5 V
0802-001076	U38	1	IC-BICMOS LOGIC	74LVTH541, BUFFER, TSSOP, 20, 17 3 mil, OCTAL, TP, 2.7/3.6 V
0803-000842	U3	1	IC-TTL	74LS09, AND GATE, SOP, 14, 150 mil, QUAD, TP, 4.75/5.25 V
0902-000231	U2	1	IC-MICROPROCESSOR	MC68302, 16.67 MHz, 16 bit, QFP, 132P, TR, PLASTIC, 5 V, 525 MW, 0TO+70C, 1.152KB, 24 bit

Part No	Reference	Q'tt	Part Name	Specification
1006-000133	U1	1	IC-DRIVER/ RECEIVER	232, SOP, 16P, 150 mil, DUAL, TP, PLASTIC, 5.5 V, 10 MA, 0TO+70C, 696 MW, 2, EIA RS232/CCITT V.2
1105-001390	U37	1	IC-DRAM	K4S641632, 1MX16X4 bit, TSOP(II), 54P, 400 mil, 7.5 nS, 3.3 V, 10 %, 0TO+70C, 30 MA, CMOS, TR
1106-001136	U24	1	IC-SRAM	7C136, 2KX8 bit, QFP, 52P, 10X10 mm,5 5 nS, 5 V, 10 %, PLASTIC, 0TO+70C, 1 5 MA, CMOS, TR
1107-001079	U17	1	IC-FLASH MEMORY	29F800, 1Mx8/512Kx16, TSOP, 48P, 18.4x12mm, 4.5/5.5 V, 0to+70C
1202-000137	U5	1	IC-MONITOR	DS1232, SOIC, 16P, 300 mil, PLASTIC, 0TO+70C, 10 MA, TP
1203-001631	U36	1	IC-POSI.FIXED REG.	2940, TO-263, 3P, PLASTIC, 3.3 V
1205-001191	U18	1	IC-FRAMER	PEB2254H,QFP,80P, 300 mil, PLASTIC
1301-001663	U35	1	IC-CPLD	LC4128 V-75T128C, TQFP, 128P, 14X14 mm, 7.5 nS, 3.3 V, 10 %, 0TO+90C, 92, 92, 4, 333 MHz, 3.47
2005-000239	R121, R122, R130, R131	4	R-WIRE WOUND	5.6 ohm, 2 %, 1 W, AA, TP, 4.5x11 mm
2007-000011	R123	1	R-CHIP	200 ohm, 1 %, 1/8 W, TP, 2012
2007-000029	R76, R176, R901	3	R-CHIP	0 ohm, 5 %, 1/8 W, TP, 2012
2007-000286	R1, R2, R5, R78	4	R-CHIP	100 ohm, 1 %, 1/8 W, TP, 2012
2007-000286	R850	1	R-CHIP	100 ohm, 1 %, 1/8 W, TP, 2012
2007-000297	R114, R115, R139, R143-R150 R186, R187, R189, R200, R201 R192, R900, R902, R924, R925	21	R-CHIP	10 kohm, 1 %, 1/8 W, TP, 2012

Part No	Reference	Q'tt	Part Name	Specification
2007-000297	R301-R308, R942, R943 R6, R10-R32, R75, R79, R84 R926	38	R-CHIP	10 kohm, 1 %, 1/8 W, TP, 2012
2007-000307	R125, R126	2	R-CHIP	10 ohm, 1 %, 1/8 W, TP, 2012
2007-000352	R127	1	R-CHIP	12 kohm, 1 %, 1/8 W, TP, 2012
2007-000502	R132-R135	4	R-CHIP	2.2 ohm, 5 %, 1/8 W, TP, 2012
2007-000590	R85	1	R-CHIP	22 ohm, 1 %, 1/8 W, TP, 2012
2007-000668	R196-R199, R251-R258, R903-R920 R3, R4, R73, R74, R77	35	R-CHIP	2 kohm, 1 %, 1/8 W, TP, 2012
2007-000669	R928	1	R-CHIP	2 kohm, 1 %, 1/10 W, TP, 1608
2007-000856	R81-R83	3	R-CHIP	4.3 kohm, 1 %, 1/8 W, TP, 2012
2007-001080	R124	1	R-CHIP	604 ohm, 1 %, 1/8 W, TP, 2012
2007-007154	R128, R129, R1 36, R137, R138, R140 R141, R142, R1 51-R156 R158-R175, R177-R185, R193-R195 R202-R248, R922, R923 R33-R71, R93, R94 R927,R929- R941,R944- R980	185	R-CHIP	51 ohm, 1 %, 1/8 W, TP, 2012
2203-000206	C1-C5,C13- C16, C28 C29, C33, C34, C42, C43, C48, C50 C51, C61-C86	44	C-CER, CHIP	100nF, 10 %, 50 V, X7R, 2012

Part No	Reference	Q'tt	Part Name	Specification
2203-000206	C99-C113	15	C-CER, CHIP	100nF, 10 %, 50 V, X7R, 2012
2203-000236	C97	1	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 1608
2203-000239	C6-C12, C17-C22, C49, C52	15	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 2012
2203-000239	C87-C96	10	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 2012
2203-000274	C44-C47	4	C-CER, CHIP	0.01 nF, 0.25PF, 50 V, C0G, TP, 2012
2203-000455	C41	1	C-CER, CHIP	1 nF, 5 %, 50 V, C0G, TP, 2012
2404-001037	C56, C57, C98	3	C-TA, CHIP	10uF, 10 %, 16 V, TP, 3528
2602-000054	T100, T101	2	TRANS-PULSE	4 MH, 1:1.41, 14X12.5X13 mm, TR
2801-003575	Y3	1	CRYSTAL-UNIT	12.352 MHz, 20ppm, 28-AAM, 15pF, 50
2801-003584	Y2	1	CRYSTAL-UNIT	16.384 MHz, 20ppm, 28-AAM, 15pF, 30
2804-001453	Y4	1	OSCILLATOR-CLOCK	32.768 MHz, 50PPM, TTL, TP, 3.3 V, 40 MA
2901-000188	B14, B16, B17, B18	4	FILTER-EMI ON BOARD	50 V, 1A, 47pF, 7.5x2.5x6.2mm, TP
3301-001308	B19, B20, B21	3	BEAD-SMD	10 ohm, 1608, 500mA, TP, 0.15 ohm
3301-001308	B3-B6, B8, B9, B13	7	BEAD-SMD	10 ohm, 1608, 500mA, TP, 0.15 ohm
3403-000202	SW1	1	SWITCH-PUSH	28 V, 100mA, SPDT, ON-OFF
3407-000131	S1	1	SWITCH-DIP	24 V, 300mA, SLIDE, STANDARD
3701-000215	P11	1	CONNECTOR-DSUB	9P, 2R, FE MALE, ANGLE, AUF
3710-000001	P13, P22, P23, P26	4	CONNECTOR-SHUNT	2P, 1R, STRAIGHT, AUF
3710-000333	P1	1	CONNECTOR-SOCKET	60P, 2R, 2.54 mm, ANGLE, AU30U, NTR
3710-001659	P18, P19	2	CONNECTOR-SOCKET	40P, 2R, 0.8 mm, SMD-S, AUF, NTR
3711-001465	P13, P22, P23, P26	4	CONNECTOR-HEADER	NOWALL, 3P, 1R, 2.54mm, STRAIGHT, A
3711-003272	P12	1	CONNECTOR-HEADER	BOX, 10P, 2R, 2.54mm, STRAIGHT, AU
3722-001673	P14-P16	3	JACK-MODULAR	8P/8C, STANDARD, N, ANGLE, STANDARD, N, BLK, AU30U
4711-000162	U10	1	DELAY LINE	200 ns, 8.1x19.8x6.4mm, ST
4715-000127	AR1-AR6	6	SURGE ABSORBER	300 V, 15 %, 500A

4.2 SVMi-4 Card

Part No	Reference	Q'tt	Part Name	Specification
GA41-00111A	PCS.02	1	PCB-TEPRI	IDCS 500, FR-4, 4L, 1.6T, 285X132.5 mm
0401-001099	D9	1	DIODE-SWITCHING	1N4148WS, 75 V, 150 MA, SOD-323, TP
0402-001207	D11	1	DIODE-SCHOTTKY	UPS5819, 40 V, 1000 MA, DO-216AA, TP
0601-000005	D5, 7	2	LED	SMD, GRN, 3X2 mm, 570NM, 3X2 mm
0601-001024	D1-4, 12	5	LED	SMD, RED, 1.6X2.3 mm, 660NM
0601-001130	D8	1	LED	SMD, RED/GRN, 3.0X2.5 mm, 660/570NM, 3.0X2.5 mm
0801-002671	U14, 22	2	IC-CMOS LOGIC	7WZ14, INVERTER, SC70, 6P, 49 mil, DUAL, TP, PLASTIC, CMOS, 0 V, 40TO+85C, 180 MW, 0 V, 10UA
0801-002761	U13	1	IC-CMOS LOGIC	UHS INVERTER, SC70, 5P, 50 mil, SINGLE, TP, PLASTIC, OPEN DRAIN, 0.55 V, -40TO+85C, 150M
0802-001037	U4-6, 104	4	IC-BICMOS LOGIC	74LVT245, BUS TRANSCEIVER, TSSOP, 20, 173 mil, OCTAL, TP, 2.7/3.6 V
0802-001039	U7, 29	2	IC-BICMOS LOGIC	74LVT16244, BUFFER/DRIVER, TSSOP, 48, 240 mil, QUAD, TP, 1.65/3.6 V
0903-001292	U1	1	IC-MICROCONTROLLER	SC520, 32 bit, BGA, 388P, 35X35 mm, 133 MHz, TR, CMOS, PLASTIC, 2.5 V, 2 W, 0TO+85C, 32 bit
0904-001681	U16	1	IC-DSP	TMS320VC5410A, 16 bit, LQFP, 144P, 20X20 mm, 120 MHz, TR, CMOS, PLASTIC, 1.5 V, -40TO+100C, 6
1006-001140	U9	1	IC-LINE TRANSCEIVER	3232, SSOP, 16P, 212 mil, DUAL, TP, PLASTIC, 5.5 V, 0to+70C, 571 MW, 2, 2
1102-001147	U33	1	IC-EPROM	2502, 1KX1 bit, TSOC, 6P, 3.7X4.0 mm, 2.8 V, 2.8-6.0 V, -40TO+85C , ST
1103-001285	U15	1	IC-EEPROM	25LC320, 4Kx8, SOP, 8P, 5x4mm, 2.5/5.5 V, -40to+85C
1105-001354	U3	1	IC-DRAM	4S643232, 512KX32X4 bit, TSOP(II), 86P, 400 mil, 6 nS, 3.3 V, 10 %, PLASTIC, 0TO+70C, CMOS, ST
1106-001157	U18	1	IC-SRAM	7C131, 1KX8 bit, QFP, 52P, 10X10 mm, 55 nS, 5 V, 10 %, PLASTIC, 0TO+70C, 15 MA, CMOS, TR

Part No	Reference	Q'tt	Part Name	Specification
1106-001484	U17	1	IC-SRAM	70V05, 8KX8 bit, TQFP, 64P, 14X14 mm, 15 nS, 3.0/3.6 V, 0TO+70 C,5 MA, TP
1107-001118	U2	1	IC-FLASH MEMORY	29LV040, 512Kx8, PLCC, 32P, 11.4x13.9mm, 2.7/3.6 V, 0to+70C
1203-001631	U25	1	IC-POSI.FIXED REG.	2940, TO-263, 3P, PLASTIC, 3.3 V
1203-001643	U10	1	IC-RESET	DS1706, SOIC, 8P, 150 mil, PLASTIC, 40TO+85C, TP
1203-002621	U26	1	IC-POSI.FIXED REG.	77515, TSSOP, 20P, 6.5X4.4 mm, PLASTIC, 1.47/1.53 V, 3 W, -40TO+125C, 500 MA, TP
1203-002622	U31	1	IC-POSI.FIXED REG.	75225, TSSOP, 20P, 6.5X4.4 mm, PLASTIC, 2.45/2.55 V, 3 W, -40TO+125C, 2A, TP
1301-001663	U11, 28	2	IC-CPLD	LC4128V-75T128C, TQFP, 128P, 14X14 mm, 7.5 nS, 3.3 V, 10 %, 0TO+90C, 92, 92, 4, 333 MHz, 3.47
2007-000043	R1, 19, 79, 86R,183, 185-188 R199-202, 352-362	24	R-CHIP	1 kohm, 1 %, 1/10 W, TP, 1608
2007-000045	R294	1	R-CHIP	3.32 kohm, 1 %, 1/10 W, TP, 1608
2007-000052	R113, 116, 157-160 R190, 198, 237, 243 R270-277, 291, 338 R339, 346, 347R373-376,392-396 R399-414 R6, 36, 78, 100, 102	53	R-CHIP	10 kohm, 1 %, 1/10 W, TP, 1608
2007-000060	R117	1	R-CHIP	100 kohm, 1 %, 1/10 W, TP, 1608
2007-000070	R107, 108, 127, 129	4	R-CHIP	0 ohm, 5 %, 1/10 W, TP, 1608

Part No	Reference	Q'tt	Part Name	Specification
2007-000070	R130, 150, 151, 154 R177, 204, 390, 391 R3, 14, 21, 26, 88 R90-92, 126, 143	18	R-CHIP	0 ohm, 5 %, 1/10 W, TP, 1608
2007-000239	R27	1	R-CHIP	1.5 kohm, 1 %, 1/10 W, TP, 1608
2007-000287	R103, 105, 109, 110 R114, 310 R311, 317-319, 350R351, 397 , 398	14	R-CHIP	100 ohm, 1 %, 1/10 W, DA, TP, 1608
2007-000669	R115, 300, 305, 306	4	R-CHIP	2 kohm, 1 %, 1/10 W, TP, 1608
2007-002899	R25	1	R-CHIP	10 ohm, 1 %, 1/10 W, TP, 1608
2007-002913	R363, 364	2	R-CHIP	33.2 ohm, 1 %, 1/10 W, TP, 1608
2007-002987	R15-18, 20, 28, 76 R152, 269, 333	10	R-CHIP	4.75 kohm, 1 %, 1/10 W, TP, 1608
2007-002987	R77, 145-147	4	R-CHIP	4.75 kohm, 1 %, 1/10 W, TP, 1608
2007-007277	R118, 119	2	R-CHIP	392 ohm, 1 %, 1/10 W, TP, 1608
2007-007620	R2	1	R-CHIP	47.5 ohm, 1 %, 1/10 W, TP, 1608
2007-007650	R7, 89, 175	3	R-CHIP	274 ohm, 1 %, 1/10 W, TP, 1608
2007-007785	R176	1	R-CHIP	249 kohm, 1 %, 1/10 W, TP, 1608
2007-008122	R11-13, 85, 95, 96 R111, 136, 138, 139 R141, 142, 144, 189 R191, 381, 384-387 R194-197, 248-250	27	R-CHIP	22.1 ohm, 1 %, 1/10 W, DA, TP, 1608

Part No	Reference	Q'tt	Part Name	Specification
2007-008122	R252, 342, 343, 380R382, 383	6	R-CHIP	22.1 ohm, 1 %, 1/10 W, DA, TP, 1608
2011-000151	RA43-47	5	R-NET	100 ohm, 5 %, 1/16 W, L, CHIP, 8P, TP, 3216
2011-000515	RA1-16, 38	17	R-NET	4.7 kohm, 5 %, 1/16 W, L, CHIP, 8P, T P
2011-000660	RA17	1	R-NET	1 kohm, 5 %, 1/16 W, L, CHIP, 8P, TP, 3.2x1.6x0.5mm
2011-000881	RA39, 40	2	R-NET	33 ohm, 5 %, 1/16 W, L, CHIP, 8P, TP, 3.2x1.6x0.5mm
2011-001011	RA35-37, 41, 42	5	R-NET	10 kohm, 5 %, 1/16 W, L, CHIP, 8P, TP , 3.2x1.6x0.5mm
2011-001194	RA29, 30	2	R-NET	51 ohm, 5 %, 1/16 W, L, CHIP, 8P, TP
2203-000236	C116, 196, 223	3	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 1608
2203-000257	C101, 117, 193 C35-40, 45-48, 55-58	17	C-CER, CHIP	10nF, 10 %, 50 V, X7R, TP, 1608
2203-000384	C5	1	C-CER, CHIP	0.015 nF, 5 %, 50 V, C0G, TP, 1608
2203-000576	C153	1	C-CER, CHIP	220nF, 10 %, 50 V, X7R, TP, 3216
2203-000626	C132, 133 C226, 228, 233	5	C-CER, CHIP	0.022nF, 5 %, 50 V, C0G, TP, 1608
2203-000783	C1	1	C-CER, CHIP	0.33 nF, 5 %, 50 V, C0G, TP, 1608
2203-000903	C32	1	C-CER, CHIP	0.0047 nF, 0.25PF, 50 V, C0G, TP, 1608
2203-000998	C8-12	5	C-CER, CHIP	0.047 nF, 5 %, 50 V, C0G, TP, 1608
2203-001071	C199, 225	2	C-CER, CHIP	0.056 nF, 5 %, 50 V, C0G, TP, 1608
2203-005249	C118-131, 135-139 C151, 155, 157, 160, C165-188 C202, 217, 218, 231, C3, 4, 6, 7, 24-31 C41-44, 51-54, 68 C99, 100, 102, 105-115	86	C-CER, CHIP	100nF, 10 %, 50 V, X7R, TP, 1608
2203-005565	C34	1	C-CER, CHIP	1nF, 5 %, 50 V, NP0, TP, 1608
2404-000227	C2, 33	2	C-TA, CHIP	4.7uF, 10 %, 10 V, TP, 3216

Part No	Reference	Q'tt	Part Name	Specification
2404-001074	C103, 156, 232, C158, 189, 190	6	C-TA, CHIP	10uF, 10 %, 10 V, GP, TP, 3216
2404-001228	C159, 154 C49, 50, 59, 150	6	C-TA, CHIP	100uF, 10 %, 16 V, GP, TP, 7343
2404-001307	C191	1	C-TA, CHIP	47 uF, 10 %, 10 V, LR, TP, 3528
2801-003681	Y1	1	CRYSTAL-SMD	0.032768 MHz, 50PPM, 28-AAV, 16PF,50 ohm, TP
2801-004134	Y3	1	CRYSTAL-SMD	8.192 MHz, 20PPM, 28-AAN, 18PF, 70 ohm, TP
2804-001569	Y2	1	OSCILLATOR-CLOCK	33.333 MHz, 100PPM, CMOS, TP, 2 .5 V, 5 MA
2901-001155	M3, 5	2	FILTER-EMI SMD	25 V, 6A, 220pF, 3.2x1.6x1.6mm, TP
3301-001120	L1, 3, 4, 6	4	BEAD-SMD	30 ohm, 2x1.25x0.85mm, 3000mA, TP, 0.015 ohm
3404-001008	S1	1	SWITCH-TACT	15 V, 50 MA, 160GF, 6X6X5 mm, S PST
3701-000257	J1	1	CONNECTOR-DSUB	9P, 2R, MALE, ANGLE, AUF
3703-000124	J5	1	CONNECTOR-BACK PANEL	20P, 2R, MALE, ANGLE, AUF
3703-000179	J4	1	CONNECTOR-BACK PANEL	50P, 2R, MALE, ANGLE, AUF
3704-000249	U2	1	SOCKET-IC	32P, PLCC, SN, 1.27mm
3709-001164	J2	1	CONNECTOR-CARD EDGE	50P, 1.27 mm, SMD-A, AU30U
3710-001659	P11, 12	2	CONNECTOR-SOCKET	40P, 2R, 0.8 mm, SMD-S, AUF, NTR
3711-003272	P5	1	CONNECTOR-HEADER	BOX, 10P, 2R, 2.54mm, STRAIGHT, AU
4401-001232	U19	1	CONVERTER-DC/DC	5VDC,1 A, 5 W, 85 %, BK
6203-001062	U1	1	HEAT SINK	HS2727B, T2.6, W27, L27, H4.8, AN ODIZING, A6063S-T5
GA41-00157A	PCB	1	PCB MAIN	SVMI-4, FR-4, 6L, 02, 1.6T, 300X194 mm
GA61-10503A	-	2	EJECTOR-DCS	DCS, PAUL94-V0, NTR

4.3 PLL Board

Part No	Reference	Q'tt	Part Name	Specification
0402-000165	D2	1	DIODE-RECTIFIER	1N5819, 40 V, 1 A, DO-41, TP
2301-000128	C3	1	C-FILM, LEAD-PEF	100nF, 5 %, 50 V, TP, 10X9X4.3X5, 5mm
2806-000138	Y1	1	OSCILLATOR-VCXO	8.192 MHz, 20ppm, 2 TTL, 5 V, 20mA
3301-000344	B3, B5	2	BEAD-RADIAL	200 ohm, 3.5x0.6x6.5mm, 7000 mA, TP , 0.01 ohm
3710-001144	P1, P2	2	CONNECTOR-SOCKET	14P, 1R, 2.5 mm, STRAIGHT, NTR
EC27-30514A	L1-3	3	COIL RF	INFOREX, 35UH, 40T
0401-000133	D1	1	DIODE-SWITCHING	RLS4148, 75 V, 150 MA, LL-34, TP
0801-000379	U14	1	IC-CMOS LOGIC	74HC00, NAND GATE, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
0801-000393	U6	1	IC-CMOS LOGIC	74HC86, OR GATE, SOP, 14, 150 mil, QUAD, ST, 2.0/6.0 V
0801-000455	U5, U7	2	IC-CMOS LOGIC	74HC74, D FLIP-FLOP, SOP, 14P, 8.7X3.9 mm, DUAL, TP, 2.0/6.0 V, 0.26 V , -40TO+85C, 180 MW, 4.
0801-000630	U2, U3	2	IC-CMOS LOGIC	74HC393, BINARY COUNTER, SOP, 14, 150 mil, DUAL, TP, 2.0/6.0 V
0801-000646	U11, U12, U13	3	IC-CMOS LOGIC	74HC163, BINARY COUNTER, SOP, 16, 150 mil, SINGLE, ST, 2.0/6.0 V
0801-000671	U1	1	IC-CMOS LOGIC	74HC148, PRIORITY ENCODER, SOP, 16, 150 mil, SINGLE, TP, 2.0/6.0 V
0801-000823	U4	1	IC-CMOS LOGIC	74HC4051, MULTIPLEXER, SOP, 16, 150 mil, TP, 2.0/6.0 V
0801-000824	U16	1	IC-CMOS LOGIC	74HC4053, MULTIPLEXER, SOP, 16, 150 mil, TP, 2.0/6.0 V
1201-000309	U9, U10	2	IC-OP AMP	CA3140, SOP, ST, 8P, 150 mil, SINGLE , 100 V/MV, PLASTIC, 36 V,180 MW, -55TO+125C, 90DB, 9 V/US, 0
1203-000103	U8	1	IC-DC/DC CONVERTER	1109, SOP, 8P, 150 mil, PLASTIC, 12 V, 300MV, 0TO+70C, 1200 MA, ST
1203-000404	U15	1	IC-DC/DC CONVERTER	34063, SOP, 8P, 150 mil, PLASTIC, 1.0/1.3 V, 0TO+70C, 4.0 MA, ST
2007-000029	R27, 11	2	R-CHIP	0 ohm, 5 %, 1/8 W, TP, 2012
2007-000218	R2	1	R-CHIP	1.2 kohm, 1 %, 1/8 W, TP, 2012

Part No	Reference	Q'tt	Part Name	Specification
2007-000286	R10, 13, 17-21, 28 R29, 30	10	R-CHIP R-CHIP	100 ohm, 1 %, 1/8W, TP, 2012
2007-000297	R14, 16, 22-26, 31-33	10	R-CHIP	10 kohm, 1 %, 1/8W, TP, 2012
2007-000335	R9	1	R-CHIP	120 kohm, 1 %, 1/8W, TP, 2012
2007-000465	R1	1	R-CHIP	1 kohm, 1 %, 1/8 W, TP, 2012
2007-000474	R4-6	3	R-CHIP	1Mohm, 1 %, 1/8 W, TP, 2012
2007-000483	R35-37	3	R-CHIP	1 ohm, 5 %, 1/8 W, TP, 2012
2007-000735	R7, 8, 15	3	R-CHIP	30 kohm, 1 %, 1/8 W, TP, 2012
2007-001672	R38	1	R-CHIP	8.2 kohm, 1 %, 1/8 W, TP, 2012
2007-001676	R39	1	R-CHIP	910 ohm, 1 %, 1/8 W, TP, 2012
2007-007236	R3	1	R-CHIP	160 kohm, 1 %, 1/8 W, TP, 2012
2203-000206	BC18 C5, 10, 12, 14, BC9, 11	7	C-CER, CHIP	100nF, 10 %, 50 V, X7R, 2012
2203-000239	C6, 15	2	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 2012
2203-000260	BC1-8, 10, 12-17, 19, 20,C1, 7	19	C-CER, CHIP	10nF, 10 %, 50 V, X7R, TP, 2012
2203-000476	C4	1	C-CER, CHIP	1000nF, +80-20 %, 16 V, Y5 V, 2012
2203-000595	C11	1	C-CER, CHIP	0.22 nF, 5 %, 50 V, C0G, TP, 2012
2402-000175	C13	1	C-AL, SMD	470uF, 20 %, 6.3 V, 8.3x8.3x10.
2402-001034	C2	1	C-AL, SMD	22 uF, 20 %, 35 V, GP, TP, 6.6X6.6X5.4
GA41-11020A	PCB	1	PCB-PLL	COMPACT PLUS, FR-4, 2L, 1.6T, 70X8

4.4 MISC 4 Card

Part No	Reference	Q'tt	Part Name	Specification
0401-001099	D2, D3, D127-129	5	DIODE-SWITCHING	1N4148WS, 75 V, 150 MA, SOD-323, TP
0402-000309	D7	1	DIODE-RECTIFIER	1SR154-400, 400 V, 1A, SOD-106, TP
0402-001056	D124-D126	3	DIODE-RECTIFIER	MBRS140, 40 V, 1A, CASE403A, TP
0501-000477	Q1-Q3	3	TR-SMALL SIGNAL	MMBT5550, NPN, 300 MW, SOT-23, TP, 20-250
0604-001002	U31	1	PHOTO-COUPLER	TR, 100-600 %, 200 MW, SOP-4, TP
0801-002127	U18, U583	2	IC-CMOS LOGIC	74FCT16245, TRANSCEIVER, TSSOP, 48, 240 mil, DUAL, ST, 4.5/5.5 V
0801-002403	U623, U624	2	IC-CMOS LOGIC	74LCX08, AND GATE, TSSOP, 14, 173 mil, QUAD, TP, 2.0/3.6 V
0902-000314	U114	1	IC-MICROPROCESSOR	MC68EC000, 16 MHz, 16 bit, PLCC, 68P, ST, PLASTIC, 5 V, 260 MW, 0TO+70C, 24 bit,
1106-000353	U112, U113	2	IC-SRAM	6X4008, 512KX8 bit, TSOP(II), 32P, 400 mil, 70 nS, 5 V, 10 %, PLASTIC, 0TO+70C, 20UA, CMOS, ST
1107-001118	U110, U111	2	IC-FLASH MEMORY	29LV040, 512Kx8, PLCC, 32P, 11.4x13.9mm, 2.7/3.6 V, 0to+70C
1201-000197	U22	1	IC-OP AMP	MC34072, SOP, TP, 8P, 150 mil, DUAL, 100 V/MV, PLASTIC, 44 V, 0TO+70C, 97DB, 13V/US, 6NA, 500N
1203-001631	U107	1	IC-POSI.FIXED REG.	2940, TO-263, 3P, PLASTIC, 3.3 V,
1205-000394	U597	1	IC-CODEC FILTER	TP3057WM, SOP, 16P, PLASTIC, 5.2
1301-001663	U625	1	IC-CPLD	LC4128V-75T128C, TQFP, 128P, 14X14 mm, 7.5 nS, 3.3 V, 10 %, 0TO+90C, 92, 92, 4, 333 MHz, 3.47
1405-000130	V1-V3	3	VARISTOR	270V, 1200A, 9x4.6mm, TP
2007-000043	R2, R92, R140, R151, R424	5	R-CHIP	1 kohm, 1 %, 1/10 W, TP, 1608
2007-000052	R25-R28, R44, R46, R50-R52	9	R-CHIP	10 kohm, 1 %, 1/10 W, TP, 1608

Part No	Reference	Q'tt	Part Name	Specification
2007-000052	R4-R6, R13, R305, R412-R415, R417 R91, R153-R158, R163, R165, R174	20	R-CHIP	10 kohm, 1 %, 1/10 W, TP, 1608
2007-000060	R86, R88	2	R-CHIP	100 kohm, 1 %, 1/10 W, TP, 1608
2007-000070	R239, R240, R246, R247, R260-R262 R420, R421	9	R-CHIP	0 ohm, 5 %, 1/10 W, TP, 1608
2007-000287	R185-R193, R202, R204-R236 R241, R242, R248-R250 R390-R392, R418	52	R-CHIP	100 ohm, 1 %, 1/10 W, DA, TP, 1608
2007-000475	R256, R300, R301	3	R-CHIP	1Mohm, 1 %, 1/10 W, TP, 1608
2007-002906	R59	1	R-CHIP	200 kohm, 1 %, 1/10 W, TP, 1608
2007-002918	R57	1	R-CHIP	51.1 kohm, 1 %, 1/10 W, TP, 1608
2007-002991	R89	1	R-CHIP	61.9 kohm, 1 %, 1/10 W, TP, 1608
2007-007226	R315-R320, R326, R327, R330 R339-R348, R350, R352-R366 R367-R389, R419	59	R-CHIP	49.9 ohm, 1 %, 1/10 W, TP, 1608
2007-007237	R56	1	R-CHIP	24.3 kohm, 1 %, 1/10 W, TP, 1608
2007-007250	R99	1	R-CHIP	47.5 kohm, 1 %, 1/10 W, TP, 1608
2007-007274	R102	1	R-CHIP	27.4 kohm, 1 %, 1/10 W, TP, 1608
2007-007507	R159, R160, R166, R167, R306-R314	13	R-CHIP	2.74 kohm, 1 %, 1/10 W, TP, 1608
2007-008102	R257, R258	2	R-CHIP	357 ohm, 1 %, 1/10 W, TP, 1608
2007-008223	R90, R100	2	R-CHIP	39.2 kohm, 1 %, 1/10 W, TP, 1608
2007-008225	R58	1	R-CHIP	226 kohm, 1 %, 1/10 W, TP, 1608

Part No	Reference	Q'tt	Part Name	Specification
2011-001194	RA103-RA106	4	R-NET	51 ohm, 5 %, 1/16 W, L, CHIP, 8P, TP
2203-000236	C230, C372-C381	11	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 1608
2203-000257	C31	1	C-CER, CHIP	10nF, 10 %, 50 V, X7R, TP, 1608
2203-000998	C223-C226, C228, C229, C232-C237 C241, C368-C371	17	C-CER, CHIP	0.047 nF, 5 %, 50 V, C0G, TP, 1608
2203-001607	C383	1	C-CER, CHIP	0.22nF, 5 %, 50 V, NP0, 1608
2203-002793	C143, C144	2	C-CER, CHIP	1000nF, +80-20 %, 25 V, Y5 V, 2012
2203-003027	C32	1	C-CER, CHIP	0.82nF, 5 %, 50 V, NP0, TP, 1608
2203-005249	C245, C246, C250, C253, C255 C259-C286, C289, C290, C322 C332, C338, C342-C367	64	C-CER, CHIP	100nF, 10 %, 50 V, X7R, TP, 1608
2402-000120	C27, C29	2	C-AL, SMD	10 uF, 20 %, 50 V, GP, TP, 6.6X6.6X5. 4 mm
2402-000130	C19, C34	2	C-AL, SMD	2.2uF, 20 %, 50 V, GP, TP, 4.3x4.3x5.
2404-001037	C121, C122, C131	3	C-TA, CHIP	10uF, 10 %, 16 V, TP, 3528
2409-001034	BT121	1	C-EDL	1000000 uF, 5.5 V, BK, 21.6X9 mm, 5
2804-001198	Y2	1	OSCILLATOR-CLOCK	16.384 MHz, 50PPM, 10TTL & CMOS, TP, 5 V, 40 MA
2901-000184	M1	1	FILTER-EMI ON BOARD	50 V, 1A, 100pF, 7.5x2.5x6.2mm, TP
3301-001026	L114, L117-L119	4	BEAD-SMD	26 ohm, 3216, 1500 mA, TP, 15000 oh m
3301-001033	L102-L113	12	BEAD-SMD	1000 ohm, 2012, 200 mA, TP, 1624 oh m/189 MHz, 0.4 ohm
3408-000230	S122	1	SWITCH-SLIDE	30 V DC, 200 mA, DPDT, ANGLE SHAPE
3501-001035	K1-K3	3	RELAY-MINIATURE	5VDC, 140 MW, 2000 MA, 2FORMC, 4MS, 4MS
3703-000192	P22	1	CONNECTOR-BACK PANEL	64P, 2R, MALE, ANGLE, AUF

Part No	Reference	Q'tt	Part Name	Specification
3704-000249	U110, U111	2	SOCKET-IC	32P, PLCC, SN, 1.27mm
3710-001432	P23, P24	2	CONNECTOR-SOCKET	17P, 1R, 2.54 mm, STRAIGHT, AUF, BLK
3711-003272	P25	1	CONNECTOR-HEADER	BOX, 10P, 2R, 2.54mm, STRAIGHT, AU
3711-005596	J1	1	CONNECTOR-HEADER	BOX, 3P, 1R, 2 mm, SMD-A, SN/CU, NTR
4715-000127	DSS1	1	SURGE ABSORBER	300 V, 15 %, 500 A
6103-001051	-	1	SUPPORTER	DALS-6N-1, L18, NAT, NYLON6/6
EC26-20501A	T1, T2	2	TRANS AF	INFOREX, 800 mH
GA13-00004A	U594	1	IC ASIC-TMC	STL7053E, IDCS500 PREMIUM, 60 PIN, 5 V, QFP, TR
GA13-10064A	U595	1	IC ASIC	DCS, STL7065C, QFP, 160P
GA13-10579A	U10	1	IC ASIC	DCS COMPACT, STC9604, QFP, 208
GA39-00035A	J1	1	CBF HARNESS-3PIN CABLE	OFFICESERV 100, SIGNAL, UL 1007, 3 PIN, 60 mm, BLU, WHT, WHT, #26, PHR-3, BOX(BULK), 2
GA41-00168A	-	1	PCB SUB-MISC 3(4)	OFFICESERV 100, FR4, 4L, 01, 1.6T, 300MMX 92 mm, 2
GA61-10503A	-	1	EJECTOR-DCS	DCS, PAUL94-V0, NTR

4.5 MISC 3 Card

Part No	Reference	Q'tt	Part Name	Specification
0401-001099	D2, D3, D127-129	5	DIODE-SWITCHING	1N4148WS, 75 V, 150 MA, SOD-323, TP
0402-000309	D7	1	DIODE-RECTIFIER	1SR154-400, 400 V, 1 A, SOD-106, TP
0501-000477	Q1-Q3	3	TR-SMALL SIGNAL	MMBT5550, NPN, 300 MW, SOT-23, TP, 20-250
0604-001002	U31	1	PHOTO-COUPLER	TR, 100-600 %, 200 MW, SOP-4, TP
0801-002127	U18, U583	2	IC-CMOS LOGIC	74FCT16245, TRANSCEIVER, TSSOP, 48, 240 mil, DUAL, ST, 4.5/5.5 V
1201-000197	U22	1	IC-OP AMP	MC34072, SOP, TP, 8P, 150 mil, DUAL, 100 V/MV, LASTIC, 44 V, 0TO+70C, 97DB, 13 V/US, 6NA, 500N
1203-001631	U107	1	IC-POSI.FIXED REG.	2940, TO-263, 3P, PLASTIC, 3.3 V
1205-000394	U597	1	IC-CODEC FILTER	TP3057WM, SOP, 16P, PLASTIC, 5.2
1301-001663	U625	1	IC-CPLD	LC4128V-75T128C, TQFP, 128P, 4X14 mm, 5 nS, 3 V, 0 %, 0TO+90C, 9 2,92, 4, 333 MHz, 3.47
1405-000130	V1-V3	3	VARISTOR	270 V, 1200A, 9x4.6 mm, TP
2007-000043	R2, R92, R151, 424	4	R-CHIP	1 kohm, 1 %, 1/10 W, TP, 1608
2007-000052	R52, R174, R305 R412-R414, R417 R91, R153-R158, 163, R165	16	R-CHIP	10 kohm, 1 %, 1/10 W, TP, 1608
2007-000060	R86, R88	2	R-CHIP	100 kohm, 1 %, 1/10 W, TP, 1608
2007-000070	R239, R240, R246, R247, R420, R421 R260-R262	9	R-CHIP	0 ohm, 5 %, 1/10 W, TP, 1608
2007-000287	R202, R241, R242, R248 R250, R390 R392, R418	9	R-CHIP	100 ohm, 1 %, 1/10 W, DA, TP, 1608
2007-000475	R256	1	R-CHIP	1M ohm, 1 %, 1/10 W, TP, 1608
2007-002906	R59	1	R-CHIP	200 kohm, 1 %, 1/10 W, TP, 1608

Part No	Reference	Q'tt	Part Name	Specification
2007-002918	R57	1	R-CHIP	51.1 kohm, 1 %, 1/10 W, TP, 1608
2007-002991	R89	1	R-CHIP	61.9 kohm, 1 %, 1/10 W, TP, 1608
2007-007226	R315-R320, R326, R327, R330 R339-R348, R350, R352-R366 R367-R389, R419	59	R-CHIP	49.9 ohm, 1 %, 1/10 W, TP, 1608
2007-007237	R56	1	R-CHIP	24.3 kohm, 1 %, 1/10 W, TP, 1608
2007-007250	R99	1	R-CHIP	47.5 kohm, 1 %, 1/10 W, TP, 1608
2007-007274	R102	1	R-CHIP	27.4 kohm, 1 %, 1/10 W, TP, 1608
2007-007507	R159, R160, R166, R167, R306-R314	13	R-CHIP	2.74 kohm, 1 %, 1/10 W, TP, 1608
2007-008102	R257, R258	2	R-CHIP	357 ohm, 1 %, 1/10 W, TP, 1608
2007-008223	R90, R100	2	R-CHIP	39.2 kohm, 1 %, 1/10 W, TP, 1608
2007-008225	R58	1	R-CHIP	226 kohm, 1 %, 1/10 W, TP, 1608
2011-001194	RA103-RA106	4	R-NET	51 ohm, 5 %, 1/16 W, L, CHIP, 8P, TP
2203-000236	C230, C372-C381	11	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 1608
2203-000257	C31	1	C-CER, CHIP	10 nF, 10 %, 50 V, X7R, TP, 1608
2203-000998	C368-C371	4	C-CER, CHIP	0.047 nF, 5 %, 50 V, C0G, TP, 1608
2203-001607	C383	1	C-CER, CHIP	0.22 nF, 5 %, 50 V, NP0, 1608
2203-002793	C143, C144	2	C-CER, CHIP	1000 nF, +80-20 %, 25 V, Y5 V, 2012
2203-003027	C32	1	C-CER, CHIP	0.82 nF, 5 %, 50 V, NP0, TP, 1608
2203-005249	C260, C261, C264-C286, C290 C344-C353, C358, C359 C360-C367	46	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, TP, 1608
2402-000120	C27, C29	2	C-AL, SMD	10 uF, 20 %, 50 V, GP, TP, 6.6X6.6X5.4 mm
2402-000130	C19, C34	2	C-AL, SMD	2.2 uF, 20 %, 50 V, GP, TP, 4.3x4.3x5.
2404-001037	C121, C122	2	C-TA, CHIP	10 uF, 10 %, 16 V, TP, 3528
2804-001198	Y2	1	OSCILLATOR-CLOCK	16.384 MHz, 50PPM, 10TTL & CMOS, TP, 5 V, 40 MA

Part No	Reference	Q'tt	Part Name	Specification
2901-000184	M1	1	FILTER-EMI ON BOARD	50 V, 1A, 100 pF, 7.5x2.5x6.2 mm, TP
3301-001026	L114, L117-L119	4	BEAD-SMD	26 ohm, 3216, 1500 mA, TP, 15000 oh m
3301-001033	L102-L113	12	BEAD-SMD	1000 ohm, 2012, 200 mA, TP, 1624 oh m/189 MHz, 0.4 ohm
3501-001035	K1-K3	3	RELAY-MINIATURE	5 VDC, 140 MW, 2000 MA, 2FORMC, 4MS, 4MS
3703-000192	P22	1	CONNECTOR-BACK PANEL	64P, 2R, MALE, ANGLE, AUF
3710-001432	P23, P24	2	CONNECTOR-SOCKET	17P, 1R, 2.54 mm, STRAIGHT, AUF, BLK
3711-003272	P25	1	CONNECTOR-HEADER	BOX, 10P, 2R, 2.54mm, STRAIGHT, AU
3711-005596	J1	1	CONNECTOR-HEADER	BOX, 3P, 1R, 2 mm, SMD-A, SN/CU, NTR
4715-000127	DSS1	1	SURGE ABSORBER	300 V, 15 %, 500 A
6103-001051	-	1	SUPPORTER	DALS-6N-1, L18, NAT, NYLON6/6
EC26-20501A	T1, T2	2	TRANS AF	INFOREX, 800 mH
GA13-00004A	U594	1	IC ASIC-TMC	STL7053E, IDCS500 PREMIUM, 60 PIN, 5 V, QFP, TR
GA13-10064A	U595	1	IC ASIC	DCS, STL7065C, QFP, 160P
GA39-00035A	J1	1	CBF HARNESS-3PIN CABLE	OFFICESERV 100, SIGNAL, UL 1007, 3 PIN, 60 mm, BLU, WHT, WHT, #26, PHR-3, BOX(BULK), 2
GA41-00168A	-	1	PCB SUB-MISC 3(4)	OFFICESERV 100, FR4, 4L, 01, 1.6T, 300 mmX 92 mm
GA61-10503A	-	1	EJECTOR-DCS	DCS, PAUL94-V0, NTR

4.6 MISC 2 Card

Part No	Reference	Q'tt	Part Name	Specification
0402-000165	D1, D8, D9	3	DIODE-RECTIFIER	1N5819, 40 V, 1A, DO-41, TP
2801-001516	Y1	1	CRYSTAL-UNIT	3.6864 MHz, 50PPM, 28-AAM, 150 ohm
2804-000145	Y2	1	OSCILLATOR-CLOCK	16.384 MHz, 30ppm, 10 TTL, ST, 5V, 1
3301-000292	B18	1	BEAD-RADIAL	100 ohm, 3.5x0.6x6.5 mm, 7000 mA, T P,0.01 ohm
3408-000230	SW1	1	SWITCH-SLIDE	30 V DC, 200 mA, DPDT, ANGLE SHAPE
3501-000217	RLY1-RLY3	3	RELAY-MINIATURE	5 V, 150 MW, 1000 MA, 2FORMC, 6MS , 3MS
3701-000215	P1, 2	2	CONNECTOR-DSUB	9P, 2R, FEMALE, ANGLE, AUF
3703-000192	P3	1	CONNECTOR-BACK PANEL	64P, 2R, MALE, ANGLE, AUF
3704-000235	U30, U16	2	SOCKET-IC	28P, DIP, SN, 2.54 mm
3711-003455	P4, P5	2	CONNECTOR-HEADER	3WALL, 14P, 1R, 2.5 mm, STRAIGHT, SN
4302-000126	BAT1	1	BATTERY-NICD(2ND)	3.6 V(1.2 VX3), 70 MAH, CYLINDER, 3.9 V, 6 MA/14HR
4715-000127	DSS1	1	SURGE ABSORBER	300 V, 15 %, 500 A
EC26-20501A	T1, 2	2	TRANS AF	INFOREX, 800 mH
GA61-10503A	EJECTOR	1	EJECTOR-DCS	DCS, PAUL94-V0, NTR
0401-000133	D2-6	5	DIODE-SWITCHING	RLS4148, 75 V, 150 MA, LL-34, TP
0402-000305	D7	1	DIODE-RECTIFIER	RLR4003, 200 V, 0.8A, LL-41, TP
0501-000477	Q2, 3, 4	3	TR-SMALL SIGNAL	MMBT5550, NPN, 300 MW, SOT-23, TP, 20-250
0604-001002	U31	1	PHOTO-COUPLER	TR, 100-600 %, 200 MW, SOP-4, TP
0801-000388	U19, 29	2	IC-CMOS LOGIC	74HC08, AND GATE, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
0801-000397	U3, U9, U32	3	IC-CMOS LOGIC	74HC04, INVERTER, SOP, 14, 150 mil, HEX, TP, 2.0/6.0 V

Part No	Reference	Q'tt	Part Name	Specification
0801-000411	U26	1	IC-CMOS LOGIC	74HC32, OR GATE, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
0801-000642	U15	1	IC-CMOS LOGIC	74HC138, 3-TO-8 DECODER, SOP, 16, 150 mil, SINGLE, TP, 2.0/6.0 V
0801-000696	U18, U27	2	IC-CMOS LOGIC	74HC245, TRANSCEIVER, SOP, 20, 300 mil, OCTAL, TP, 2.0/6.0 V
0801-000702	U20	1	IC-CMOS LOGIC	74HC125, BUFFER, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
0801-000716	U28	1	IC-CMOS LOGIC	74HC541, BUFFER/DRIVER, SOP, 20, 300 mil, OCTAL, TP, 2.0/6.0 V
0902-000314	U4	1	IC-MICROPROCESSOR	MC68EC000, 16 MHz, 16 bit, PLCC, 68P, ST, PLASTIC, 5 V, 260 MW, 0TO+70C, 24 bit
0904-000177	U5	1	IC-DUART	68C681, 8 bit, PLCC, 44P, 17.5X17.5 mm, 4 MHz, TR, C MOS, PLASTIC, 5 V, 1 W, 0TO+70C, 4 bit
1006-001195	U12, U23	2	IC-LINE TRANSCEIVER	208, SOP, 24P, 299 mil, QUAD, TP, PLASTIC, 5.5 V, 0to+70C, 941 MW, 4, 4, 0.4/3.5 V
1106-000131	U1, 2, 7, 8, 13, 14 U24, 25	8	IC-SRAM	K6X1008C2, 128KX8 bit, SOP, 32P, 20.87X11.43 mm, 55 nS, 4.5/5.5 V, PLASTIC, 0TO+70C, 15UA, C
1201-000197	U22	1	IC-OP AMP	MC34072, SOP, TP, 8P, 150 mil, DUAL, 100 V/MV, PLASTIC, 44 V, 0TO+70C, 97DB, 13 V/US, 6NA, 500N
1205-000394	U21	1	IC-CODEC FILTER	TP3057WM, SOP, 16P, PLASTIC, 5.2
1405-000130	TNR1, TNR2 TNR3	3	VARISTOR	270 V, 1200 A, 9x4.6mm, TP
2007-000029	B1 R22, R23 R24	4	R-CHIP	0 ohm, 5 %, 1/8 W, TP, 2012
2007-000277	R7, 9, 75, 86, 88	5	R-CHIP	100 kohm, 1 %, 1/8 W, TP, 2012
2007-000286	R1, 3, R10-12, R14-21	13	R-CHIP	100 ohm, 1 %, 1/8 W, TP, 2012

Part No	Reference	Q'tt	Part Name	Specification
2007-000286	R109 R110-112 R31-43, 45, 47, 53 R54, R61-74, 78, 79, 84 R87, R94-96, 98, 104	44	R-CHIP	100 ohm, 1 %, 1/8 W, TP, 2012
2007-000297	R106-108, R113 R4-6, 13, R25-28, 30 R44, 46, R48-50, 52, 60 R76, 77, 80, 81, 83, 91	26	R-CHIP	10 kohm, 1 %, 1/8 W, TP, 2012
2007-000465	R29, 92, 97	3	R-CHIP	1 kohm, 1 %, 1/8 W, TP, 2012
2007-000474	R8, R101	2	R-CHIP	1 Mohm, 1 %, 1/8 W, TP, 2012
2007-000530	R59	1	R-CHIP	200 kohm, 1 %, 1/8 W, TP, 2012
2007-000613	R56	1	R-CHIP	24 kohm, 1 %, 1/8 W, TP, 2012
2007-000639	R2	1	R-CHIP	270 ohm, 1 %, 1/8 W, TP, 2012
2007-000650	R102	1	R-CHIP	27 kohm, 1 %, 1/8 W, TP, 2012
2007-000682	R55, 82, 85	3	R-CHIP	3.3 kohm, 1 %, 1/8 W, TP, 2012
2007-000827	R90, 100	2	R-CHIP	39 kohm, 1 %, 1/8 W, TP, 2012
2007-000938	R99	1	R-CHIP	47 kohm, 1 %, 1/8 W, TP, 2012
2007-001006	R57	1	R-CHIP	51 kohm, 1 %, 1/8 W, TP, 2012
2007-001097	R89	1	R-CHIP	62 kohm, 5 %, 1/8 W, TP, 2012
2007-007158	R58	1	R-CHIP	226 kohm, 1 %, 1/8 W, TP, 2012
2007-007693	R103, 105	2	R-CHIP	360 ohm, 0.5 %, 1/8 W, TP, 2012
2203-000206	BC1-18, BC20-60 BC61, BC63, BC65 C25, 26, 35, 37 C6, 20, 23, 28, 30	71	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, 2012
2203-000239	BC62	1	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 2012

Part No	Reference	Q'tt	Part Name	Specification
2203-000239	C1, 2, C9-18, 21, 22 C36	15	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 2012
2203-000260	C3, 31	2	C-CER, CHIP	10 nF, 10 %, 50 V, X7R, TP, 2012
2203-000274	C5	1	C-CER, CHIP	0.01 nF, 0.25PF, 50 V, C0G, TP, 2012
2203-000389	C4	1	C-CER, CHIP	0.015 nF, 5 %, 50 V, C0G, TP, 2012
2203-001230	C24	1	C-CER, CHIP	0.82 nF, 5 %, 50 V, NP0, TP, 2012
2401-000649	C19, C34	2	C-AL	2.2 uF, 20 %, 50 V, BP, TP, 5x11, 5
2402-000170	C32, C33	2	C-AL, SMD	1 uF, 20 %, 50 V, GP, TP, 4.3x4.3x5.4,
2402-000176	C27, 29	2	C-AL, SMD	10 uF, 20 %, 16 V, GP, TP, 4.3x4.3x5.4
2901-000184	B2	1	FILTER-EMI ON BOARD	50 V, 1A, 100pF, 7.5x2.5x6.2mm, TP
3301-000344	B3-B5	3	BEAD-RADIAL	200 ohm, 3.5x0.6x6.5mm, 7000 mA, TP , 0.01 ohm
3301-001033	B6-17	12	BEAD-SMD	1000 ohm, 2012, 200 mA, TP, 1624 ohm/189 MHz, 0.4 ohm
GA13-00004A	U17	1	IC ASIC-TMC	STL7053E, IDCS500 PREMIUM, 60 PIN, 5 V, FP, TR
GA13-10058A	U6	1	IC ASIC	DCS, STB9404, QFP, 160P
GA13-10064A	U11	1	IC ASIC	DCS, STL7065C, QFP, 160P
GA13-10579A	U10	1	IC ASIC	DCS COMPACT, STC9604, QFP, 208
GA41-11013B	REV.06	1	PCB-MISC	COMPACT II, FR-4, 4L, T1.6, 300X92

4.7 MISC 1 Card

Part No	Reference	Q'tt	Part Name	Specification
0402-000165	D1	1	DIODE-RECTIFIER	1N5819, 40 V, 1A, DO-41, TP
2801-001516	Y1	1	CRYSTAL-UNIT	3.6864 MHz, 50PPM, 28-AAM, 150 ohm
2804-000145	Y2	1	OSCILLATOR-CLOCK	16.384 MHz, 30ppm, 10 TTL, ST, 5 V, 1
3301-000292	B18	1	BEAD-RADIAL	100 ohm, 3.5x0.6x6.5mm, 7000 mA, TP , 0.01 ohm
3501-000217	RLY1-RLY3	3	RELAY-MINIATURE	5 V, 150 MW, 1000 MA, 2FORMC, 6MS , 3MS
3701-000215	P1, 2	2	CONNECTOR-DSUB	9P, 2R, FEMALE, ANGLE, AUF
3703-000192	P3	1	CONNECTOR-BACK PANEL	64P, 2R, MALE, ANGLE, AUF
3711-003455	P4, P5	2	CONNECTOR-HEADER	3WALL, 14P, 1R, 2.5 mm, STRAIGHT, SN
4715-000127	DSS1	1	SURGE ABSORBER	300 V, 15 %, 500A
EC26-20501A	T1, 2	2	TRANS AF	INFOREX, 800mH
GA61-10503A	EJECTOR	1	EJECTOR-DCS	DCS, PAUL94-V0, NTR
0401-000133	D2-6	5	DIODE-SWITCHING	RLS4148, 75 V, 150 MA, LL-34, TP
0402-000305	D7	1	DIODE-RECTIFIER	RLR4003, 200 V, 0.8A, LL-41, TP
0501-000477	Q2, 3, 4	3	TR-SMALL SIGNAL	MMBT5550, NPN, 300 MW, SOT-23, TP, 20-250
0604-001002	U31	1	PHOTO-COUPLER	TR, 100-600 %, 200 MW, SOP-4, TP
0801-000388	U19, 29	2	IC-CMOS LOGIC	74HC08, AND GATE, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
0801-000397	U9, U32	2	IC-CMOS LOGIC	74HC04, INVERTER, SOP, 14, 150 mil, HEX, TP, 2.0/6.0 V
0801-000411	U26	1	IC-CMOS LOGIC	74HC32, OR GATE, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
0801-000642	U15	1	IC-CMOS LOGIC	74HC138, 3-TO-8 DECODER, SOP, 16, 150 mil, SINGLE, TP, 2.0/6.0 V
0801-000696	U18	1	IC-CMOS LOGIC	74HC245, TRANSCEIVER, SOP, 20, 300 mil, OCTAL, TP, 2.0/6.0 V

Part No	Reference	Q'tt	Part Name	Specification
0801-000696	U27	1	IC-CMOS LOGIC	74HC245, TRANSCEIVER, SOP, 20, 300 mil, OCTAL, TP, 2.0/6.0 V
0801-000702	U20	1	IC-CMOS LOGIC	74HC125, BUFFER, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
0801-000716	U28	1	IC-CMOS LOGIC	74HC541, BUFFER/DRIVER, SOP, 20, 300 mil, OCTAL, TP, 2.0/6.0 V
0904-000177	U5	1	IC-DUART	68C681, 8 bit, PLCC, 44P, 17.5X17.5 mm, 4 MHz, TR, CMOS, PLASTIC, 5 V, 1 W, 0TO+70C, 4 bit
1006-001195	U12, U23	2	IC-LINE TRANSCEIVER	208, SOP, 24P, 299 mil, QUAD, TP, PLASTIC, 5.5 V, 0to+70C, 941 MW, 4, 4, 0.4/3.5 V,
1201-000197	U22	1	IC-OP AMP	MC34072, SOP, TP, 8P, 150 mil, DUAL, 100 V/MV, PLASTIC, 44 V, 0TO+70C, 97DB, 13 V/US, 6NA, 500N
1205-000394	U21	1	IC-CODEC FILTER	TP3057WM, SOP, 16P, PLASTIC, 5.2
1405-000130	TNR1, TNR 2, TNR3	3	VARISTOR	270 V, 1200 A, 9x4.6 mm, TP
2007-000029	R2, 22, 23 R24, B1	5	R-CHIP	0 ohm, 5 %, 1/8 W, TP, 2012
2007-000277	R7, 9, 75, 86, 88	5	R-CHIP	100 kohm, 1 %, 1/8 W, TP, 2012
2007-000286	R1, 3, R10-12, R14-21 R109 R110-112 R31-43, 45, 47, 53 R54, R61-74, 78, 79, 84 R87, R94-96, 98, 104	57	R-CHIP	100 ohm, 1 %, 1/8 W, TP, 2012
2007-000297	R106-108, R113 R4-6, 13, R25-28, R30 R44, 46, R48-50, 52, 60	20	R-CHIP	10 kohm, 1 %, 1/8 W, TP, 2012

Part No	Reference	Q'tt	Part Name	Specification
2007-000297	R76, 77, 80, 81, 83, 91	6	R-CHIP	10 kohm, 1 %, 1/8 W, TP, 2012
2007-000465	R29, R92, 97	3	R-CHIP	1 kohm, 1 %, 1/8 W, TP, 2012
2007-000474	R8, R101	2	R-CHIP	1 Mohm, 1 %, 1/8 W, TP, 2012
2007-000530	R59	1	R-CHIP	200 kohm, 1 %, 1/8 W, TP, 2012
2007-000613	R56	1	R-CHIP	24 kohm, 1 %, 1/8 W, TP, 2012
2007-000650	R102	1	R-CHIP	27 kohm, 1 %, 1/8 W, TP, 2012
2007-000682	R55, 82, 85	3	R-CHIP	3.3 kohm, 1 %, 1/8 W, TP, 2012
2007-000827	R90, R100	2	R-CHIP	39 kohm, 1 %, 1/8 W, TP, 2012
2007-000938	R99	1	R-CHIP	47 kohm, 1 %, 1/8 W, TP, 2012
2007-001006	R57	1	R-CHIP	51 kohm, 1 %, 1/8 W, TP, 2012
2007-001097	R89	1	R-CHIP	62 kohm, 5 %, 1/8 W, TP, 2012
2007-007158	R58	1	R-CHIP	226 kohm, 1 %, 1/8 W, TP, 2012
2007-007693	R103, 105	2	R-CHIP	360 ohm, 0.5 %, 1/8 W, TP, 2012
2203-000206	BC1-18, BC20-60 BC61, BC63, BC65 C25, 26, 35, 37 C6, 20, 23, 28, 30	71	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, 2012
2203-000239	BC62	1	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 2012
2203-000260	C3, C31	2	C-CER, CHIP	10 nF, 10 %, 50 V, X7R, TP, 2012
2203-000274	C5	1	C-CER, CHIP	0.01 nF, 0.25PF, 50 V, C0G, TP, 2012
2203-000389	C4	1	C-CER, CHIP	0.015 nF, 5 %, 50 V, C0G, TP, 2012
2203-001230	C24	1	C-CER, CHIP	0.82 nF, 5 %, 50 V, NP0, TP, 2012
2401-000649	C19, C34	2	C-AL	2.2 uF, 20 %, 50 V, BP, TP, 5x11, 5
2402-000170	C32, C33	2	C-AL, SMD	1 uF, 20 %, 50 V, GP, TP, 4.3x4.3x5.4
2402-000176	C27, 29	2	C-AL, SMD	10 uF, 20 %, 16 V, GP, TP, 4.3x4.3x5.4
2901-000184	B2	1	FILTER-EMI ON BOARD	50 V, 1A, 100pF, 7.5x2.5x6.2 mm, TP
3301-000344	B3-B5	3	BEAD-RADIAL	200 ohm, 3.5x0.6x6.5mm, 7000 mA, TP , 0.01 ohm
3301-001033	B6-17	12	BEAD-SMD	1000 ohm, 2012, 200 mA, TP,1624 ohm /189 MHz, 0.4 ohm
GA13-00004A	U17	1	IC ASIC-TMC	STL7053E, IDCS500 PREMIUM, 60 PIN, 5 V, QFP, TR

Part No	Reference	Q'tt	Part Name	Specification
GA13-10058A	U6	1	IC ASIC	DCS, STB9404, QFP, 160P
GA13-10064A	U11	1	IC ASIC	DCS, STL7065C, QFP, 160P
GA41-11013B	REV.06	1	PCB-MISC	COMPACT II, FR-4, 4L, T1.6, 300X92

4.8 MGI 3 Card

Part No	Reference	Q'tt	Part Name	Specification
0402-001056	D1-D3	3	DIODE-RECTIFIER	MBRS140, 40 V, 1A, CASE403A, TP
0601-001391	LED1, LED2	2	LED	CBI-ANGLE, GRN, 2.9 mm, 565NM, 8.6X10X10 mm
0801-000906	U37	1	IC-CMOS LOGIC	74HCT74, D FLIP-FLOP, SOP, 14, 150 mil, DUAL, TP, 4.5/5.5 V
0801-002295	U4	1	IC-CMOS LOGIC	74HCT259, 8 bit LATCH, SOP, 16P, 39
0801-002325	U8	1	IC-CMOS LOGIC	74LCX04, INVERTER, TSSOP, 14, 173 mil, HEX, TP, 2.0/3.6 V
0801-002366	U15	1	IC-CMOS LOGIC	74LVX08, AND GATE, SOP, 14P, 400MI
0801-002379	U21, U33	2	IC-CMOS LOGIC	74LCX16245, TRANSCEIVER, TSSOP, 48, 240 mil, DUAL, TP, 2.0/3.6 V
0801-002381	U13	1	IC-CMOS LOGIC	74LCX138, DECODER/DEMULTIPLEXE, SOP, 16, 150 mil, SINGLE, TP, 2.0/3.6 V
0801-002643	U23	1	IC-CMOS LOGIC	74LCX139, DECODER/DEMUX, SOP, 16, 150 mil, QUAD, TP, 2.0/3.6 V
0802-001039	U20, U22, U31, U32	4	IC-BICMOS LOGIC	74LVT16244, BUFFER/DRIVER, TSSOP, 48, 240 mil QUAD, TP, 1.65/3.6 V
0802-001099	U7, U14	2	IC-BICMOS LOGIC	74LVTH125, BUFFER, TSSOP, 14, 173 mil, QUAD, TP, 2.7/3.6 V
0903-001151	U24	1	IC-MICROCONTROLLER	S3C4510, 32 bit, QFP, 208P, 28X28 mm, 50 MHz, TR, CMOS, PLASTIC, 3.3 V, 0TO+70C, 8 KB, 22 bit,
1006-001140	U6	1	IC-LINE TRANSCEIVER	3232, SSOP, 16P, 212 mil, DUAL, TP, PLASTIC, 5.5 V, 0to+70C, 571 MW, 2, 2,
1105-001103	U19, U29	2	IC-DRAM	4S641632, 1MX16X4 bit, TSOP, 54P, 400 mil, 10 nS, 3.3 V, 10 %, PLASTIC, 0TO+70C, 30 MA, CMOS, TR
1106-001354	U2, U10	2	IC-SRAM	6X4008, 512KX8 bit, TSOP2, 32P, 400 mil, 70 nS, 3.3 V, 10 %, PLASTIC, 0TO+70C, 15UA, CMOS, ST
1106-001469	U1, U25	2	IC-SRAM	GA71116ATP-8, 64KX16 bit, TSOP, 44P, 400 mil, 8 nS, 3.3 V, 10 %, 0TO+70C, 20 MA, TP
1107-001085	U18, U28, U36	3	IC-FLASH MEMORY	29LV160, 2Mx8/1Mx16, TSOP, 48P, 18.4x12 mm, 2.7/3.6 V, 0to+70C

Part No	Reference	Q'tt	Part Name	Specification
1107-001118	U3	1	IC-FLASH MEMORY	29LV040, 512Kx8, PLCC, 32P, 11.4x13.9mm, 2.7/3.6 V, 0to+70C
1109-000126	U5, U12	2	IC-FIFO	7201, 512X9 bit, PLCC, 32P, 13.9X11.4 mm, 50 nS, 5 V, 0.1, PLASTIC, 0TO+70C, 5 MA, CMOS, T R
1202-000137	U30	1	IC-MONITOR	DS1232, SOIC, 16P, 300 mil, PLASTIC, 0TO+70C, 10 MA, TP
1203-001227	U38	1	IC-RESET	DS1233D, SOT-223, 4P, 6.3X3.3 mm, PLASTIC4, 0TO+85C, 8 MA, TP
1203-001631	U79	1	IC-POSI.FIXED REG.	2940, TO-263, 3P, PLASTIC, 3.3 V,
1203-002046	U27	1	IC-POSI.FIXED REG.	5209, SOP, 8P, 150 mil, PLASTIC, 1.782/1.818, 0to+125C, 500 mA, TP
1204-002202	U16, U35	2	IC-VOICE PROCESSOR	AC48204E6-C, TQFP, 144P, 20X20 mm, PLASTIC, 3.6 V, 200 MW, 0TO+70C, TR, VOP PROCESSOR
1205-001864	U11	1	IC-TRANSCEIVER	DJLXT972ALC, LQFP, 64P, 393 mil, P LASTIC, 4 V, 0TO+70C, TR
1301-001473	U9	1	IC-CPLD	3064, TQFP, 100P, 16x16 mm, 10nS, 3.3, 10 %
2007-000043	R166, R184-R187, R212, R367, R419	8	R-CHIP	1 kohm, 1 %, 1/10 W, TP, 1608
2007-000052	R13, R16, R20, R32, R40, R45-R49 R137-R155, R157, R158, R196-R201, R208 R210, R214-R217, R221, R226 R232-R234, R236, R242, R244 R245, R247-R250, R253, R256 R262, R275, R278-R285	68	R-CHIP	10 kohm, 1 %, 1/10 W, TP, 1608

Part No	Reference	Q'tt	Part Name	Specification
2007-000052	R288-R292, R294, R298, R304 R313-R320, R323-R330, R343, R344 R348, R370, R373, R390, R395, R458 R55, R58, R60-R65, R67-R79 R84-R97, R102-R106, R109-R129	93	R-CHIP	10 kohm, 1 %, 1/10 W, TP, 1608
2007-000070	R15, R81, R180, R203-R206, R219, R227 R235, R237, R239, R241, R251, R399, R405 R266, R267, R296, R299, R346, R349	22	R-CHIP	0 ohm, 5 %, 1/10 W, TP, 1608
2007-000287	R192, R276, R333	3	R-CHIP	100 ohm, 1 %, 1/10 W, DA, TP, 1608
2007-001164	R182, R183	2	R-CHIP	75 ohm, 1 %, 1/10 W, TP, 1608
2007-002987	R107, R108, R130, R175-178 R131, R133, R156, R163 R188-R191, R202, R213 R25-R28, R39, R51, R54, R66 R268-R271, R303, R366	31	R-CHIP	4.75 kohm, 1 %, 1/10 W, TP, 1608
2007-007049	R10	1	R-CHIP	22.1 kohm, 1 %, 1/10 W, TP, 1608

Part No	Reference	Q'tt	Part Name	Specification
2007-007226	R211, R240, R252, R274 R398, R400-R404, R406-R415, R417, R459, R466 R4-R9, R194, R195	31	R-CHIP	49.9 ohm, 1 %, 1/10 W, TP, 1608
2007-007454	R243, R246, R264, R272	4	R-CHIP	332 ohm, 1 %, 1/10 W, TP, 1608
2007-008122	R228-R231, R238, R254, R257, R259, R261 R263, R273, R277, R286, R287 R293, R297, R300-R302 R305-R312, R321, R322, R331, R332, R334-R342 R345, R350-R365, R369, R371 R374-R389, R392, R393, R397, R420, R465 R53, R80, R82, R99-R101, R469-R471	89	R-CHIP	22.1 ohm, 1 %, 1/10 W, DA, TP, 1608
2203-000041	C11, C12, C36, C37	4	C-CER, CHIP	0.01 nF, 0.25PF, 50 V, C0G, TP, 1608
2203-000236	C97, C171, C177	3	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 1608
2203-000998	C63, C65-C67	4	C-CER, CHIP	0.047 nF, 5 %, 50 V, C0G, TP, 1608
2203-001408	C4, C5	2	C-CER, CHIP	0.27 nF, 5 %, 50 V, NP0, TP, 1608
2203-001656	C122	1	C-CER, CHIP	0.47 nF, 5 %, 50 V, NP0, TP, 1608
2203-003027	C112	1	C-CER, CHIP	0.82 nF, 5 %, 50 V, NP0, TP, 1608

Part No	Reference	Q'tt	Part Name	Specification
2203-005249	C113-C121, C123-C157, C159-C169 C173-C175, C182, C183 C22-C25, C27, C31, C32, C34, C35, C38 C40-C62, C64, C68-C83, C85-C96, C98-C111 C6, C8-C10, C13, C14, C18	143	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, TP, 1608
2402-001042	C28, C33	2	C-AL, SMD	100 uF, 20 %, 16 V, GP, TP, 6.6x6.6x5.4 mm
2404-000227	C2, C15, C21, C39	4	C-TA, CHIP	4.7 uF, 10 %, 10 V, TP, 3216
2404-001037	C3, C17, C26, C29	4	C-TA, CHIP	10 uF, 10 %, 16 V, TP, 3528
2404-001228	C180	1	C-TA, CHIP	100 uF, 10 %, 16 V, GP, TP, 7343
2409-001034	C7	1	C-EDL	1000000 uF, 5.5 V, BK, 21.6X9 mm, 5
2801-000199	Y1, Y5	2	CRYSTAL-UNIT	20 MHz, 50ppm, 28-AAA, 16pF, 50 ohm
2804-001245	Y4	1	OSCILLATOR-CLOCK	10 MHz, 50ppm, 10TTL & CMOS, TP, 3.
2804-001247	Y2	1	OSCILLATOR-CLOCK	25 MHz, 50PPM, 10TTL & CMOS, TP, 3.3 V
2901-001155	M1	1	FILTER-EMI SMD	25 V, 6A, 220pF, 3.2x1.6x1.6 mm, TP
3301-000344	L10	1	BEAD-RADIAL	200 ohm, 3.5x0.6x6.5 mm, 7000 mA, TP, 0.01 ohm
3301-001026	L1, L3, L5, L9	4	BEAD-SMD	26 ohm, 3216, 1500 mA, TP, 15000 ohm
3301-001308	L2, L8	2	BEAD-SMD	10 ohm, 1608, 500 mA, TP, 0.15 ohm
3403-000202	S2	1	SWITCH-PUSH	28 V, 100 mA, SPDT, ON-OFF
3408-000230	S1	1	SWITCH-SLIDE	30 V DC, 200 mA, DPDT, ANGLE SHAPE

Part No	Reference	Q'tt	Part Name	Specification
3701-000215	P1	1	CONNECTOR-DSUB	9P, 2R, FEMALE, ANGLE, AUF
3703-000124	P4	1	CONNECTOR-BACK PANEL	20P, 2R, MALE, ANGLE, AUF
3703-000179	P5	1	CONNECTOR-BACK PANEL	50P, 2R, MALE, ANGLE, AUF
3704-000249	U3	1	SOCKET-IC	32P, PLCC, SN, 1.27 mm
3710-001659	J1, J2	2	CONNECTOR-SOCKET	40P, 2R, 0.8 mm, SMD-S, AUF, NTR
3711-003272	P3	1	CONNECTOR-HEADER	BOX, 10P, 2R, 2.54 mm, STRAIGHT, AU
3722-001673	P2	1	JACK-MODULAR	8P/8C, STANDARD, N, ANGLE, STANDARD, N, BLK, AU30U
4401-001232	U78	1	CONVERTER-DC/DC	5 VDC, 1A, 5 W, 85 %, BK
4709-001023	MI1	1	TRANSCEIVER	100BASE-TX, ATM 155Mbs, TP-FDDI
GA41-00093A	PCS04	1	PCB-ITM 3	IDCS 70, FR4, 6L, 01, 1.6T, 300X192 mm, 2 ARRAYS
GA61-10503A	EJECTOR	2	EJECTOR-DCS	DCS, PAUL94-V0, NTR

4.9 MEM 4 Card

Part No	Reference	Q'tt	Part Name	Specification
0402-000165	D2-D4	3	DIODE-RECTIFIER	1N5819, 40 V, 1A, DO-41, TP
0601-001095	LED1-LED5	5	LED	SMD, RED, 3.0X1.5 mm, 660NM, 3.0X1.5X1.4 mm
0801-000379	U20	1	IC-CMOS LOGIC	74HC00, NAND GATE, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
0801-000696	U34	1	IC-CMOS LOGIC	74HC245, TRANSCEIVER, SOP, 20, 300 mil, OCTAL, TP, 2.0/6.0 V
0801-000856	U10, U11	2	IC-CMOS LOGIC	74FCT16245, TRANSCEIVER, SSOP, 48, 300 mil, DUAL, ST, 4.5/5.5 V
0801-002379	U5, U8	2	IC-CMOS LOGIC	74LCX16245, TRANSCEIVER, TSSOP, 48, 240 mil, DUAL, TP, 2.0/3.6 V
0903-001151	U1	1	IC-MICROCONTROLLER	S3C4510, 32 bit, QFP, 208P, 28X28 mm, 50 MHz, TR, CMOS, PLASTIC, 3.3 V, 0TO+70C, 8KB, 22 bit
0909-000105	U12	1	IC-REAL TIME CLOCK	RTC72423, 4 bit, SOP, 24P, 16.3X7.9 mm, 32.768KHZ, ST, CMOS, PLASTIC, 5 V, -40TO+85C, 4B
1006-000133	U14	1	IC-DRIVER/RECEIVER	232, SOP, 16P, 150 mil, DUAL, TP, PLASTIC, 5.5 V, 10 MA, 0TO+70C, 696 MW, 2, EIA RS232/CCITT V.2
1105-001103	U6, U7	2	IC-DRAM	4S641632, 1MX16X4 bit, TSOP, 54P, 400 mil, 10 nS, 3.3 V, 10 %, PLASTIC, 0TO+70C, 30 MA, CMOS, TR
1106-001227	U9, U33, U37	3	IC-SRAM	6X4016, 256KX16 bit, TSOP(II), 44P, 400 mil, 70 nS, 5 V, 10 %, PLASTIC, 0TO+70C, 20 uA, CMOS, ST
1107-001025	U22, U23	2	IC-FLASH MEMORY	29F016, 2Mx8, TSOP, 48P, 18.4x12mm, 4.5/5.5 V, 0to+70C
1107-001228	U4	1	IC-FLASH MEMORY	28F640, 8Mx8/4Mx16, TSOP, 56P, 18.4x14mm, 2.7/3.6 V, -25to+85C
1202-000137	U2, U21	2	IC-MONITOR	DS1232, SOIC, 16P, 300 mil, PLASTIC, 0TO+70C, 10 MA, TP
1203-001543	U17	1	IC-POSI.FIXED REG.	78R33, TO-220, 4P, 400 mil, PLASTIC
1205-001864	U13	1	IC-TRANSCEIVER	DJLXT972ALC, LQFP, 64P, 393 mil, PLASTIC, 4 V, 0TO+70C, TR

Part No	Reference	Q'tt	Part Name	Specification
1301-001407	U18	1	IC-EPLD	M4A5-128/64, TQFP, 100P, 14x14 mm, 10nS, 5, 10 %
2007-000043	R143-R146	4	R-CHIP	1 kohm, 1 %, 1/10 W, TP, 1608
2007-000052	R69-R127, R131-R139, R191	69	R-CHIP	10 kohm, 1 %, 1/10 W, TP, 1608
2007-000070	R2	1	R-CHIP	0 ohm, 5 %, 1/10 W, TP, 1608
2007-000287	R9, R158, R159, R169, R190	5	R-CHIP	100 ohm, 1 %, 1/10 W, DA, TP, 1608
2007-000475	R140-R142	3	R-CHIP	1M ohm, 1 %, 1/10 W, TP, 1608
2007-002987	R168	1	R-CHIP	4.75 kohm, 1 %, 1/10 W, TP, 1608
2007-007049	R147	1	R-CHIP	22.1 kohm, 1 %, 1/10 W, TP, 1608
2007-007226	R150, R151	2	R-CHIP	49.9 ohm, 1 %, 1/10 W, TP, 1608
2007-007266	R6	1	R-CHIP	301 kohm, 1 %, 1/10 W, TP, 1608
2007-007454	R163	1	R-CHIP	332 ohm, 1 %, 1/10 W, TP, 1608
2007-007645	R7, R8, R10-R68, R170-R189	81	R-CHIP	51.1 ohm, 1 %, 1/10 W, TP, 1608
2007-008091	R165-R167	3	R-CHIP	4.32 kohm, 1 %, 1/10 W, TP, 1608
2007-008122	R164	1	R-CHIP	22.1 ohm, 1 %, 1/10 W, DA, TP, 160 8
2203-000206	C146, C147 C3, C5, C7-C30, C32, C34, C36 C37, C39, C40, C53, C65-C68 C76, C79, C84, C86 C87, C105-C118, C120-C128, C141, C142	69	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, 2012
2203-000236	C137-139	3	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 1608
2203-000998	C90-C104, C143-C145	18	C-CER, CHIP	0.047 nF, 5 %, 50 V, C0G, TP, 1608
2203-001408	C130, C131	2	C-CER, CHIP	0.27 nF, 5 %, 50 V, NP0, TP, 1608
2203-003027	C129	1	C-CER, CHIP	0.82 nF, 5 %, 50 V, NP0, TP, 1608

Part No	Reference	Q'tt	Part Name	Specification
2404-001037	C2, C4, C31, C33, C35, C44, C54 C78, C88, C140	10	C-TA, CHIP	10 uF, 10 %, 16 V, TP, 3528
2409-001034	C45	1	C-EDL	1000000 uF, 5.5 V, BK, 21.6X9 mm, 5
2804-001107	Y1	1	OSCILLATOR-CLOCK	2.4576 MHz, 100ppm, 10TTL, TP, 5 V, 4
2804-001245	Y2	1	OSCILLATOR-CLOCK	10 MHz, 50ppm, 10TTL & CMOS, TP, 3.
2804-001247	Y3	1	OSCILLATOR-CLOCK	25 MHz, 50PPM, 10TTL & CMOS, TP, 3.3 V
3301-001026	B1, B2, B16, B21, B23, B25, B29, B30	8	BEAD-SMD	26 ohm, 3216, 1500 mA, TP, 15000 oh m
3301-001308	B3, B4, B7-B11, B20, B27, B28	10	BEAD-SMD	10 ohm, 1608, 500 mA, TP, 0.15 ohm
3404-001008	SW1	1	SWITCH-TACT	15 V, 50 MA, 160GF, 6X6X5 mm, SPS T
3408-000230	S2	1	SWITCH-SLIDE	30 V DC, 200 mA, DPDT, ANGLE SHAPE
3701-000215	P3	1	CONNECTOR-DSUB	9P, 2R, FEMALE, ANGLE, AUF
3703-000192	P1	1	CONNECTOR-BACK PANEL	64P, 2R, MALE, ANGLE, AUF
3711-003272	P5	1	CONNECTOR-HEADER	BOX, 10P, 2R, 2.54 mm, STRAIGHT, AU
3722-001673	P2	1	JACK-MODULAR	8P/8C, STANDARD, N, ANGLE, STANDARD, N, BLK, AU30U
4709-001023	U35	1	TRANSCEIVER	100BASE-TX, ATM 155Mbs, TP-FDDI
GA41-00096A	REV.02	1	PCB-MEM 4	IDCS 70, FR4, 4L, 1.6T, 200X92 mm, 2 ARRAYS
GA61-10503A	EJECTOR	1	EJECTOR-DCS	DCS, PAUL94-V0, NTR

4.10 MEM 3 Card

Part No	Reference	Q'tt	Part Name	Specification
0402-000165	D1-D3	3	DIODE-RECTIFIER	1N5819, 40 V, 1A, DO-41, TP
0601-001034	LED1	1	LED	ROUND, RED, 5mm, 700 nm
0801-000388	U13	1	IC-CMOS LOGIC	74HC08, AND GATE, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
0801-000455	U7	1	IC-CMOS LOGIC	74HC74, D FLIP-FLOP, SOP, 14P, 8.7X3.9 mm, DUAL, TP, 2.0/6.0 V, 0.26 V, -40TO+85C, 180 MW, 4.
0801-000642	U11	1	IC-CMOS LOGIC	74HC138, 3-TO-8 DECODER, SOP, 16, 150 mil, SINGLE, TP, 2.0/6.0 V
0909-000105	U12	1	IC-REAL TIME CLOCK	RTC72423, 4 bit, SOP, 24P, 16.3X7.9 mm, 32.768kHz, ST, CMOS, PLASTIC, 5 V, -40TO+85C4B
1106-000243	U2, U9	2	IC-SRAM	6X4008, 512KX8 bit, SOP, 32P, 450 mil, 70 nS, 5 V, 10 %, PLASTIC, 0TO+70C, 20 uA, CMOS, ST
1202-000138	U10	1	IC-VOLTAGE COMP.	1232, DIP, 8P, 300 mil, SINGLE, 0 V,
2007-000286	R3, R8, R9	3	R-CHIP	100 ohm, 1 %, 1/8 W, TP, 2012
2007-000297	R2, R7	2	R-CHIP	10 kohm, 1 %, 1/8 W, TP, 2012
2007-000721	R6	1	R-CHIP	300 kohm, 1 %, 1/8 W, TP, 2012
2007-000762	R1	1	R-CHIP	330 ohm, 1 %, 1/8 W, DA, TP, 2012
2203-000206	C1-C8, C11, C12, C15-C18	14	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, 2012
2402-000204	C10, C14	2	C-AL, SMD	10 uF, 20 %, 16 V, WT, TP, 4.3X4.3X5.4
2409-001034	BT1	1	C-EDL	1000000 uF, 5.5 V, BK, 21.6X9 mm, 5
3404-000113	SW1	1	SWITCH-TACT	12 V, 50 MA, 160GF, 6X6X3.6 mm, SPST
3408-000230	SW2	1	SWITCH-SLIDE	30 V DC, 200 mA, DPDT, ANGLE SHAPE
3703-000192	P1	1	CONNECTOR-BACK PANEL	64P, 2R, MALE, ANGLE, AUF
3704-000255	U3-U6, U14, U15	6	SOCKET-IC	32P, DIP, SN, 2.54 mm
GA41-00095A	PCB	1	PCB-MEM 3	IDCS 70, FR4, 4L, 01, 1.6T, 200X92 mm, 2 ARRAYS

Part No	Reference	Q'tt	Part Name	Specification
GA61-10503A	EJECTOR	2	EJECTOR-DCS	DCS, PAUL94-V0, NTR
GA67-30506A	-	1	HOLDER LED-PBA	T8.3, W9.7, L7.5, BLK

4.11 MCP 1 Card

Part No	Reference	Q'tt	Part Name	Specification
0401-001099	D505	1	DIODE-SWITCHING	1N4148WS, 75 V, 150 MA, SOD-323, TP
0402-001056	D500-D504	5	DIODE-RECTIFIER	MBRS140, 40 V, 1A, CASE403A, TP
0601-000005	LED100, LED 101, LED900-LED902	5	LED	SMD, GRN, 3X2 mm, 570 NM, 3X2 mm
0801-002162	U700, U702, U703	3	IC-CMOS LOGIC	74FCT164245, TRANSLATOR, TSSOP, 48, 240 mil, DUAL, ST, 2.7/3.6 V
0802-001029	U802-U804	3	IC-BICMOS LOGIC	74LVTH16245, TRANSCEIVER, TSSOP, 48, 240 mil, DUAL, TP, 2.7/3.6 V
0802-001099	U503, U800, U801	3	IC-BICMOS LOGIC	74LVTH125, BUFFER, TSSOP, 14, 173 mil, QUAD, TP, 2.7/3.6 V
0902-001701	U100	1	IC-MICROPROCESSOR	XPC855T, 50 MHz, 32 bit, BGA, 357P, TR, PLASTIC, 3.3 V, 735 MW, 0TO+95C, 4/4/8KB, 32 bit, ATM/100
0909-000105	U500	1	IC-REAL TIME CLOCK	RTC72423, 4 bit, SOP, 24P, 16.3X7.9 mm, 32.768KHZ, ST, CMOS, PLASTIC, 5 V, -40TO+85C, 4B
1006-001140	U901	1	IC-LINE TRANSCEIVER	3232, SSOP, 16P, 212 mil, DUAL, TP, PLASTIC, 5.5 V, 0to+70C, 571 MW, 2, 2,
1105-001431	U300, U301	2	IC-DRAM	K4S281632D, 4X2MX16 bit, TSOP(II), 54P, 400 mil, 7.5 nS, 3.3 V, 10 %, PLASTIC, -55TO+150C, 1 MA,
1106-001136	U601	1	IC-SRAM	7C136, 2KX8 bit, QFP, 52P, 10X10 mm, 55 nS, 5 V, 10 %, PLASTIC, 0TO+70C, 15 MA, CMOS, TR
1106-001428	U302, U600	2	IC-SRAM	K6F8016U6, 512KX16 bit, TBGA, 48P, 7X6 mm, 70 nS, 3 V, 10 %, PLASTIC, -40TO+85C, 0.5 uA, CMOS, TR
1107-001118	U401	1	IC-FLASH MEMORY	29LV040, 512Kx8, PLCC, 32P, 11.4x13.9mm, 2.7/3.6 V, 0to+70C
1107-001473	U400	1	IC-FLASH MEMORY	9F2808U0C, 16Mx8, TSOP, 48P, 18.4x12.4mm, 2.7/3.6 V, 0to+70C
1203-001549	U501	1	IC-POSI.FIXED REG.	1585, DD, 3P, PLASTIC, 3.235/3.3
1203-001643	U502	1	IC-RESET	DS1706, SOIC, 8P, 150 mil, PLASTIC, 40TO+85C, TP
1205-001864	U900	1	IC-TRANSCEIVER	DJLXT972ALC, LQFP, 64P, 393 mil, PLASTIC, 4 V, 0TO+70C, TR

Part No	Reference	Q'tt	Part Name	Specification
1301-001663	U200	1	IC-CPLD	LC4128V-75T128C, TQFP, 128P, 14X14 mm, 7.5 nS, 3.3 V, 10 %, 0TO+90C, 92, 92, 4, 333 MHz, 3.47
2007-000043	R110, R132, R135, R503, R511-R513	7	R-CHIP	1 kohm, 1 %, 1/10 W, TP, 1608
2007-000043	R519, R600, R918, R923, R924	5	R-CHIP	1 kohm, 1 %, 1/10 W, TP, 1608
2007-000052	R105, R113, R124, R125, R128, R130 R131, R136, R138, R201-R203, R210 R212-R215, R220, R221, R223, R225 R231, R800, R801, R917 R300, R301, R505, R507-R509, R514 R515, R517, R520, R602-R604	38	R-CHIP	10 kohm, 1 %, 1/10 W, TP, 1608
2007-000070	R303, R305, R933-R936	6	R-CHIP	0 ohm, 5 %, 1/10 W, TP, 1608
2007-000287	R502, R506	2	R-CHIP	100 ohm, 1 %, 1/10 W, DA, TP, 1608
2007-000475	R504	1	R-CHIP	1 Mohm, 1 %, 1/10 W, TP, 1608
2007-000669	R601	1	R-CHIP	2 kohm, 1 %, 1/10 W, TP, 1608
2007-001164	R913, R930	2	R-CHIP	75 ohm, 1 %, 1/10 W, TP, 1608
2007-007049	R921	1	R-CHIP	22.1 kohm, 1 %, 1/10 W, TP, 1608
2007-007226	R101-R104, R111, R112, R114-R118 R120-R123, R127, R133, R134, R137 R140, R145, R204-R209	27	R-CHIP	49.9 ohm, 1 %, 1/10 W, TP, 1608

Part No	Reference	Q'tt	Part Name	Specification
2007-007226	R211, R216, R217, R219, R222, R224 R226, R811, R812 R230, R530, R922, R925, R926 R232, R233, R610, R611 R900-R912, R914-R916, R919, R920	36	R-CHIP	49.9 ohm, 1 %, 1/10 W, TP, 1608
2007-007454	R200	1	R-CHIP	332 ohm, 1 %, 1/10 W, TP, 1608
2007-007507	R802, R803, R805, R710	4	R-CHIP	2.74 kohm, 1 %, 1/10 W, TP, 1608
2007-008122	R500, R501	2	R-CHIP	22.1 ohm, 1 %, 1/10 W, DA, TP, 160 8
2011-000664	RA400, RA401 RA803, RA806, RA808, RA811	6	R-NET	2.7 kohm, 5 %, 1/16 W, L, CHIP, 8P, TP, 3.2x1.6x0.5 mm
2011-000881	RA103, RA105	2	R-NET	33 ohm, 5 %, 1/16 W, L, CHIP, 8P, TP, 3.2x1.6x0.5mm
2011-001011	RA109, RA120, RA121, RA200, RA201 RA204, RA205, RA207	8	R-NET	10 kohm, 5 %, 1/16 W, L, CHIP, 8P, TP, 3.2x1.6x0.5mm
2011-001194	RA101, RA102, RA104, RA106-RA108	6	R-NET	51 ohm, 5 %, 1/16 W, L, CHIP, 8P, TP
2011-001194	RA110-RA119, RA203, RA206 RA208-RA210 RA700-RA710	26	R-NET	51 ohm, 5 %, 1/16 W, L, CHIP, 8P, TP
2203-000236	C212, C610-C613, C616-C620, C703-C710	18	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 1608

Part No	Reference	Q'tt	Part Name	Specification
2203-000236	C720-C759, C820, C821	42	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 1608
2203-000257	C511-C513, C907 C922	5	C-CER, CHIP	10 nF, 10 %, 50 V, X7R, TP, 1608
2203-000838	C100	1	C-CER, CHIP	0.39 nF, 5 %, 50 V, C0G, TP, 1608
2203-000998	C501, C923	2	C-CER, CHIP	0.047 nF, 5 %, 50 V, C0G, TP, 1608
2203-001408	C904, C905	2	C-CER, CHIP	0.27 nF, 5 %, 50 V, NP0, TP, 1608
2203-005249	C101-C129, C200-C211, C300-C307 C400-C402, C500, C502, C503, C508 C509, C514-C517, C600-C602, C621 C701, C702, C713-C717, C802-C815 C711, C900-C903, C906, C909-C913	97	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, TP, 1608
2203-005457	C908, C921	2	C-CER, CHIP	1 nF, 10 %, 2KV, X7R, TP, 4520
2404-001037	C504, C712	2	C-TA, CHIP	10 uF, 10 %, 16 V, TP, 3528
2404-001074	C506	1	C-TA, CHIP	10 uF, 10 %, 10 V, GP, TP, 3216
2404-001289	C507	1	C-TA, CHIP	47 uF, 10 %, 10 V, GP, TP, 3528
2409-001034	C505	1	C-EDL	1000000 uF, 5.5 V, BK, 21.6X9 mm, 5
2601-001056	T900	1	TRANS-SMD, PULSE	350 uH, 1:1, 1:1, 12.7X6.73X5.97 mm, TP
2702-001112	L500, L911	2	INDUCTOR-RADIAL	60uH, 35 %, 7.5x8.0mm
2804-001325	Y500	1	OSCILLATOR-CLOCK	50 MHz, 50PPM, 10 TTL & CMOS, TP, 3.3 V, 40 MA
3301-001120	L200, L400, L700-L705, L800-L803	12	BEAD-SMD	30 ohm, 2x1.25x0.85mm, 3000 mA, TP, 0.015 ohm
3301-001308	L501	1	BEAD-SMD	10 ohm, 1608, 500 mA, TP, 0.15 oh m

Part No	Reference	Q'tt	Part Name	Specification
3404-001008	S501	1	SWITCH-TACT	15 V, 50 MA, 160GF, 6X6X5 mm, SPST
3408-000230	S500	1	SWITCH-SLIDE	30 V DC, 200 mA, DPDT, ANGLE SHAPE
3701-000215	P901	1	CONNECTOR-DSUB	9P, 2R, FEMALE, ANGLE, AUF
3703-000192	P700	1	CONNECTOR-BACK PANEL	64P, 2R, MALE, ANGLE, AUF
3704-000249	U401	1	SOCKET-IC	32P, PLCC, SN, 1.27mm
3711-001465	P902	1	CONNECTOR-HEADER	NOWALL, 3P, 1R, 2.54mm, STRAIGHT, A
3711-003272	P200, P500	2	CONNECTOR-HEADER	BOX, 10P, 2R, 2.54mm, STRAIGHT, AU
3711-005596	J800	1	CONNECTOR-HEADER	BOX, 3P, 1R, 2 mm, SMD-A, SN/CU, NTR
3722-001673	P900	1	JACK-MODULAR	8P/8C, STANDARD, N, ANGLE, STANDARD, N, BLK, AU30U
GA41-00169A	PCS.02	1	PCB SUB-MCP 1	OFFICESERV 100, FR4, 4L, 01, 1.6T, 200X102 mm, 2
GA61-10503A	-	1	EJECTOR-DCS	DCS, PAUL94-V0, NTR

4.12 8 SLI Card

Part No	Reference	Q'tt	Part Name	Specification
2003-000155	R230	1	R-METAL OXIDE	10 ohm, 2 %, 2 W, AA, TP, 6x16 mm
2003-000265	R211	1	R-METAL OXIDE	300 ohm, 5 %, 2 W, AA, TP, 6x16 mm
2011-001099	HYB 1, 2	2	R-NET	300 ohm, 5 %, 2 W, X, ARRAY, 10P, BK
2401-001661	C90	1	C-AL	68 uF, 20 %, 100 V, GP, TP, 10x16, 5
3501-000222	RL1-RL8	8	RELAY-MINIATURE	5 V, 140 MW, 1000 MA, 2FORMC, 2MS, 1MS
3703-000124	P2	1	CONNECTOR-BACK PANEL	20P, 2R, MALE, ANGLE, AUF
3703-000179	P1	1	CONNECTOR-BACK PANEL	50P, 2R, MALE, ANGLE, AUF
3703-000271	P3	1	CONNECTOR-BACK PANEL	10P, 2R, MALE, STRAIGHT, AUF
EC26-20501A	T1-8	8	TRANS AF	INFOREX, 800 mH
GA13-10569A	HYB3, 4	2	IC HYBRID	TARGET, KP0073SA, SIP, 20P
GA61-10503A	EJECTOR	2	EJECTOR-DCS	DCS, PAUL94-V0, NTR,
GA94-01248A	PRA	1	PRA AUTO-P 8 SLI	COMP PLUS P-8 SLI AU, SECURICOR,
0401-000133	D25-D40	16	DIODE-SWITCHING	RLS4148, 75 V, 150 MA, LL-34, TP
0403-000308	ZD1-16	16	DIODE-ZENER	RLZ3.6 A, 3.455-3.695 V, 500 MW, LL-34, TP
0501-000476	Q25-32	8	TR-SMALL SIGNAL	KST5401TA, PNP, 350 MW, SOT-23, TP, 60-240
0501-000477	Q17-24, Q33-56 Q66	33	TR-SMALL SIGNAL	MMBT5550, NPN, 300 MW, SOT-23, TP, 20-250
0503-001005	Q9-Q16	8	TR-DARLINGTON	MPSA77, PNP, 0.625 W, TO-92, TP, 10000
0503-001006	Q1-Q8	8	TR-DARLINGTON	MPSA27, NPN, 0.625 W, TO-92, TP, 10000
0801-000702	U2, U3	2	IC-CMOS LOGIC	74HC125, BUFFER, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
1205-000394	U4-11	8	IC-CODEC FILTER	TP3057WM, SOP, 16P, PLASTIC, 5.2
1405-000130	VA1-VA8	8	VARISTOR	270 V, 1200A, 9x4.6mm, TP
2003-001032	R9-R16, R49-R56	16	R-METAL OXIDE(S)	220 ohm, 5 %, 1 W, AF, TP, 2.5x6.5 mm

Part No	Reference	Q'tt	Part Name	Specification
2003-002037	R25-R32	8	R-METAL OXIDE(S)	270 ohm, 5 %, 2 W, AF, TP, 3.9x10 mm
2007-000011	R1-R8, R65-R72	16	R-CHIP	200 ohm, 1 %, 1/8 W, TP, 2012
2007-000277	R157	1	R-CHIP	100 kohm, 1 %, 1/8 W, TP, 2012
2007-000286	R159-177 R179-183	24	R-CHIP	100 ohm, 1 %, 1/8 W, TP, 2012
2007-000297	R129-136, R145-152 R221 R41-48, R97-104	33	R-CHIP	10 kohm, 1 %, 1/8 W, TP, 2012
2007-000465	R105-112, 153	9	R-CHIP	1 kohm, 1 %, 1/8 W, TP, 2012
2007-000474	R158	1	R-CHIP	1 Mohm, 1 %, 1/8 W, TP, 2012
2007-000490	R155, 156, 178	3	R-CHIP	2.2 kohm, 1 %, 1/8 W, TP, 2012
2007-000543	R213-220 R33-40, R81-88	24	R-CHIP	20 kohm, 1 %, 1/8 W, TP, 2012
2007-000668	R222-229	8	R-CHIP	2 kohm, 1 %, 1/8 W, TP, 2012
2007-000735	R113-128	16	R-CHIP	30 kohm, 1 %, 1/8 W, TP, 2012
2007-000868	R73-80, R89-96	16	R-CHIP	4.7 kohm, 1 %, 1/8 W, TP, 2012
2007-001037	R17-24, R57-64	16	R-CHIP	56 kohm, 1 %, 1/8 W, TP, 2012
2203-000206	C100-104 C66, 67, 69, 70, 72, 73 C76, 77, 79, 80, 82, 83 C85-88, 91, 92, 94, 96	25	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, 2012
2203-000239	C97	1	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 2012
2203-000260	C89, C99	2	C-CER, CHIP	10 nF,10 %, 50 V, X7R, TP, 2012
2305-001043	C1-8, C41-48	16	C-FILM, LEAD-PEF	3.3 nF, 10 %, 400 V, TP, 10x4x13.5, 5
2401-000385	C25-40	16	C-AL	10 uF, 20 %, 100 V, GP, TP, 6.3x11, 5
2402-000117	C49-56	8	C-AL, SMD	10 uF, 20 %, 35 V, GP, TP, 5.3x5.3x5.4
2402-000130	C57-64	8	C-AL, SMD	2.2 uF, 20 %, 50 V, GP, TP, 4.3x4.3x5.
2402-000170	C17-C24, C65, C68, C71	11	C-AL, SMD	1 uF, 20 %, 50 V, GP, TP, 4.3x4.3x5.4,

Part No	Reference	Q'tt	Part Name	Specification
2402-000170	C74, 75, 78, 81, 84	5	C-AL, SMD	1 uF, 20 %, 50 V, GP, TP, 4.3x4.3x5.4,
2402-000204	C93, 95	2	C-AL, SMD	10 uF, 20 %, 16 V, WT, TP, 4.3X4.3X5.4
3301-000344	B1	1	BEAD-RADIAL	200 ohm, 3.5x0.6x6.5mm, 7000 mA, TP, 0.01 ohm
GA13-10066A	U1	1	IC ASIC	DCS, SBS-9401, QFP, 80P
GA41-11016A	REV.04	1	PCB-8 SLI	COMPACT PLUS, FR-4, 2L, 1.6T, 300X
JC39-40400A	JP1	1	CBF HARNESS	52 mm, AWG22(0.6PI)

4.13 8 DLI Card

Part No	Reference	Q'tt	Part Name	Specification
3703-000124	P2	1	CONNECTOR-BACK PANEL	20P, 2R, MALE, ANGLE, AUF
3703-000179	P1	1	CONNECTOR-BACK PANEL	50P, 2R, MALE, ANGLE, AUF
GA26-10053A	T1-T8	8	TRANS PULSE	DGP 360, 144/72.5/72T, 5mH
GA61-10503A	EJECTOR	2	EJECTOR-DCS	DCS, PAUL94-V0, NTR
0403-000308	ZD1-ZD16	16	DIODE-ZENER	RLZ3.6A, 3.455-3.695 V, 500 MW, LL-34, TP
0801-000388	U6	1	IC-CMOS LOGIC	74HC08, AND GATE, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
0801-000702	U4, U5	2	IC-CMOS LOGIC	74HC125, BUFFER, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
1404-000126	PS1-PS8	8	THERMISTOR-PTC	4.85 ohm, 60 V, 5mm
1405-000171	VAR1-16	16	VARISTOR	82 V, 1200A, 9x6mm, TP
2007-000277	R19, R11, R9	3	R-CHIP	100 kohm, 1 %, 1/8 W, TP, 2012
2007-000286	R1-R8, R18, R21-R27 R29-R39, R41, R42 R44-R51	37	R-CHIP	100 ohm, 1 %, 1/8 W, TP, 2012
2007-000297	R16, 17, 179	3	R-CHIP	10 kohm, 1 %, 1/8 W, TP, 2012
2007-000474	R20 R40, 43	3	R-CHIP	1 Mohm, 1 %, 1/8 W, TP, 2012
2007-000490	R14, R15	2	R-CHIP	2.2 kohm, 1 %, 1/8 W, TP, 2012
2007-000868	R10, R12	2	R-CHIP	4.7 kohm, 1 %, 1/8 W, TP, 2012
2007-000928	R13	1	R-CHIP	470 ohm, 1 %, 1/8 W, TP, 2012
2203-000206	C17-C24, C36, C42, C43	11	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, 2012
2203-000239	C33, 35 C34	3	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 2012
2203-000260	BC2-BC6, BC11-BC14 C37-C39	12	C-CER, CHIP	10 nF, 10 %, 50 V, X7R, TP, 2012
2203-000476	C1-C16	16	C-CER, CHIP	1000 nF, +80-20 %, 16 V, Y5 V, 2012
2203-001002	C44, 45	2	C-CER, CHIP	0.047 nF, 5 %, 50 V, C0G, TP, 2012

Part No	Reference	Q'tt	Part Name	Specification
2305-000587	C25-32	8	C-FILM, LEAD-PEF	470 nF, 10 %, 63 V, BK, 7.2x4.5x9.5, 5
2401-000028	C40	1	C-AL	10 uF, 20 %, 50 V, GP, TP, 5x11, 5
2401-000373	C41	1	C-AL	100 uF, 20 %, 63 V, GP, TP, 10x12.5mm, 5
3301-000344	B1	1	BEAD-RADIAL	200 ohm, 3.5x0.6x6.5 mm, 7000 mA, TP, 0.01 ohm
EN13-10502A	U2, U3	2	IC ASIC	DECT, TP3404, PLCC, 28P
EN13-10503A	U1	1	IC ASIC	DECT, STI-9511, QFP, 60P
GA41-11017B	REV.01	1	PCB-8 DLI, 4L	COMPACT II, FR-4, 4L, 1.6T, 300X19

4.14 008 Base Board

Part No	Reference	Q'tt	Part Name	Specification
6902-000402	-	1	BAG PE	LDPE, T0.03, W800, L900, TRP, 8, 5
EJ69-90001A	-	1	SILICAGEL	LRS, SIO2, W60, L85, 20G,
GA68-00178A	PCMMC ADMIN. GUIDE	1	MANUAL USERS-USER (IDCS)	IDCS, CMMC, STUK, ENG, STUK, MOJO, W210, L297, 01
GA68-00179A	SYSTEM ADMIN. GUIDE	1	MANUAL SERVICE-SVC (IDCS)	IDCS, STUK, ENG, UK, ART, W210, L297, 0A, SERVICE
GA68-11480C	-	1	LABEL(P)-MOUNTING TEMPLATE_A	IDCS100, STA, MOJO, T0.1, W537.2, L484.4, BLK, WHT
GA69-11239A	-	1	BOX(P)-UNIT KSU	COMPACT PLUS, SC2, A-1, H245, W560, L455
GA69-20665A	-	1	CUSHION-TOP (BASIC)	KOR, CORRUPAD, W546, L451, H114,
GA69-20666A	-	1	CUSHION-BOTTOM(BAS	KOR, CORRUPAD, W546, L451, H114,
GA70-10733A	-	1	IPR-UPPER (BASIC)	COMPACT PLUS, SECC, T1.0, W315.4, PASS, L464.2
GA72-00098B	NAME PLATE	1	PPR-NAME LABEL(IDCS70)	IDCS70, PC , SSB 01, T0.3, PC-1023, UL94-VO
GA73-30002A	-	2	RCT-PAD A PBA	DCS824, CR , 64X27XT20, 50HB, BLK
GA92-02126B	-	1	PBA MAIN-008BASE	IDCS 70, STUK, UK, 008BASE, 298X 240, 008BASE
0401-000133	D4, D8-D11	5	DIODE-SWITCHING	RLS4148, 75 V, 150 MA, LL-34, TP
6902-000402	-	1	BAG PE	LDPE, T0.03, W800, L900, TRP, 8, 5
0401-000198	C2	1	DIODE-SWITCHING	1N4148, 100 V, 200 MA, DO-35, BK
0402-000165	D36	1	DIODE-RECTIFIER	1N5819, 40 V, 1 A, DO-41, TP
0402-000463	D37	1	DIODE-RECTIFIER	RLR4004, 400 V, 0.8 A, LL-41, TP
0403-000308	ZD17-ZD19, ZD23, ZD26, ZD27, ZD30 ZD31, ZD33-ZD35	11	DIODE-ZENER	RLZ3.6A, 3.455-3.695 V, 500 MW, LL-34, TP

Part No	Reference	Q'tt	Part Name	Specification
0403-000308	ZD5, ZD10, ZD11, ZD14, ZD15	5	DIODE-ZENER	RLZ3.6A, 3.455-3.695 V, 500 MW, LL-34, TP
0501-000476	Q3	1	TR-SMALL SIGNAL	KST5401TA, PNP, 350 MW, SOT-23, TP, 60-240
0501-000477	Q1, Q4	2	TR-SMALL SIGNAL	MMBT5550, NPN, 300 MW, SOT-23, TP, 20-250
0801-000388	U12, U13, U30, U31, U38	5	IC-CMOS LOGIC	74HC08, AND GATE, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
0801-000397	U23, U39	2	IC-CMOS LOGIC	74HC04, INVERTER, SOP, 14, 150 mil, HEX, TP, 2.0/6.0 V
0801-000411	U11, U16-U18, U26	5	IC-CMOS LOGIC	74HC32, OR GATE, SOP, 14, 150 mil, QUAD, 2.0/6.0 V
0801-000455	U37	1	IC-CMOS LOGIC	74HC74, D FLIP-FLOP, SOP, 14P, 8.7X3.9 mm, DUAL, TP, 2.0/6.0 V, 0.26 V, -40TO+85C, 180 MW, 4
0801-000633	U27	1	IC-CMOS LOGIC	74HC164, SHIFT REGISTER, SOP, 14, 150 mil, SINGLE, TP, 2.0/6.0 V
0801-000642	U35	1	IC-CMOS LOGIC	74HC138, 3-TO-8 DECODER, SOP, 16, 150 mil, SINGLE, TP, 2.0/6.0 V
0801-000671	U32	1	IC-CMOS LOGIC	74HC148, PRIORITY ENCODER, SOP, 16, 150 mil, SINGLE, TP, 2.0/6.0 V
0801-000696	U15	1	IC-CMOS LOGIC	74HC245, TRANSCEIVER, SOP, 20, 300 mil, OCTAL, TP, 2.0/6.0 V
0801-000702	U5, U6, U9, U40	4	IC-CMOS LOGIC	74HC125, BUFFER, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
0801-000716	U14, U19, U20, U29	4	IC-CMOS LOGIC	74HC541, BUFFER/DRIVER, SOP, 20, 300 mil, OCTAL, TP, 2.0/6.0 V
0801-000823	U33	1	IC-CMOS LOGIC	74HC4051, MULTIPLEXER, SOP, 16, 150 mil, TP, 2.0/6.0 V
0801-000824	U34	1	IC-CMOS LOGIC	74HC4053, MULTIPLEXER, SOP, 16, 150 mil, TP, 2.0/6.0 V
0801-000945	U25	1	IC-CMOS LOGIC	74HC244, BUFFER/DRIVER, SOP, 20, 300 mil, OCTAL, ST, 2.0/6.0 V
0803-000842	U24	1	IC-TTL	74LS09, AND GATE, SOP, 14, 150 mil, QUAD, TP, 4.75/5.25 V

Part No	Reference	Q'tt	Part Name	Specification
0902-000314	U22	1	IC-MICROPROCESSOR	MC68EC000, 16 MHz, 16 bit, PLCC, 68P, ST, PLASTIC, 5 V, 260 MW, 0TO+70C, 24 bit,
1201-000197	U1, U28, U36	3	IC-OP AMP	MC34072, SOP, TP, 8P, 150 mil, DUAL, 100V/MV, PLASTIC, 44 V, 0TO+70C, 97DB, 13V/US, 6NA, 500N
1203-000404	U21	1	IC-DC/DC CONVERTER	34063, SOP, 8P, 150 mil, PLASTIC, 1.0/1.3 V, 0TO+70C, 4.0 MA, ST
1204-002075	Q2	1	IC-MELODY	M994T-05L, TO-92, 3P, 4.6X4.6 mm, PLASTIC, 3.5 V, 1.2 W, 0TO+60C, TP, SWEET HOME
1205-000394	U8	1	IC-CODEC FILTER	TP3057WM, SOP, 16P, PLASTIC, 5.2
1404-000126	PS1-PS8	8	THERMISTOR-PTC	4.85 ohm, 60 V, 5mm
1405-000171	VR1-VR16	16	VARISTOR	82 V, 1200A, 9x6mm, TP
2001-000874	R289	1	R-CARBON	6.2 kohm, 2 %, 1/4 W, AA, TP, 2.4X6.4 mm
2001-000884	R288	1	R-CARBON	6.8 kohm, 2 %, 1/4 W, AA, TP, 2.4X6.4 mm
2003-000201	R290	1	R-METAL OXIDE	2.2 kohm, 5 %, 1 W, AA, TP, 4.3x12mm
2007-000040	C86	1	R-CHIP	150 ohm, 1 %, 1/10 W, TP, 1608
2007-000041	R39	1	R-CHIP	475 ohm, 1 %, 1/10 W, TP, 1608
2007-000043	R134-R136, R138, R169, R170 R175, R178, R181, R294 R49, R62-R65, R103, R130	17	R-CHIP	1 kohm, 1 %, 1/10 W, TP, 1608
2007-000052	R2, R6, R24-R27, R33, C1 R220-R222, R238-R240 R247-R249, R254, R265-R272	26	R-CHIP	10 kohm, 1 %, 1/10 W, TP, 1608

Part No	Reference	Q'tt	Part Name	Specification
2001-000884	R288	1	R-CARBON	6.8 kohm, 2 %, 1/4 W, AA, TP, 2.4X6.4 mm
2007-000052	R274, R275, R277, R291-R293, R295 R66, R67, R69, R70, R79, R80 R83, R89, R98, R133, R218	18	R-CHIP	10 kohm, 1 %, 1/10 W, TP, 1608
2007-000060	R18, R46, R241-R244, R281	7	R-CHIP	100 kohm, 1 %, 1/10 W, TP, 1608
2007-000070	R155, R158, R161, R163, R227-R229 R232-R234, R250 R34, R37, R146-R148, R150, R151, R153	19	R-CHIP	0 ohm, 5 %, 1/10 W, TP, 1608
2007-000287	R100, R104-R106, R108, R109 R111-R113, R117, R123-R129 R132, R137, R139-R145, R149, R152 R154, R156, R157, R160, R167, R173 R159, R162, R164-R166 R168, R172, R174 R180, R185 R179, R182-R184, R186, R188 R187, R189, R192, R196, R203, R209	56	R-CHIP	100 ohm, 1 %, 1/10 W, DA, TP, 1608

Part No	Reference	Q'tt	Part Name	Specification
2007-000287	R190, R191, R193-R195, R197-R202 R204-R208, R210-R217 R223-R226, R230, R231, R235-R237 R245, R246, R252, R253, R255, R256 R258-R264, R276, R278-R280, R296 R3, R7-R10, R12, 20-R23, R45 R53, R55, R57, 58, R61, R68 R71, R73, R74, 78, R81, R82 R84, R85, R88, 90-R92, R94-R97	84	R-CHIP	100 ohm, 1 %, 1/10 W, DA, TP, 1608
2007-002901	R40, R41	2	R-CHIP	12.1 kohm, 1 %, 1/10 W, TP, 1608
2007-002906	R15	1	R-CHIP	200 kohm, 1 %, 1/10 W, TP, 1608
2007-002910	R19	1	R-CHIP	30.1 kohm, 1 %, 1/10 W, TP, 1608
2007-002916	R282, R283	2	R-CHIP	475 kohm, 1 %, 1/10 W, TP, 1608
2007-002918	R4	1	R-CHIP	51.1 kohm, 1 %, 1/10 W, TP, 1608
2007-002987	R28-R31, R286	5	R-CHIP	4.75 kohm, 1 %, 1/10 W, TP, 1608
2007-002991	R16	1	R-CHIP	61.9 kohm, 1 %, 1/10 W, TP, 1608
2007-007049	R1, R285	2	R-CHIP	22.1 kohm, 1 %, 1/10 W, TP, 1608
2007-007237	R47	1	R-CHIP	24.3 kohm, 1 %, 1/10 W, TP, 1608
2007-007443	R171	1	R-CHIP	3.01 kohm, 1 %, 1/10 W, TP, 1608
2007-007796	R119, R121	2	R-CHIP	2.21 kohm, 1 %, 1/10 W, TP, 1608

Part No	Reference	Q'tt	Part Name	Specification
2007-007796	R32, R35, R42-R44, R50-R52 R54, R56, R59, R60, R72, R75 R77, R87, R93, R99, R101, R115	20	R-CHIP	2.21 kohm, 1 %, 1/10 W, TP, 1608
2007-007992	R176, R177, R273	3	R-CHIP	1 ohm, 1 %, 1/10 W, TP, 1608
2007-008102	R11, R14	2	R-CHIP	357 ohm, 1 %, 1/10 W, TP, 1608
2007-008223	R48	1	R-CHIP	39.2 kohm, 1 %, 1/10 W, TP, 1608
2007-008224	R17	1	R-CHIP	43.2 kohm, 1 %, 1/10 W, TP, 1608
2007-008225	R13	1	R-CHIP	226 kohm, 1 %, 1/10 W, TP, 1608
2007-008229	R284, R287	2	R-CHIP	274 kohm, 1 %, 1/10 W, TP, 1608
2203-000236	C51, C53, C56, C57, C61, C63, C64 C74-C76, C80, C82, C90	13	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 1608
2203-000257	C43, C52, C67, C87	4	C-CER, CHIP	10nF, 10 %, 50 V, X7R, TP, 1608
2203-000357	C54	1	C-CER, CHIP	0.15 nF, 5 %, 50 V, C0G, TP, 1608
2203-000783	C109	1	C-CER, CHIP	0.33 nF, 5 %, 50 V, C0G, TP, 1608
2203-000815	C58, C62, C93, C94	4	C-CER, CHIP	0.033 nF, 5 %, 50 V, C0G, TP, 1608
2203-000998	BC74-BC81, C97, C98, C107	11	C-CER, CHIP	0.047 nF, 5 %, 50 V, C0G, TP, 1608
2203-001103	C92	1	C-CER, CHIP	6.8 nF, 10 %, 50 V, X7R, TP, 1608
2203-001607	C66	1	C-CER, CHIP	0.22 nF, 5 %, 50 V, NP0, 1608
2203-002793	C26-C28, C30, C31, C33, C34, C36 C7-C9, C11, C12, C14, C15, C17	16	C-CER, CHIP	1000 nF, +80-20 %, 25 V, Y5V, 2012
2203-003027	C19	1	C-CER, CHIP	0.82 nF, 5 %, 50 V, NP0, TP, 1608

Part No	Reference	Q'tt	Part Name	Specification
2203-005249	BC1-BC16, BC18-BC23 BC25-BC59, BC84, BC85 C10, C13, C16, C18, C29, C32 C35, C37, C59, C65, C71-C73 C77-C79, C81, C83-C85 C99-C106	87	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, TP, 1608
2203-005565	BC17, BC24, BC60-BC73 C91	17	C-CER, CHIP	1 nF, 5 %, 50 V, NP0, TP, 1608
2305-000587	C3-C6, C20-C23	8	C-FILM, LEAD-PEF	470 nF, 10 %, 63 V, BK, 7.2x4.5x9.5, 5
2401-000649	C24, C25	2	C-AL	2.2 uF, 20 %, 50 V, BP, TP, 5x11, 5
2401-001661	C69	1	C-AL	68 uF, 20 %, 100 V, GP, TP, 10x16, 5
2402-000170	C39, C40	2	C-AL, SMD	1 uF, 20 %, 50 V, GP, TP, 4.3x4.3x5.4,
2402-000175	C68	1	C-AL, SMD	470 uF, 20 %, 6.3 V, 8.3x8.3x10.
2402-000204	C70	1	C-AL, SMD	10 uF, 20 %, 16 V, WT, TP, 4.3X4.3X5.4
2702-001112	L1, L4-L7	5	INDUCTOR-RADIAL	60uH, 35 %, 7.5x8.0mm
2804-000145	X1	1	OSCILLATOR-CLOCK	16.384 MHz, 30ppm, 10 TTL, ST, 5 V, 1
2901-000177	B4, B13	2	FILTER-EMI ON BOARD	50 V, 1A, 220pF, 7.5x2.5x6.2mm, BK
2901-000188	B5, B6	2	FILTER-EMI ON BOARD	50 V, 1A, 47pF, 7.5x2.5x6.2 mm, TP
3301-000344	B1-B3, L3	4	BEAD-RADIAL	200 ohm, 3.5x0.6x6.5mm, 7000 mA, TP, 0.01 ohm
3501-000217	K1	1	RELAY-MINIATURE	5 V, 150 MW, 1000 MA, 2FORMC, 6MS, 3MS
3702-000172	P1, P2	2	CONNECTOR-RIBBON	50P, MALE, STRAIGHT, AUF

Part No	Reference	Q'tt	Part Name	Specification
3703-000121	P14-P16	3	CONNECTOR-BACK PANEL	20P, 2R, FEMALE, STRAIGHT, AUF
3703-000176	P17-P19	3	CONNECTOR-BACK PANEL	50P, 2R, FEMALE, STRAIGHT, AUF
3703-000184	P3-P5	3	CONNECTOR-BACK PANEL	64P, 2R, FEMALE, STRAIGHT, AUF
3703-000236	P20-P22	3	CONNECTOR-BACK PANEL	10P, 2R, FEMALE, STRAIGHT, AUF
3710-000001	S1	1	CONNECTOR-SHUNT	2P, 1R, STRAIGHT, AUF
3711-000171	P8, P12	2	CONNECTOR-HEADER	1WALL, 2P, 1R, 3.96mm, STRAIGHT, SN
3711-000236	P11	1	CONNECTOR-HEADER	1WALL, 4P, 1R, 3.96mm, STRAIGHT, SN
3711-000240	P7	1	CONNECTOR-HEADER	1WALL, 4P, 1R, 3.96mm, STRAIGHT, SN
3711-001025	P6	1	CONNECTOR-HEADER	BOX, 64P, 2R, 2.54mm, STRAIGHT, AUF
3711-001465	S1	1	CONNECTOR-HEADER	NOWALL, 3P, 1R, 2.54mm, STRAIGHT, A
3711-003455	P9, P10	2	CONNECTOR-HEADER	3WALL, 14P, 1R, 2.5 mm, STRAIGHT, SN
6002-000326	P1A, P1B, P2A, P2B	4	SCREW-TAPPING	PH, +, 2, M3.5, L8, ZPC(YEL), SWRCH18A
EC26-20501A	T1, T6	2	TRANS AF	INFOREX, 800mH
EN13-10502A	U3, U4	2	IC ASIC	DECT, TP3404, PLCC, 28P
GA13-10579A	U10	1	IC ASIC	DCS COMPACT, STC9604, QFP, 208
GA26-10053A	T2-T5, T7-T10	8	TRANS PULSE	DGP 360, 144//72.5/72T, 5mH
GA41-00094A	REV.04	1	PCB-008BASE	IDCS 70, FR4, 4L, 01, 1.6T, 290X240 mm, 1 ARRAY
JF27-20050A	L2	1	COIL AF	KP32, 300UH, 0.35 ohm, 80T
GA92-02413A	-	1	PBA SUB-P_PLL	COMPACT PLUS P-PLL, SECURICOR, E, P_PLL, CONTRACT:GA92-01558A
0402-000165	D2	1	DIODE-RECTIFIER	1N5819, 40 V, 1A, DO-41, TP
2301-000128	C3	1	C-FILM, LEAD-PEF	100nF, 5 %, 50 V, TP, 10X9X4.3X5, 5 mm

Part No	Reference	Q'tt	Part Name	Specification
2806-000138	Y1	1	OSCILLATOR-VCXO	8.192 MHz, 20ppm, 2 TTL, 5 V, 20 mA
3301-000344	B3, B5	2	BEAD-RADIAL	200 ohm, 3.5x0.6x6.5 mm, 7000 m A, TP, 0.01 ohm
3710-001144	P1, P2	2	CONNECTOR-SOCKET	14P, 1R, 2.5 mm, STRAIGHT, NTR
EC27-30514A	L1-3	3	COIL RF	INFOREX, 35UH, 40T
0401-000133	D1	1	DIODE-SWITCHING	RLS4148, 75 V, 150 MA, LL-34, TP
0801-000379	U14	1	IC-CMOS LOGIC	74HC00, NAND GATE, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
0801-000393	U6	1	IC-CMOS LOGIC	74HC86, OR GATE, SOP, 14, 150 mil, QUAD, ST, 2.0/6.0 V
0801-000455	U5, U7	2	IC-CMOS LOGIC	74HC74, D FLIP-FLOP, SOP, 14P, 8.7X 3.9 mm, DUAL, TP, 2.0/6.0 V, 0.26 V, -40TO+85C, 180 MW, 4.
0801-000630	U2, U3	2	IC-CMOS LOGIC	74HC393, BINARY COUNTER, SOP, 14, 150 mil, DUA L, TP, 2.0/6.0 V
0801-000646	U11, U12, U 13	3	IC-CMOS LOGIC	74HC163, BINARY COUNTER, SOP, 16, 150 mil, SINGLE, ST, 2.0/6.0 V
0801-000671	U1	1	IC-CMOS LOGIC	74HC148, PRIORITY ENCODER, SOP, 16, 150 mil, SINGLE, TP, 2.0/6.0 V
0801-000823	U4	1	IC-CMOS LOGIC	74HC4051, MULTIPLEXER, SOP, 1 6, 150 mil, TP, 2.0/6.0 V
0801-000824	U16	1	IC-CMOS LOGIC	74HC4053, MULTIPLEXER, SOP, 1 6, 150 mil, TP, 2.0/6.0 V
1201-000309	U9, U10	2	IC-OP AMP	CA3140, SOP, ST, 8P, 150 mil, SINGLE, 100 V/MV, PLASTIC, 36 V ,180 MW, -55TO+125C, 90DB, 9V/US, 0
1203-000103	U8	1	IC-DC/DC CONVERTER	1109, SOP, 8P, 150 mil, PLASTIC, 1 2 V, 300MV, 0TO+70C, 1200 MA, ST
1203-000404	U15	1	IC-DC/DC CONVERTER	34063, SOP, 8P, 150 mil, PLASTIC, 1.0/1.3 V, 0TO+70C, 4.0 MA, ST
2007-000029	R27, 11	2	R-CHIP	0 ohm, 5 %, 1/8 W, TP, 2012
2007-000218	R2	1	R-CHIP	1.2 kohm, 1 %, 1/8 W, TP, 2012

Part No	Reference	Q'tt	Part Name	Specification
2007-000286	R10, 13, 17-21, 28 R29, 30	10	R-CHIP	100 ohm, 1 %, 1/8 W, TP, 2012
2007-000297	R14, 16, 22-26, 31-33	10	R-CHIP	10 kohm, 1 %, 1/8 W, TP, 2012
2007-000335	R9	1	R-CHIP	120 kohm, 1 %, 1/8 W, TP, 2012
2007-000465	R1	1	R-CHIP	1 kohm, 1 %, 1/8 W, TP, 2012
2007-000474	R4-6	3	R-CHIP	1Mohm, 1 %, 1/8 W, TP, 2012
2007-000483	R35-37	3	R-CHIP	1 ohm, 5 %, 1/8 W, TP, 2012
2007-000735	R7, 8, 15	3	R-CHIP	30 kohm, 1 %, 1/8 W, TP, 2012
2007-001672	R38	1	R-CHIP	8.2 kohm, 1 %, 1/8 W, TP, 2012
2007-001676	R39	1	R-CHIP	910 ohm, 1 %, 1/8 W, TP, 2012
2007-007236	R3	1	R-CHIP	160 kohm, 1 %, 1/8 W, TP, 2012
2203-000206	BC18 C5, 10, 12, 14, BC9, 11	7	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, 2012
2203-000239	C6, 15	2	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 2012
2203-000260	BC1-8, 10, 12-17, 19, 20 C1, 7	19	C-CER, CHIP	10 nF, 10 %, 50 V, X7R, TP, 2012
2203-000476	C4	1	C-CER, CHIP	1000 nF,+80-20 %, 16 V, Y5V, 2012
2203-000595	C11	1	C-CER, CHIP	0.22 nF, 5 %, 50 V, C0G, TP, 2012
2402-000175	C13	1	C-AL, SMD	470 uF, 20 %, 6.3 V, 8.3x8.3x10.
2402-001034	C2	1	C-AL, SMD	22 uF, 20 %, 35 V, GP, TP, 6.6X6.6X5.4
GA41-11020A	PCB	1	PCB-PLL	COMPACT PLUS, FR-4, 2L, 1.6T, 70X8

4.15 6 TRK Card

Part No	Reference	Q'tt	Part Name	Specification
0401-000133	D1-12 D13-18	18	DIODE-SWITCHING	RLS4148, 75 V, 150 MA, LL-34, TP
0402-001047	BD1-6	6	DIODE-BRIDGE	DF04S, 400 V, 1A, SMD-4, ST
0403-000308	ZD19-30	1 2	DIODE-ZENER	RLZ3.6A, 3.455-3.695 V, 500 MW, LL-34, TP
0403-000549	ZD1-12	12	DIODE-ZENER	RLZJ24B, 23.61-24.92 V, 500 MW, LL-34, TP
0406-001014	TVS1-12	12	DIODE-TVS	1.5KE24A, 22.8-25.2 V, 1500 W, DO-2
0501-000477	Q7-Q18	12	TR-SMALL SIGNAL	MMBT5550, NPN, 300 MW, SOT-23, TP, 20-250
0502-000465	Q1-6	6	TR-POWER	KTD2058, NPN, 25000 MW, TO-220IS, ST, 100-200
0604-001002	U11-16	6	PHOTO-COUPLER	TR, 100-600 %, 200 MW, SOP-4, TP
0801-000702	U3, U4	2	IC-CMOS LOGIC	74HC125, BUFFER, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
1205-000394	U5-U10	6	IC-CODEC FILTER	TP3057 WM, SOP, 16P, PLASTIC, 5.2
1405-000138	VA1-18	18	VARISTOR	360 V, 2500A, 17.5x6.7mm, BK
2003-002066	R37-R42	6	R-METAL OXIDE(S)	20 ohm, 5 %, 1 W, AF, TP, 2.5X6.5
2003-002105	R1-6	6	R-METAL OXIDE(S)	10 kohm, 5 %, 1 W, AF, TP, 2.5x6.5 mm
2003-002169	R131, R132, R231, R232, R331, R332 R431, R432, R531, R532, R631, R632	12	R-METAL OXIDE	27 ohm, 5 %, 1 W, AF, TP, 4.3x12 mm
2007-000277	R90	1	R-CHIP	100 kohm, 1 %, 1/8 W, TP, 2012
2007-000286	R107-R112 R133, R233, R333, R433, R533, R633 R64-67, 70-89, 94-97	40	R-CHIP	100 ohm, 1 %, 1/8 W, TP, 2012

Part No	Reference	Q'tt	Part Name	Specification
2007-000297	R19, 21, 23, 25, 27, 29 R57-62	12	R-CHIP	10 kohm, 1 %, 1/8 W, TP, 2012
2007-000307	R119-R130, R401-R406	18	R-CHIP	10 ohm, 1 %, 1/8 W, TP, 2012
2007-000392	R20, 22, 24, 26, 28, 30	6	R-CHIP	150 kohm, 1 %, 1/8 W, TP, 2012
2007-000465	R55, R113-R118	7	R-CHIP	1 kohm, 1 %, 1/8 W, TP, 2012
2007-000474	R91	1	R-CHIP	1Mohm, 1 %, 1/8 W, TP, 2012
2007-000490	R63, 68, 69, R98-100	6	R-CHIP	2.2 kohm, 1 %, 1/8 W, TP, 2012
2007-000716	R92, R93	2	R-CHIP	3.9 ohm, 5 %, 1/8 W, TP, 2012
2007-001067	R31-36	6	R-CHIP	6.8 kohm, 1 %, 1/8 W, TP, 2012
2007-001195	R300-305	6	R-CHIP	820 kohm, 5 %, 1/8 W, TP, 2012
2203-000206	C38, 40-42, 44, 71 C46-48, 50, 51, 53, 54 C59, 61-69, 73	24	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, 2012
2203-000260	C72	1	C-CER, CHIP	10 nF, 10 %, 50 V, X7R, TP, 2012
2203-002793	C7-12	6	C-CER, CHIP	1000 nF, +80-20 %, 25 V, Y5V, 2012
2305-000475	C1-6	6	C-FILM, LEAD-PEF	820 nF, 10 %, 250 V, BK, 26.5x6x15, 2 2
2401-000804	C58, C60	2	C-AL	220 uF, 20 %, 16 V, GP, TP, 8x9 mm, 5
2401-001205	C13-18	6	C-AL	33 uF, 20 %, 63 V, GP, 6.3x11, 2.5 m m
2402-000170	C37, 39, 43, 45, 49, 52	6	C-AL, SMD	1 uF, 20 %, 50 V, GP, TP, 4.3x4.3x5.4
2402-001034	C19-24	6	C-AL, SMD	22 uF, 20 %, 35 V, GP, TP, 6.6X6.6X5.4
3301-000344	B1	1	BEAD-RADIAL	200 ohm, 3.5x0.6x6.5mm, 7000 mA, TP, 0.01 ohm
3501-000217	RL1-8	8	RELAY-MINIATURE	5 V, 150 MW, 1000 MA, 2FORMC, 6MS, 3MS
3703-000124	P2	1	CONNECTOR-BACK PANEL	20P, 2R, MALE, ANGLE, AUF
3703-000179	P1	1	CONNECTOR-BACK PANEL	50P, 2R, MALE, ANGLE, AUF

Part No	Reference	Q'tt	Part Name	Specification
3704-001001	HYB 1-6	6	SOCKET-IC	8P, SIP, SN, 2.54 mm
EC26-20501A	T1-6	6	TRANS AF	INFOREX, 800 mH
EC27-30514A	L7	1	COIL RF	INFOREX, 35 uH, 40T
GA13-00004A	U1, U2	2	IC ASIC-TMC	STL7053E, IDCS500 PREMIUM, 60 PIN, 5 V, QFP, TR
GA13-10567A	HYB7-9	3	IC HYBRID	TARGET, KP0053SA, SIP, 16P
GA41-11014B	REV.03	1	PCB-6 TRK, ITALY	COMPACT PLUS, FR-4, 2L, 1.6T, 300X
GA61-10503A	EJECTOR	2	EJECTOR-DCS	DCS, PAUL94-V0, NTR
JC39-40400A	C25-36	12	CBF HARNESS	52 mm, AWG22(0.6PI)

4.16 4 WLI Card

Part No	Reference	Q'tt	Part Name	Specification
0401-001099	D1, D6-D13	9	DIODE-SWITCHING	1N4148WS, 75 V, 150 MA, SOD-323, TP
0402-001216	D2-D5	4	DIODE-RECTIFIER	MURS120, 200 V, 1 A, TO-220F, TP
0403-001416	ZD1-ZD16	16	DIODE-ZENER	MMSZ5227B, 3.42-3.78 V, 500 MW, SOD-123, TP
0501-000476	Q5-Q8	4	TR-SMALL SIGNAL	KST5401TA, PNP, 350 MW, SOT-23, TP, 60-240
0505-001031	Q1-Q4	4	FET-SILICON	IRF540, N, 100 V, 28 A, 0.077 ohm, 12 5
0601-001064	LED1-LED4	4	LED	SMD, RED/Y-GRN, 1.7X2.5 mm, 660/560NM, 3X2.5X1. 5 mm
0801-002325	U12	1	IC-CMOS LOGIC	74LCX04, INVERTER, TSSOP, 14, 173 mil, HEX, TP, 2.0/3.6 V
0801-002403	U10	1	IC-CMOS LOGIC	74LCX08, AND GATE, TSSOP, 14, 73 mil, QUAD, TP, 2.0/3.6 V
0801-002446	U7, U19	2	IC-CMOS LOGIC	74LCX14, SCHMITT INVERTER, TSSOP, 14, 173 mil, HEX, TP, 2.0/3.6 V
0802-001084	U13, U21	2	IC-BICMOS LOGIC	74ABT125, BUFFER, TSSOP, 14, 173 mil, QUAD, TP, 4.5/5.5 V
0802-001099	U17, U20, U22	3	IC-BICMOS LOGIC	74LVTH125, BUFFER, TSSOP, 14, 173 mil, QUAD, TP, 2.7/3.6 V
0902-000231	U14	1	IC-MICROPROCESSOR	MC68302, 16.67 MHz, 16 bit, QFP, 132P, TR, PLASTIC, 5 V, 525 MW, 0TO+70C, 1.152KB, 24 bit,
1006-001140	U1	1	IC-LINE TRANSCEIVER	3232, SSOP, 16P, 212 mil, DUAL, TP, PLASTIC, 5.5 V, 0to+70C, 571 MW , 2, 2
1106-000353	U11, U16	2	IC-SRAM	6X4008, 512KX8 bit, TSOP(II), 32P, 400 mil, 70 nS, 5 V, 10 %, PLASTIC, 0TO+70C, 20UA, CMOS, ST
1106-001136	U15	1	IC-SRAM	7C136, 2KX8 bit, QFP, 52P, 10X10 mm, 55 nS, 5 V, 10 %, PLASTIC, 0TO+70C, 15 MA, CMOS, TR
1107-001079	U23	1	IC-FLASH MEMORY	29F800, 1Mx8/512Kx16, TSOP, 48P, 1 8.4x12 mm, 4.5/5.5 V, 0to+70C
1203-001631	U3	1	IC-POSI.FIXED REG.	2940, TO-263, 3P, PLASTIC, 3.3 V,

Part No	Reference	Q'tt	Part Name	Specification
1203-001643	U8	1	IC-RESET	DS1706, SOIC, 8P, 150 mil, PLASTIC40TO+85C, TP
1203-002267	U2	1	IC-POSI. FIXED REG.	TO-263-5, 5P, 400 mil, PLASTIC, 1.782/1.818 V, 3 W, -40TO+125C, 1.5A, TP
1204-002210	U9	1	IC-ECHO	ZL50235QCC, LQFP, 100P, 14X14X MM, PLASTIC, 3.6 V, -40TO+85C, TR, 16CH VOICE ECHO-IC
1301-001473	U18	1	IC-CPLD	3064, TQFP, 100P, 16x16mm, 10 nS, 3.3, 10 %
1404-000126	PS1-PS8	8	THERMISTOR-PTC	4.85 ohm, 60 V, 5mm
2007-000041	R4, R5, R13, R14	4	R-CHIP	475 ohm, 1 %, 1/10 W, TP, 1608
2007-000043	R124, R129, R131, R149, R154-R156, R166 R178, R179, R186, R188-R195 R71, R72, R76, R77, R101, R117, R119	26	R-CHIP	1 kohm, 1 %, 1/10 W, TP, 1608
2007-000052	R3, R20, R32-R39, R43, R44, R48 R54, R56, R58, R60, R63, R65, R70, R82 R84, R121, R133-R135, R181	27	R-CHIP	10 kohm, 1 %, 1/10 W, TP, 1608
2007-000060	R9, R18	2	R-CHIP	100 kohm, 1 %, 1/10 W, TP, 1608
2007-000070	R138, R143-R148, R165, R173 R175-R177, R202, R207 R66, R74, R75, R78, R80, R81, R83, R85	22	R-CHIP	0 ohm, 5 %, 1/10 W, TP, 1608

Part No	Reference	Q'tt	Part Name	Specification
2007-000070	R7, R40-R42, R50, R51, R61, R62, R64 R98, R100, R102, R108-R115, R120, R130	22	R-CHIP	0 ohm, 5 %, 1/10 W, TP, 1608
2007-000287	R1, R2, R6, R21-R31, R67, R68, R86-R97 R140-R142, R151, R152, R167, R169, R170 R172, R174, R180, R187, R203-R206, R208-R230 R99, R105-R107, R118, R125-R128, R132	77	R-CHIP	100 ohm, 1 %, 1/10 W, DA, TP, 1608
2007-001153	R163	1	R-CHIP	750 ohm, 1 %, 1/10 W, TP, 1608
2007-002918	R53, R55, R57, R59	4	R-CHIP	51.1 kohm, 1 %, 1/10 W, TP, 1608
2007-002987	R182-R185, R196-R201, R231-R250 R52, R69, R103, R122, R139, R157-R162 R8, R10, R15, R16, R19, R45-R47, R49	50	R-CHIP	4.75 kohm, 1 %, 1/10 W, TP, 1608
2007-007296	R104	1	R-CHIP	1.21 k ohm, 1 %, 1/10 W, TP, 1608
2007-007645	R79, R116, R123, R164	4	R-CHIP	51.1 ohm, 1 %, 1/10 W, TP, 1608
2007-007796	R11, R12	2	R-CHIP	2.21 kohm, 1 %, 1/10 W, TP, 1608
2007-008122	R17	1	R-CHIP	22.1 ohm, 1 %, 1/10 W, DA, TP, 1608
2203-000257	C26	1	C-CER, CHIP	10 nF, 10 %, 50 V, X7R, TP, 1608
2203-000998	C7, C14, C15	3	C-CER, CHIP	0.047 nF, 5 %, 50 V, C0G, TP, 1608
2203-001408	C2, C9	2	C-CER, CHIP	0.27 nF, 5 %, 50 V, NP0, TP, 1608

Part No	Reference	Q'tt	Part Name	Specification
2203-002793	C64-C79	16	C-CER, CHIP	1000 nF, +80- 20 %, 25 V, Y5V, 2012
2203-005249	C1, C3-C6, C8, C12, C13, C16-C24 C27-C31, C36, C37, C42-C63 C88-C98, C100-C104, C108	63	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, TP, 1608
2305-000413	C80-C87	8	C-FILM, LEAD- PEF	470 nF, 5 %, 63 V, TP, 7.2x4.5x9.5mm,
2401-001701	C107	1	C-AL	47 uF, 20 %, 100 V, GP, TP, 10X12.5, 5
2402-000008	C105	1	C-AL, SMD	47 uF, 20 %, 16 V, GP, TP, 6.6x6.6x5.4
2402-000120	C10, C11	2	C-AL, SMD	10 uF, 20 %, 50 V, GP, TP, 6.6X6.6X5.4 mm
2404-001037	C25, C32-C35	5	C-TA, CHIP	10 uF, 10 %, 16 V, TP, 3528
2804-001198	Y2	1	OSCILLATOR- CLOCK	16.384 MHz, 50PPM, 10TTL & CMOS, TP, 5 V, 40 MA
2804-001499	Y1	1	OSCILLATOR- CLOCK	20 MHz, 50PPM, 10TTL&CMOS, TP, 3.3 V, 40 MA
3301-001120	L1-L4	4	BEAD-SMD	30 ohm, 2x1.25x0.85mm, 3000 mA , TP, 0.015 ohm
3301-001309	L23, L24, L27, L28, L31, L32, L35, L36 L7, L8, L11, L12, L15, L16, L19, L20	16	BEAD-SMD	47 ohm, 1.6x0.8x0.8mm, 500 mA, TP, 0.3 ohm
3404-001008	SW1	1	SWITCH-TACT	15 V, 50 MA, 160GF, 6X6X5 mm, SPST
3701-000215	P1	1	CONNECTOR- DSUB	9P, 2R, FEMALE, ANGLE, AUF
3703-000124	J3	1	CONNECTOR- BACK PANEL	20P, 2R, MALE, ANGLE, AUF
3703-000179	J2	1	CONNECTOR- BACK PANEL	50P, 2R, MALE, ANGLE, AUF
3703-000271	J1	1	CONNECTOR- BACK PANEL	10P, 2R, MALE, STRAIGHT, AUF

Part No	Reference	Q'tt	Part Name	Specification
3711-003272	P2	1	CONNECTOR-HEADER	BOX, 10P, 2R, 2.54mm, STRAIGHT, AU
EN13-10502A	U5, U6	2	IC ASIC	DECT, TP3404, PLCC, 28P
EN13-10503A	U4	1	IC ASIC	DECT, STI-9511, QFP, 60P
GA26-10053A	T1-T8	8	TRANS PULSE	DGP 360, 144//72.5/72T, 5mH
GA27-30057A	L5	1	COIL RF	PRO-56EX/120MX, 72uH
GA61-10503A	-	2	EJECTOR-DCS	DCS, PAUL94-V0, NTR

4.17 4 BRI Card

Part No	Reference	Q'tt	Part Name	Specification
1203-000107	U27, 35	2	IC-NEGA. ADJUST REG.	337, TO-39, 3P, METAL, -1.2/-1.3
1203-001543	U13	1	IC-POSI.FIXED REG.	78R33, TO-220, 4P, 400 mil, PLASTIC
2003-002054	RW1-2	2	R-METAL OXIDE(S)	3.74 kohm, 1 %, 2 W, AA, TP, 4x12mm
2804-000145	Y2	1	OSCILLATOR-CLOCK	16.384 MHz, 30ppm, 10 TTL, ST, 5 V, 1
3301-000292	BD101-BD104, BD201-BD204 BD301-BD304, BD401-BD404	16	BEAD-RADIAL	100 ohm, 3.5x0.6x6.5mm, 7000 mA, TP, 0.01 ohm
3407-000119	SW1-SW4	4	SWITCH-DIP	24 V, 300 mA, SLIDE
3703-000124	P2	1	CONNECTOR-BACK PANEL	20P, 2R, MALE, ANGLE, AUF
3703-000179	P4	1	CONNECTOR-BACK PANEL	50P, 2R, MALE, ANGLE, AUF
3703-000271	P3	1	CONNECTOR-BACK PANEL	10P, 2R, MALE, STRAIGHT, AUF
3704-000255	U25, 34	2	SOCKET-IC	32P, DIP, SN, 2.54mm
3711-001465	J1	1	CONNECTOR-HEADER	NOWALL, 3P, 1R, 2.54mm, STRAIGHT, A
3711-003272	P11	1	CONNECTOR-HEADER	BOX, 10P, 2R, 2.54mm, STRAIGHT, AU
GA26-00004A	T1-T4	4	TRANS PULSE	APT-2S0-22B, COMPACT II, 10P, CO-BASE ALLOY, -10TO80C, BK
GA61-10503A	EJECTOR	2	EJECTOR-DCS	DCS, PAUL94-V0, NTR
0401-001099	D25-D28	4	DIODE-SWITCHING	1N4148WS, 75 V, 150 MA, SOD-323, TP
0403-001416	ZD101-ZD108, ZD201-ZD208 ZD301-ZD308, ZD401-ZD408	32	DIODE-ZENER	MMSZ5227B, 3.42-3.78 V, 500 MW, SOD-123, TP
0501-000477	Q1-Q4	4	TR-SMALL SIGNAL	MMBT5550, NPN, 300 MW, SOT-23, TP, 20-250
0601-000005	LED1	1	LED	SMD, GRN, 3X2 mm, 570NM, 3X2 m m
0801-000397	U19	1	IC-CMOS LOGIC	74HC04, INVERTER, SOP, 14, 150 mil, HEX, TP, 2.0/6.0 V

Part No	Reference	Q'tt	Part Name	Specification
0801-000649	U20	1	IC-CMOS LOGIC	74HC174, D FLIP-FLOP, SOP, 16, 150 mil, HEX, ST, 2.0/6.0V
0801-000690	U26	1	IC-CMOS LOGIC	74HC373, TRANSPARENT LATCH, SOP, 20, 300 mil, OCTAL, TP, 2.0/6.0 V
0801-000696	U9, U31	2	IC-CMOS LOGIC	74HC245, TRANSCEIVER, SOP, 20, 300 mil, OCTAL, TP, 2.0/6.0 V
0801-000702	U16, U30	2	IC-CMOS LOGIC	74HC125, BUFFER, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
0801-000716	U32	1	IC-CMOS LOGIC	74HC541, BUFFER/DRI VER, SOP, 20 , 300 mil, OCTAL, TP, 2.0/6.0 V
0801-000945	U17	1	IC-CMOS LOGIC	74HC244, BUFFER/DRIVER, SOP, 20, 300 mil, OCTAL, ST, 2.0/6.0 V
0803-000842	U29	1	IC-TTL	74LS09, AND GATE, SOP, 14, 150 mil, QUAD, TP, 4.75/5.25 V
0902-000314	U21	1	IC-MICROPROCESSOR	MC68EC000, 16 MHz, 16 bit, PLCC, 68P, ST, PLASTIC, 5 V, 260 MW, 0TO+70C, 24 bit,
0904-001363	U36	1	IC-UART	ST16C1551, 8 bit, PLCC, 28P, 11.5X11.5 mm, 24 MHz, TR, CMOS, PLASTIC, 5 V, 500 MW, 0TO+70C, 3
1006-001140	U37	1	IC-LINE TRANSCEIVER	3232, SSOP, 16P, 212 mil, DUAL, TP, PLASTIC, 5.5 V, 0to+70C, 571 MW, 2, 2
1106-000131	U24, 33	2	IC-SRAM	K6X1008C2, 128KX8 bit, SOP, 32P, 2 0.87X11.43 mm, 55 nS, 4.5/5.5 V, PLASTIC, 0TO+70C, 15UA, C
1106-001157	U12	1	IC-SRAM	7C131, 1KX8 bit, QFP, 52P, 10X10 mm, 55 nS, 5 V, 10 %, PLASTIC, 0TO+70C, 15 MA, CMOS, TR
1202-000137	U28	1	IC-MONITOR	DS1232, SOIC, 16P, 300 mil, PLASTIC, 0TO+70C, 10 MA, TP
1205-002389	U10	1	IC-TRANSCEIVER	PEB20590, MQFP, 80P, 14X14 mm, PLASTIC, 3.47 V, 99 MW, 0TO+70C, TR, ISDN TRANSCEIVER IC

Part No	Reference	Q'tt	Part Name	Specification
1205-002390	U11	1	IC-EPIC	PEB20570, TQFP, 100P, 14X14 mm, PLASTIC, 3.47 V, 880 MW, 0TO+70C , TR, IC-EPIC
1301-001407	U23	1	IC-EPLD	M4A5-128/64, TQFP, 100P, 14x14 mm, 10nS, 5, 10 %
1404-000126	PS1-4	4	THERMISTOR -PTC	4.85 ohm, 60 V, 5mm
1405-001006	AR101-AR106, AR201-AR206 AR301-AR306, AR401-AR406	24	SURGE ABSORBER	300 V, 500A, 7.0x3.3mm, BK
2003-000458	R93-R100	8	R-METAL OXIDE(S)	100 ohm, 5 %, 2 W, AF, TP, 4x12mm
2007-000286	R10, R18-R28 R135-R147, R150, R151, R157 R47-R57, R61-R71, R76-R81 R84, R86-R89, R104, R110-R120	73	R-CHIP	100 ohm, 1 %, 1/8 W, TP, 2012
2007-000297	R1-R4, R11-R15 R148, R152, R153, R155, R156 R168 R58-R60, R72-R75, R82, R83 R85, R102, R103, R108, R109	29	R-CHIP	10 kohm, 1 %, 1/8 W, TP, 2012
2007-000307	R33, R34, R37, R38, R41, R42, R45, R46	8	R-CHIP	10 ohm, 1 %, 1/8 W, TP, 2012
2007-000342	R101, R134	2	R-CHIP	120 ohm, 1 %, 1/8 W, TP, 2012
2007-000465	R121-R132, R167, R169	14	R-CHIP	1 kohm, 1 %, 1/8 W, TP, 2012

Part No	Reference	Q'tt	Part Name	Specification
2007-000590	R5	1	R-CHIP	22 ohm, 1 %, 1/8 W, TP, 2012
2007-000668	R16, 17	2	R-CHIP	2 kohm, 1 %, 1/8 W, TP, 2012
2007-000682	R29, 30, 90-92, 105-107	8	R-CHIP	3.3 kohm, 1 %, 1/8 W, TP, 2012
2007-000856	R6-R8, R154	4	R-CHIP	4.3 kohm, 1 %, 1/8 W, TP, 2012
2007-001653	R31, R32, R35, R36, R39, R40, R43, R44	8	R-CHIP	1.8 kohm, 1 %, 1/8 W, TP, 2012
2007-001672	R159-R166	8	R-CHIP	8.2 kohm, 1 %, 1/8 W, TP, 2012
2202-000886	C77-C84	8	C-CERAMIC, MLC-RADIAL	100 nF, 20 %, 200 V, X7R, TP, 7.6x3.8x
2203-000206	C100-C105 C110-C115 C3, C5-C8, C15, C29, C31 C34-C43, C47-C54 C60, C70-C76, C88, C93, C96	49	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, 2012
2203-000239	C56-C59, C94	5	C-CER, CHIP	0.1 nF, 5 %, 50 V, C0G, TP, 2012
2203-000260	C30	1	C-CER, CHIP	10 nF, 10 %, 50 V, X7R, TP, 2012
2203-000274	C97, C99, C106, C107	4	C-CER, CHIP	0.01 nF, 0.25PF, 50 V, C0G, TP, 2012
2203-000595	C89-C91	3	C-CER, CHIP	0.22 nF, 5 %, 50 V, C0G, TP, 2012
2203-001002	C61-C68	8	C-CER, CHIP	0.047 nF, 5 %, 50 V, C0G, TP, 2012
2401-000028	C87	1	C-AL	10 uF, 20 %, 50 V, GP, TP, 5x11, 5
2401-000385	C69, 85	2	C-AL	10 uF, 20 %, 100 V, GP, TP, 6.3x11, 5
2401-001594	C86	1	C-AL	47 uF, 20 %, 63 V, GP, TP, 8x11.5, 5
2404-001037	C1, C4	2	C-TA, CHIP	10 uF, 10 %, 16 V, TP, 3528
2702-001112	B2	1	INDUCTOR-RADIAL	60 uH, 35 %, 7.5x8.0mm
2801-003861	Y1	1	CRYSTAL-SMD	15.36 MHz, 50ppm, 28-AAV, 16pF, 50 ohm, TP
2801-004044	Y3	1	CRYSTAL-SMD	16.384 MHz, 20PPM, 28-ABX, 18PF, 50 ohm, TP
2901-000184	B1, B3	2	FILTER-EMI ON BOARD	50 V, 1A, 100pF, 7.5x2.5x6.2mm, TP
3301-001308	L1, L2	2	BEAD-SMD	10 ohm, 1608, 500 mA, TP, 0.15 oh m

Part No	Reference	Q'tt	Part Name	Specification
3501-001035	K1-K4	4	RELAY-MINIATURE	5 VDC, 140 MW, 2000 MA, 2FORM C, 4MS, 4MS
GA41-11009A	REV.05	1	PCB-4S0	COMPACT EURO, FR-4, 4L, 1.6, 300X9
2203-001002	C61-C68	8	C-CER, CHIP	0.047 nF, 5 %, 50 V, C0G, TP, 2012
2401-000028	C87	1	C-AL	10 uF, 20 %, 50 V, GP, TP, 5x11, 5
2401-000385	C69, 85	2	C-AL	10 uF, 20 %, 100 V, GP, TP, 6.3x11, 5

4.18 2 SLI Card

Part No	Reference	Q'tt	Part Name	Specification
2003-000155	R5	1	R-METAL OXIDE	10 ohm, 2 %, 2 W, AA, TP, 6x16mm
2003-000265	RW3	1	R-METAL OXIDE	300 ohm, 5 %, 2 W, AA, TP, 6x16mm
2003-000824	RW1, RW2	2	R-METAL OXIDE(S)	270 ohm, 2 %, 2 W, AA, TP, 4x12mm
2011-001099	HYB3	1	R-NET	300 ohm, 5 %, 2 W, X, ARRAY, 10P, BK
2305-000128	C101, 102, 201, 202	4	C-FILM, LEAD-PEF	100nF, 10 %, 250 V, BK, 10.5x5x11, 7
2401-001661	C1	1	C-AL	68 uF, 20 %, 100 V, GP, TP, 10x16, 5
3501-000217	K1, 2	2	RELAY-MINIATURE	5 V, 150 MW, 1000 MA, 2FORMC, 6M S, 3MS
3703-000192	P5	1	CONNECTOR -BACK PANEL	64P, 2R, MALE, ANGLE, AUF
EC26-20501A	T1, 2	2	TRANS AF	INFOREX, 800mH
GA13-10562C	HYB 1, 2	2	IC HYBRID	DCS, KP-SLC05E, SIP, 12P, 30.48X18 mm, DC FEEDING
GA13-10569A	HYB4	1	IC HYBRID	TARGET, KP0073SA, SIP, 20P
GA61-10503A	EJECTOR	2	EJECTOR-DCS	DCS, PAUL94-V0, NTR
GA94-00932A	AUT	1	PRA AUTO-2 SLI	DCS COMPACT, SEG, GERM, AUTO
0401-000133	D1, 2	2	DIODE-SWITCHING	RLS4148, 75 V, 150 MA, LL-34, TP
0403-000308	D101, 102, 201, 202	4	DIODE-ZENER	RLZ3.6A, 3.455-3.695 V, 500 MW, LL-34, TP
0501-000477	Q1, 2	2	TR-SMALL SIGNAL	MMBT5550, NPN, 300 MW, SOT-23, TP, 20-250
1205-000394	U102, 202	2	IC-CODEC FILTER	TP3057WM, SOP, 16P, PLASTIC, 5.2
2007-000033	R112, 113	2	R-CHIP	0 ohm, 5 %, 1/4 W, TP, 3216
2007-000299	R1, 2	2	R-CHIP	10 kohm, 1 %, 1/4 W, TP, 3216
2007-000467	R101, 102, 201, 202, 3	5	R-CHIP	1 kohm, 1 %, 1/4 W, TP, 3216
2203-000208	C2, 4, 6, 105, 113, 114 C205, 213, 214	9	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, TP, 3216

Part No	Reference	Q'tt	Part Name	Specification
2203-000208	C400	1	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, TP, 3216
2401-000028	C3, 5	2	C-AL	10 uF, 20 %, 50 V, GP, TP, 5x11, 5
2401-000385	C103, 104, 203, 204	4	C-AL	10 uF, 20 %, 100 V, GP, TP, 6.3x11, 5
4715-000127	ARS101-103 ARS201-203	6	SURGE ABSORBER	300 V, 15 %, 500A
GA41-10011A	REV.02	1	PCB-COMPACT EURO 2 SLI/E	COMPACT EURO 2 SLI/E, FR-4, 2L, 1

4.19 3 TRK Card

Part No	Reference	Q'tt	Part Name	Specification
0401-000133	D25, 26, 27 D5, 6, 11, 12, 17, 18	9	DIODE-SWITCHING	RLS4148, 75 V, 150 MA, LL-34, TP
0402-001047	BD1-3	3	DIODE-BRIDGE	DF04S, 400 V, 1A, SMD-4, ST
0403-000308	ZD10-ZD15	6	DIODE-ZENER	RLZ3.6A, 3.455-3.695 V, 500 MW, LL-34, TP
0403-000549	ZD1-6	6	DIODE-ZENER	RLZJ24B, 23.61-24.92 V, 500 MW, LL-34, TP
0406-001014	TVS1-6	6	DIODE-TVS	1.5KE24A, 22.8-25.2 V, 1500W, DO-2
0501-000477	Q7-Q12	6	TR-SMALL SIGNAL	MMBT5550, NPN, 300 MW, SOT-23, TP, 20-250
0502-000465	Q1-3	3	TR-POWER	KTD2058, NPN, 25000 MW, TO-220IS, ST, 100-200
0604-001002	U4, U5, U6	3	PHOTO-COUPLER	TR, 100-600 %, 200 MW, SOP-4, TP
0801-000702	U2, U3	2	IC-CMOS LOGIC	74HC125, BUFFER, SOP, 14, 150 mil, QUAD, TP, 2.0/6.0 V
1201-000005	U7-9	3	IC-OP AMP	MC3403, SOP, TP, 14P, 150 mil, QUAD, 200 V/MV, PLASTIC, 36 V, 300 MW, 0TO+70C, 90DB, 0.6V/US, 30N
1205-000394	U10-12	3	IC-CODEC FILTER	TP3057WM, SOP, 16P, PLASTIC, 5.2
1405-000138	VA1-9	9	VARISTOR	360 V, 2500A, 17.5x6.7mm, BK
2003-002066	R9, 18, 27 R9, 18, 27	6	R-METAL OXIDE(S)	20 ohm, 5 %, 1 W, AF, TP, 2.5X6.5
2003-002105	R1-3	3	R-METAL OXIDE(S)	10 kohm, 5 %, 1 W, AF, TP, 2.5x6.5mm
2003-002169	R121, R122, R221, R222, R321, R322	6	R-METAL OXIDE	27 ohm, 5 %, 1 W, AF, TP, 4.3x12mm
2007-000029	R11, 12, 20, 21, 29, 30	6	R-CHIP	0 ohm, 5 %, 1/8 W, TP, 2012
2007-000238	R37, 46, 55	3	R-CHIP	1.5 kohm, 1 %, 1/8 W, TP, 2012
2007-000277	R115	1	R-CHIP	100 kohm, 1 %, 1/8 W, TP, 2012

Part No	Reference	Q'tt	Part Name	Specification
2007-000277	R58, 59, 66, 67, 72, 73	6	R-CHIP	100 kohm, 1 %, 1/8 W, TP, 2012
2007-000286	R117-120 R123, R223, R323, R126-R128 R87-93, 97-114	35	R-CHIP	100 ohm, 1 %, 1/8 W, TP, 2012
2007-000297	R6, 15, 24, R81-83	6	R-CHIP	10 kohm, 1 %, 1/8 W, TP, 2012
2007-000307	R129, R130, R132, R133, R135, R136 R401-R403	9	R-CHIP	10 ohm, 1 %, 1/8 W, TP, 2012
2007-000378	R35, 44, 53	3	R-CHIP	13 kohm, 1 %, 1/8 W, TP, 2012
2007-000392	R7, 16, 25	3	R-CHIP	150 kohm, 1 %, 1/8 W, TP, 2012
2007-000465	R32, 41, 50 R79, R131, R134, R137	7	R-CHIP	1 kohm, 1 %, 1/8 W, TP, 2012
2007-000474	R116	1	R-CHIP	1 Mohm, 1 %, 1/8 W, TP, 2012
2007-000490	R36, 45, 54 R94-96	6	R-CHIP	2.2 kohm, 1 %, 1/8 W, TP, 2012
2007-000543	R34, 43, 52	3	R-CHIP	20 kohm, 1 %, 1/8 W, TP, 2012
2007-000639	R31, 40, 49	3	R-CHIP	270 ohm, 1 %, 1/8 W, TP, 2012
2007-000716	R124, R125	2	R-CHIP	3.9 ohm, 5 %, 1/8 W, TP, 2012
2007-000735	R63, 71, 77	3	R-CHIP	30 kohm, 1 %, 1/8 W, TP, 2012
2007-000827	R38, 47, 56	3	R-CHIP	39 kohm, 1 %, 1/8 W, TP, 2012
2007-000909	R39, 48, 57	3	R-CHIP	43 kohm, 1 %, 1/8 W, TP, 2012
2007-001037	R62, 70, 76	3	R-CHIP	56 kohm, 1 %, 1/8 W, TP, 2012
2007-001067	R8, 17, 26	3	R-CHIP	6.8 kohm, 1 %, 1/8 W, TP, 2012
2007-001195	R300-302	3	R-CHIP	820 kohm, 5 %, 1/8 W, TP, 2012
2007-001205	R33, 42, 51	3	R-CHIP	82 kohm, 1 %, 1/8 W, TP, 2012
2007-001662	R60, 68, 74	3	R-CHIP	36 kohm, 1 %, 1/8 W, TP, 2012
2007-001671	R61, 69, 75	3	R-CHIP	75 kohm, 1 %, 1/8 W, TP, 2012
2203-000130	C22, 31, 40 C45, 49, 53	6	C-CER, CHIP	1.2 nF, 5 %, 50 V, C0G, TP, 2012
2203-000206	C17, 26, 35 C19, 20, 21, 28-30, 38 C37, 39, 56, 58, 59, 60	16	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, 2012

Part No	Reference	Q'tt	Part Name	Specification
2203-000206	C62, 64, 71-74, 76 C82, 84, 85	10	C-CER, CHIP	100 nF, 10 %, 50 V, X7R, 2012
2203-000260	C77	1	C-CER, CHIP	10 nF, 10 %, 50 V, X7R, TP, 2012
2203-000408	C44, 48, 52	3	C-CER, CHIP	0.18 nF, 5 %, 50 V, C0G, TP, 2012
2203-000595	C46, 50, 54	3	C-CER, CHIP	0.22 nF, 5 %, 50 V, C0G, TP, 2012
2203-001058	C24, 33, 42	3	C-CER, CHIP	0.56 nF, 5 %, 50 V, C0G, TP, 2012
2203-001230	C43, 47, 51	3	C-CER, CHIP	0.82 nF, 5 %, 50 V, NP0, TP, 2012
2203-001391	C16, 25, 34	3	C-CER, CHIP	150 nF, 10 %, 25 V, X7R, TP, 2012
2203-002793	C5, 9, 13	3	C-CER, CHIP	1000 nF, +80-20 %, 25 V, Y5V, 2012
2305-000475	C1-3	3	C-FILM, LEAD-PEF	820 nF, 10 %, 250 V, BK, 26.5x6x15, 22
2401-000804	C83, C81	2	C-AL	220 uF, 20 %, 16 V, GP, TP, 8x9mm, 5
2401-001205	C6, 10, 14	3	C-AL	33 uF, 20 %, 63 V, GP, 6.3x11, 2.5mm
2402-000170	C18, 27, 36 C55, 57, 61, 63	7	C-AL, SMD	1 uF, 20 %, 50 V, GP, TP, 4.3x4.3x5.4,
2402-001034	C7, C11, C15	3	C-AL, SMD	22 uF, 20 %, 35 V, GP, TP, 6.6X6.6X5.4
3301-000344	B1	1	BEAD-RADIAL	200 ohm, 3.5x0.6x6.5mm, 7000 mA, TP, 0.01 ohm
3501-000217	RL1-3, RL7, RL8	5	RELAY-MINIATURE	5 V, 150M W, 1000 MA, 2FORMC, 6MS, 3MS
3703-000124	P2	1	CONNECTOR-BACK PANEL	20P, 2R, MALE, ANGLE, AUF
3703-000179	P1	1	CONNECTOR-BACK PANEL	50P, 2R, MALE, ANGLE, AUF
3704-001001	HYB4, 6, 8	3	SOCKET-IC	8P, SIP, SN, 2.54 mm
EC26-20501A	T1, 2, 3	3	TRANS AF	INFOREX, 00 mH
EC27-30514A	L7	1	COIL RF	INFOREX, 35UH, 40T
GA13-00004A	U1	1	IC ASIC-TMC	STL7053E, IDCS500 PREMIUM, 60 PIN, 5 V, QFP, TR
GA41-11015B	REV.03	1	PCB-3 TRK, TALY	COMPACT PLUS, FR-4, 2L, 1.6T, 300X
GA61-10503A	EJECTOR	2	EJECTOR-DCS	DCS, PAUL94- V0, NTR
JC39-40400A	C65-70	6	CBF HARNESS	52 mm, AWG22(0.6PI)

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CHAPTER 5. Exploded View

This chapter shows the exploded view OfficeServ 100 basic and expansion cabinet

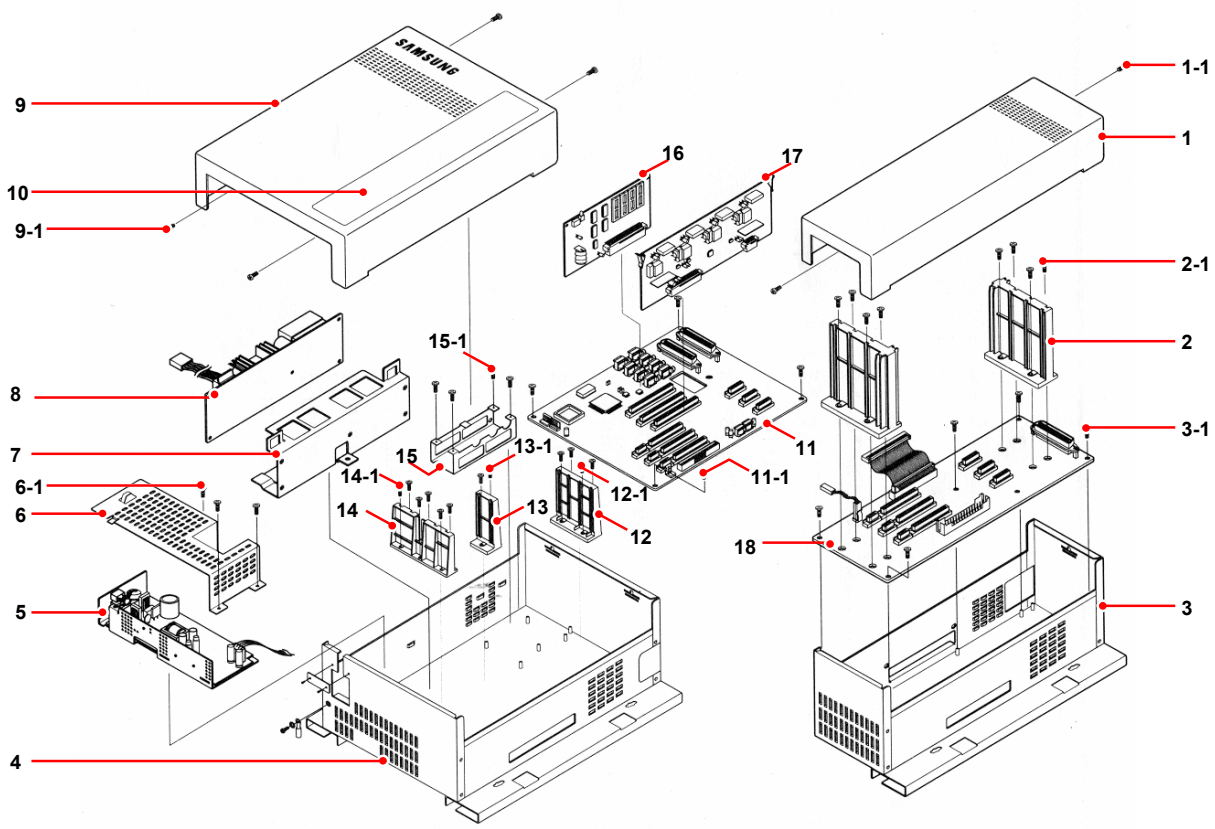


Figure 5.1 OfficeServ 100 Exploded View

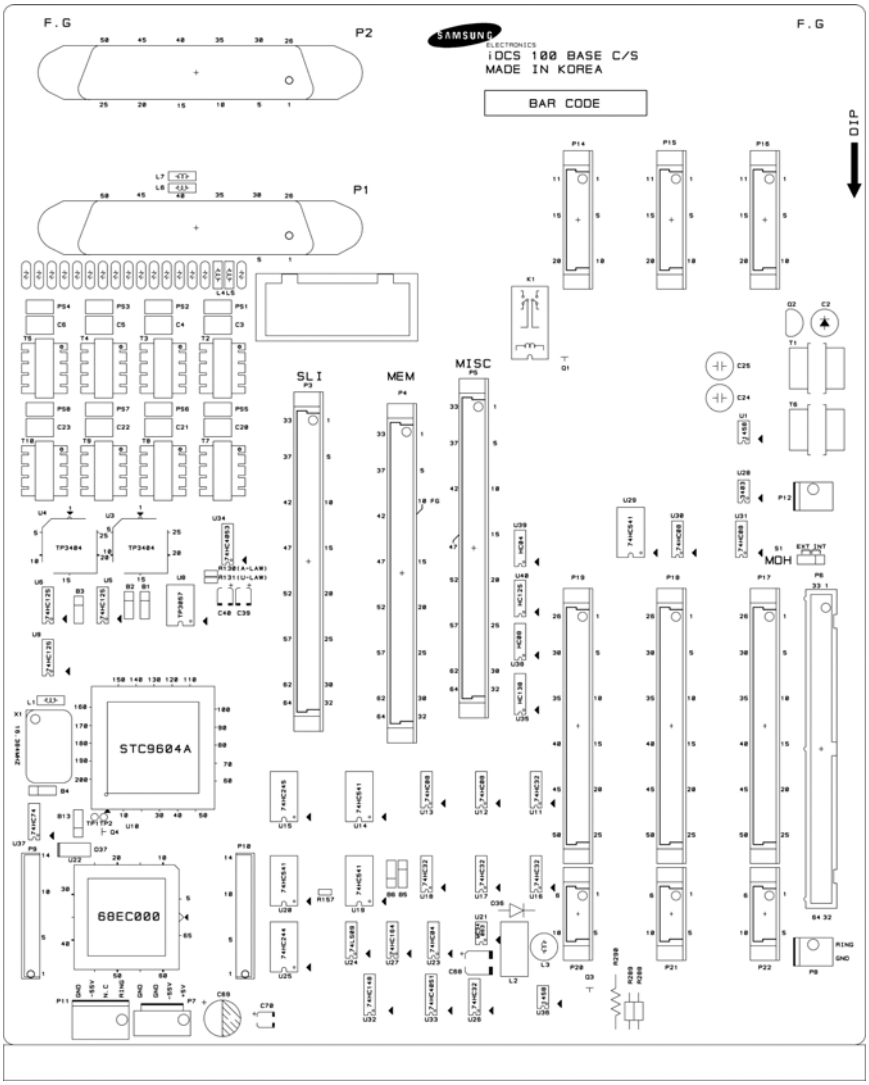
No	Part No	Specification	Remarks
1	GA720-10737A	Upper Cover(Expansion cabinet)	-
1-1	6003-000267	PHW, +, S, M3×L8, ZPC(YEL), SWRCH18	-
2	GA72-41211B (GA72-41211A)	Guide option ; Compact:DCS=2:2 slot (Guide option ; Compact:DCS=3:1 slot)	-
2-1	6003-000169	PH, +, B, M4×L10, ZPC(YEL), SWRCH18	-
3	GA75-10600A	Lower assembly(Expansion cabinet)	-
3-1	6003-000267	PHW, +, S, M3×L8, ZPC(YEL), SWRCH18	-
4	GA75-10599A	Lower assembly(Basic cabinet)	-
5	-	Power supply	Part list is Provided separately
6	GA70-10740A	Power Cover	-
6-1	6003-000266	PHW, +, S, M3×L6, ZPC(YEL), SWRCH18	-
7	GA70-10741A	Bracket Ring	-
8	-	Ringer Board	Part list is Provided separately
9	GA70-10733A	Upper Cover(Basic cabinet)	-
9-1	6003-000266	PHW, +, S, M3×L6, ZPC(YEL), SWRCH18	-
10	GA68-30677D (GA72-00098B)	Name Plate Label: OfficeServ 100 (Name Plate Label: iDCS 100)	OfficeServ 100 (iDCS 100)
11	GA92-02126B	PBA main 008 Base	-
11-1	6003-000266	PHW, +, S, M3×L6, ZPC(YEL), SWRCH18	-
12	GA72-41210A	Guide option ; Upper side	-
12-1	6002-000328	PH, +, 2, M4×L8, ZPC(YEL), SWRCH18A	-
13	GA72-41208A	Guide option ; MEM side	-
13-1	6002-000328	PH, +, 2, M4×L8, ZPC(YEL), SWRCH18A	-
14	GA72-41209A	Guide option ; Lower side	-
14-1	6002-000328	PH, +, 2, M4×L8, ZPC(YEL), SWRCH18A	-
15	GA70-10739A	Main Distribution Frame(MDF) Bracket	-
15-1	6003-000266	PHW, +, S, M3×L6, ZPC(YEL), SWRCH18	-
16	-	MEM card (MEM 3/ MEM 4/MCP 1)	Part list is Provided separately
17	-	MISC card (MISC 3/MISC 4)	Part list is Provided separately
18	-	Expansion board (EXP-A/EXP-B)	Part list is Provided separately

ANNEX A. PCB Component Layout

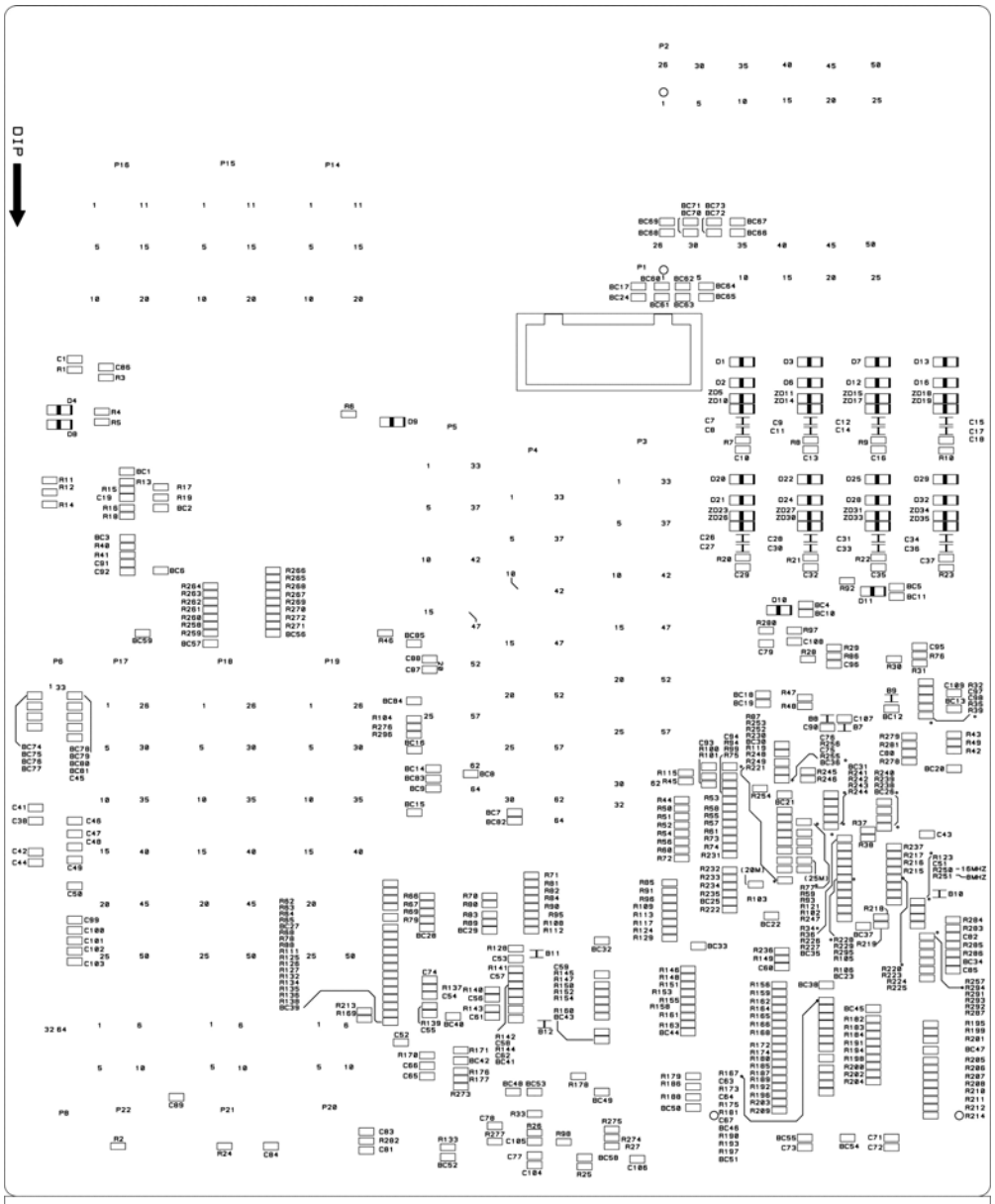
This chapter shows layout of OfficeServ 100 PCB components.

A.1 008 Base Board

A.1.1 Component Side

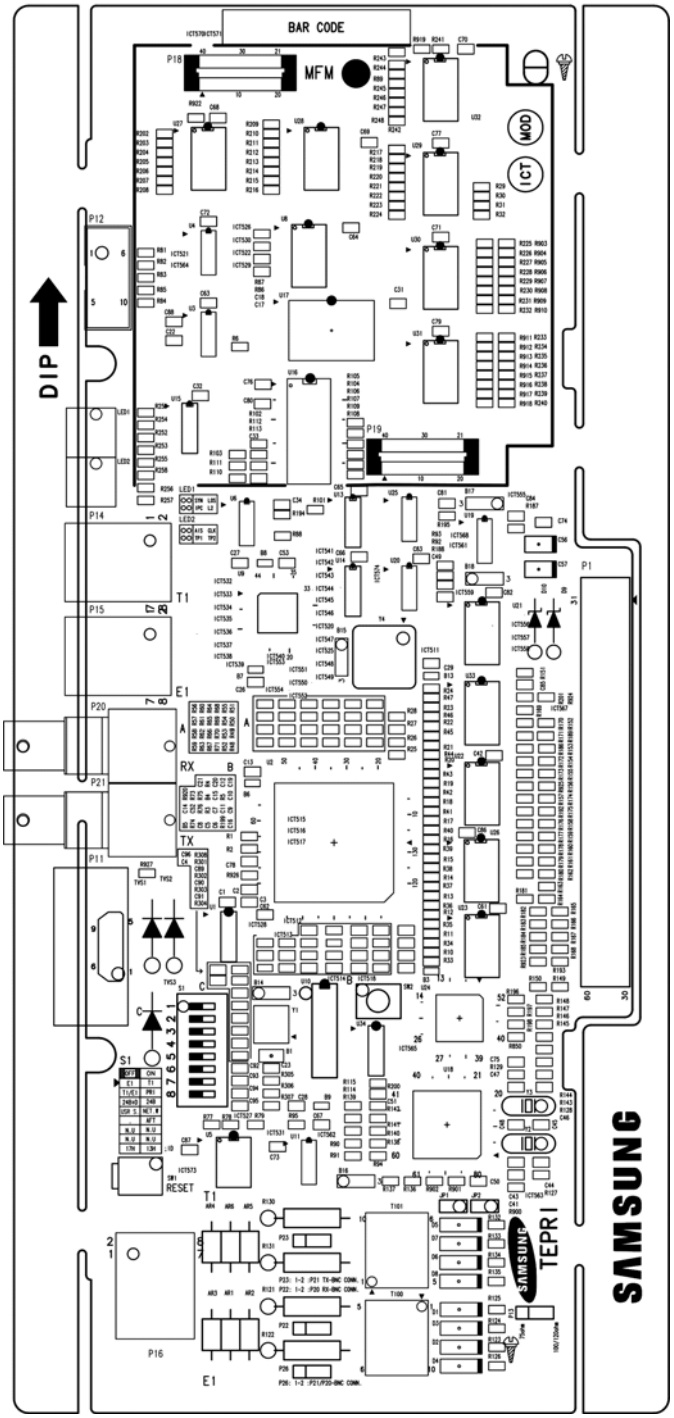


A.1.2 Solder Side

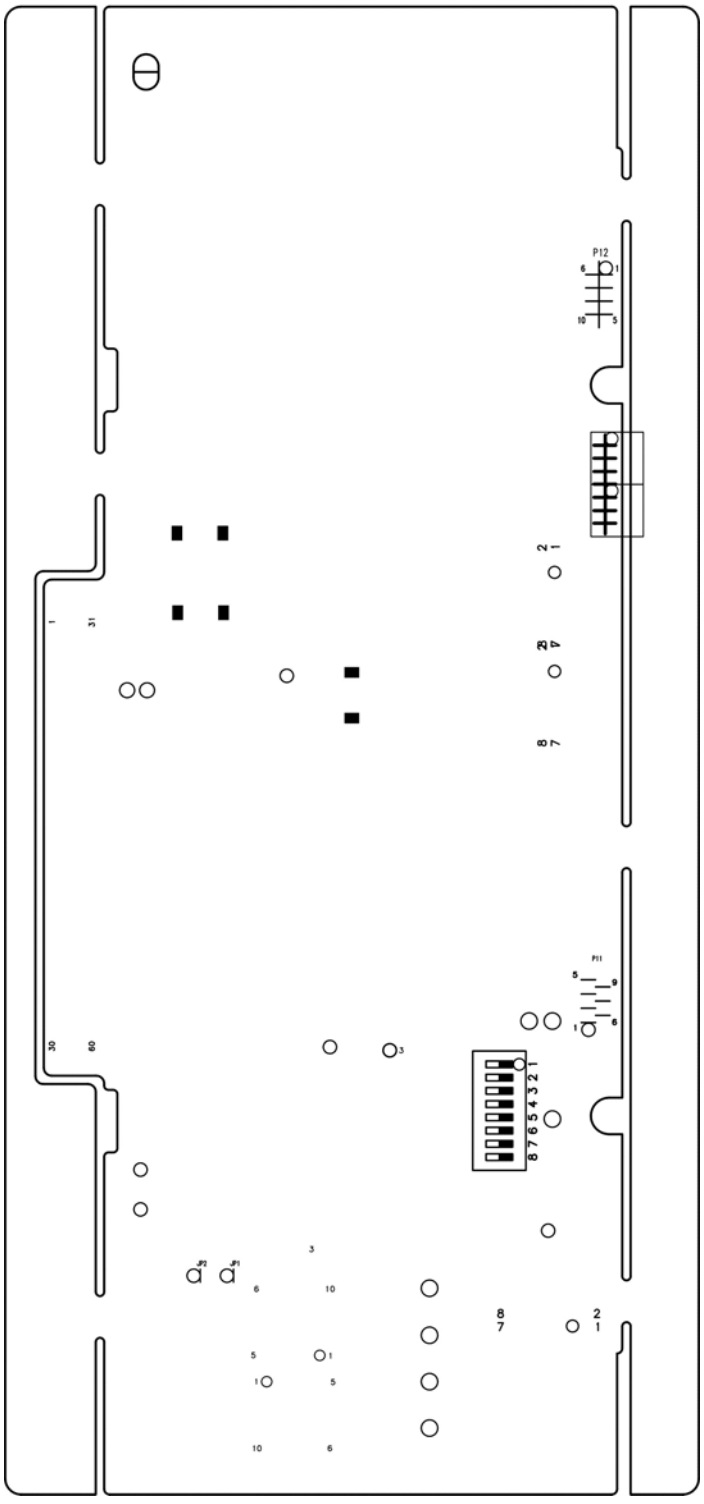


A.2 TEPRI Card

A.2.1 Component Side

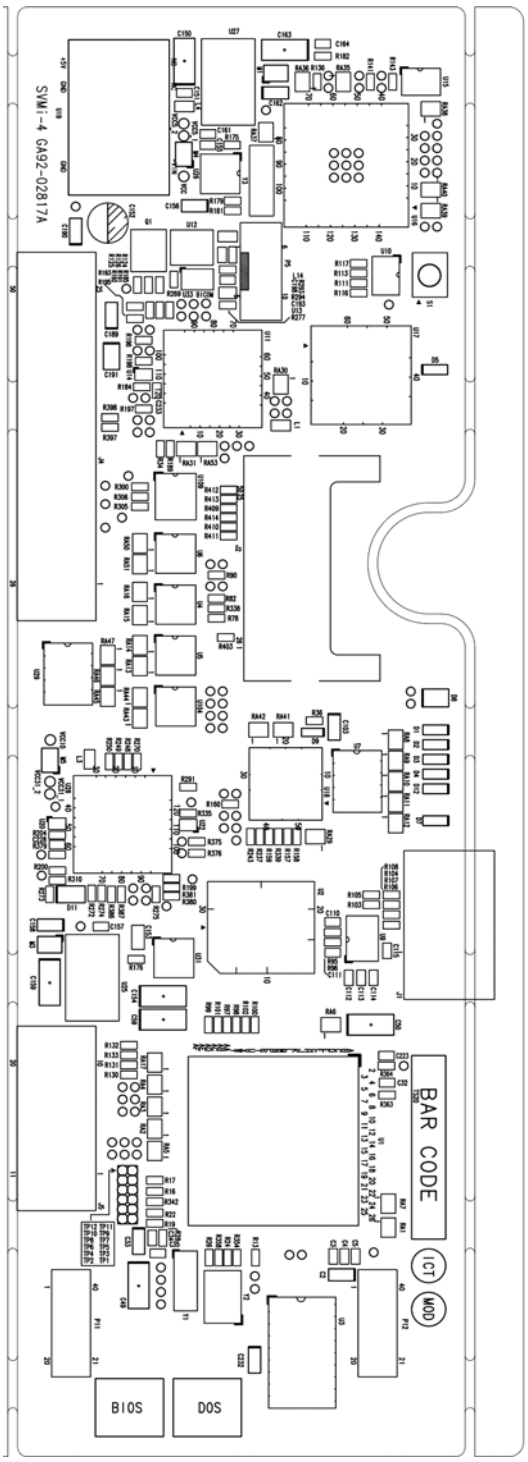


A.2.2 Solder Side

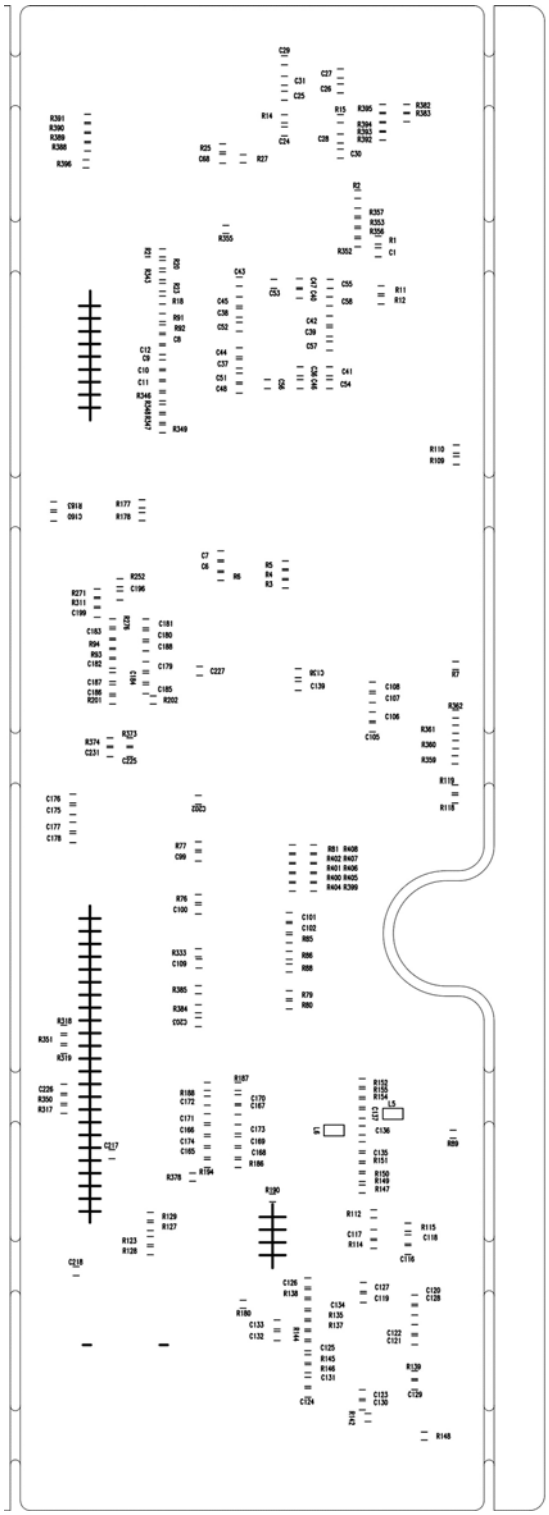


A.3 SVMi Card

A.3.1 Component Side

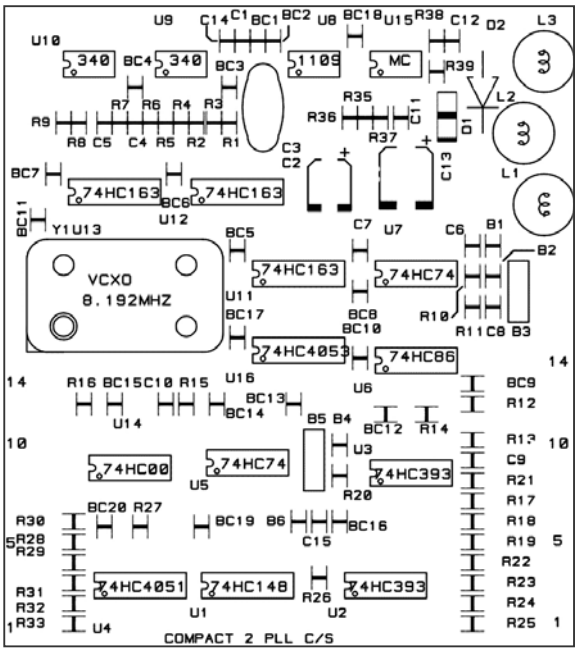


A.3.2 Solder Side

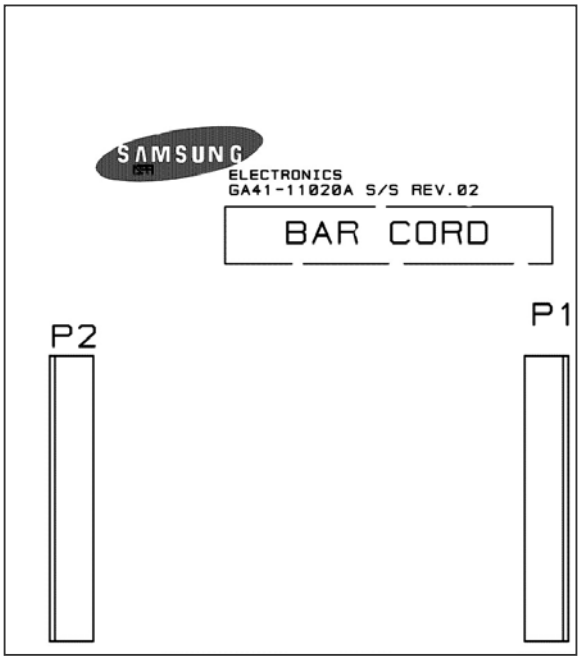


A.4 PLL Board

A.4.1 Component Side

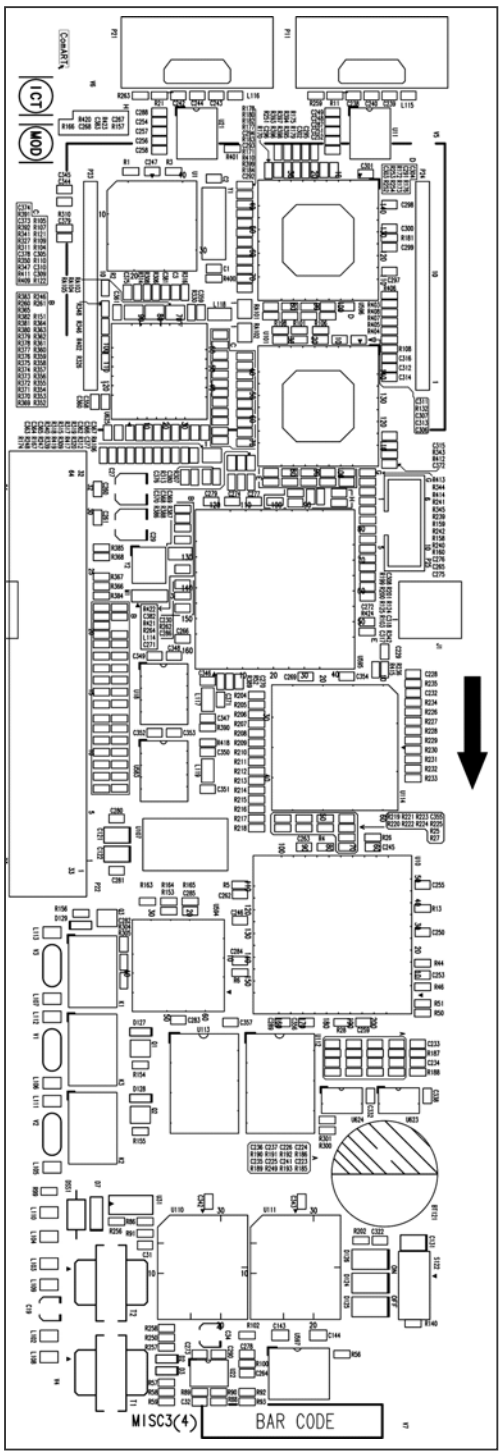


A.4.2 Solder Side

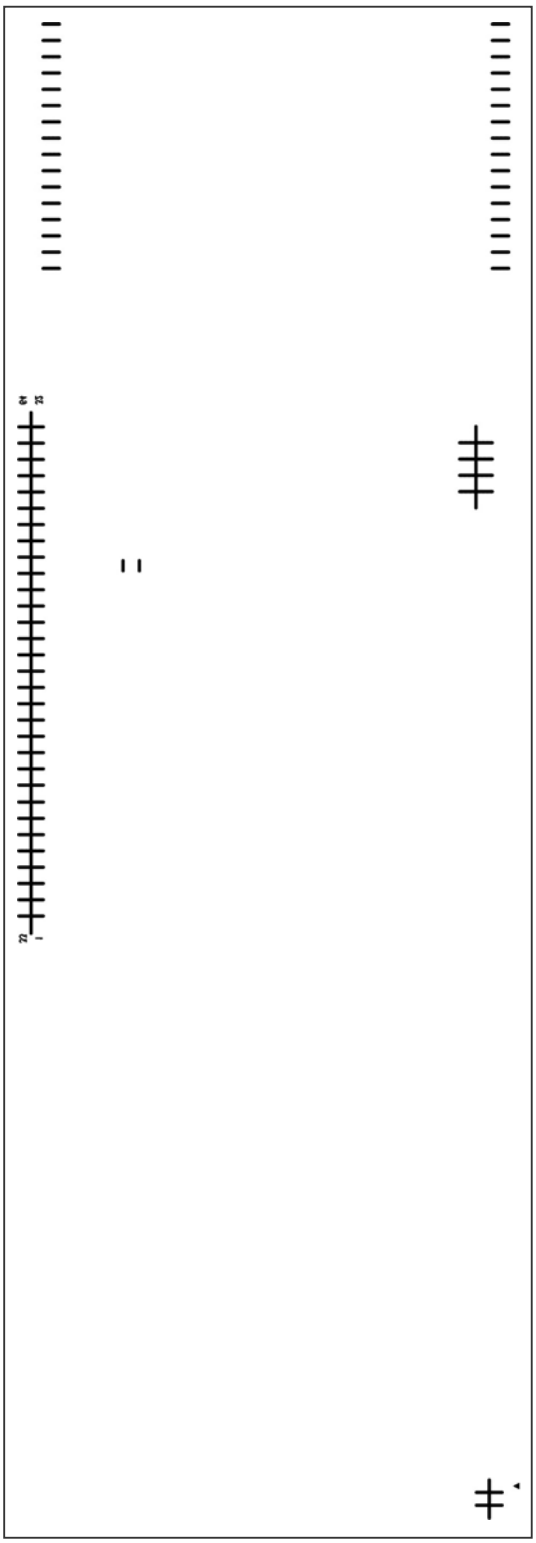


A.5 MISC 3 (4) Card

A.5.1 Component Side

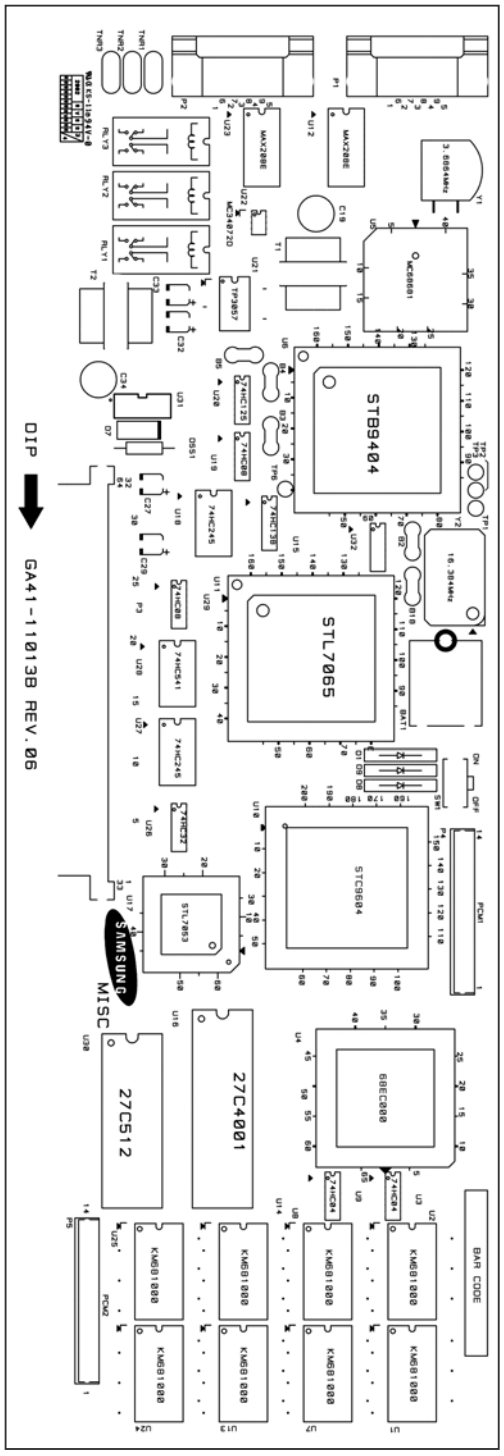


A.5.2 Solder Side

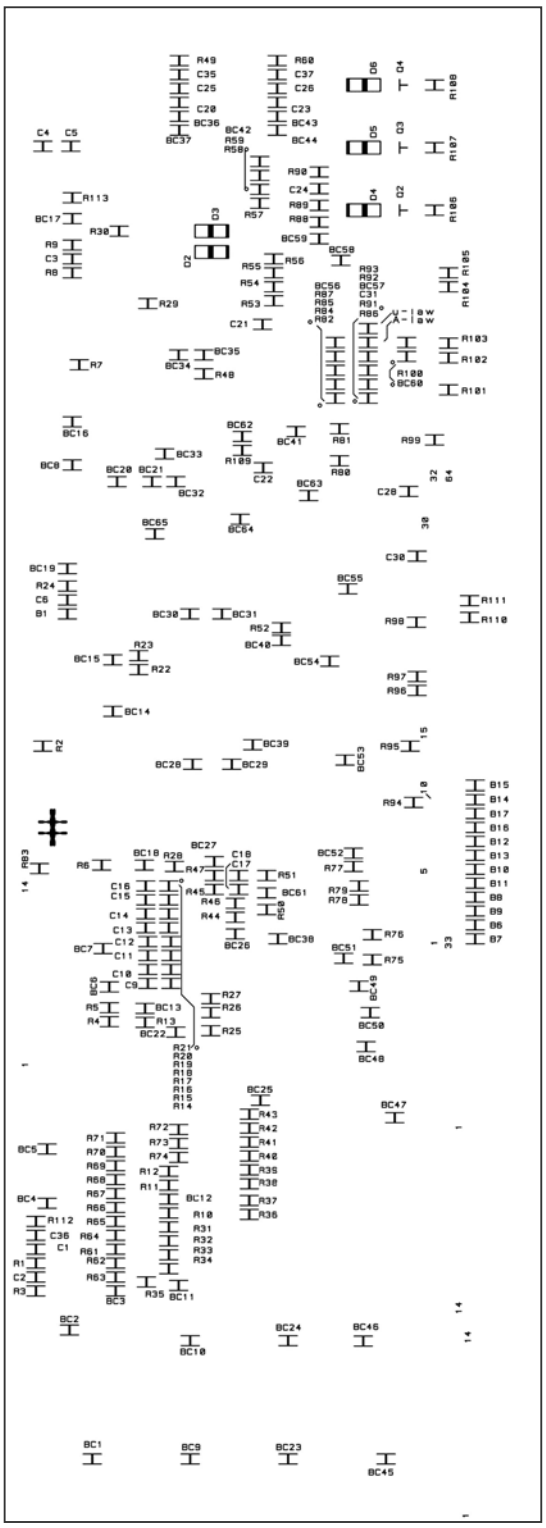


A.6 MISC 1 (2) Card

A.6.1 Component Side

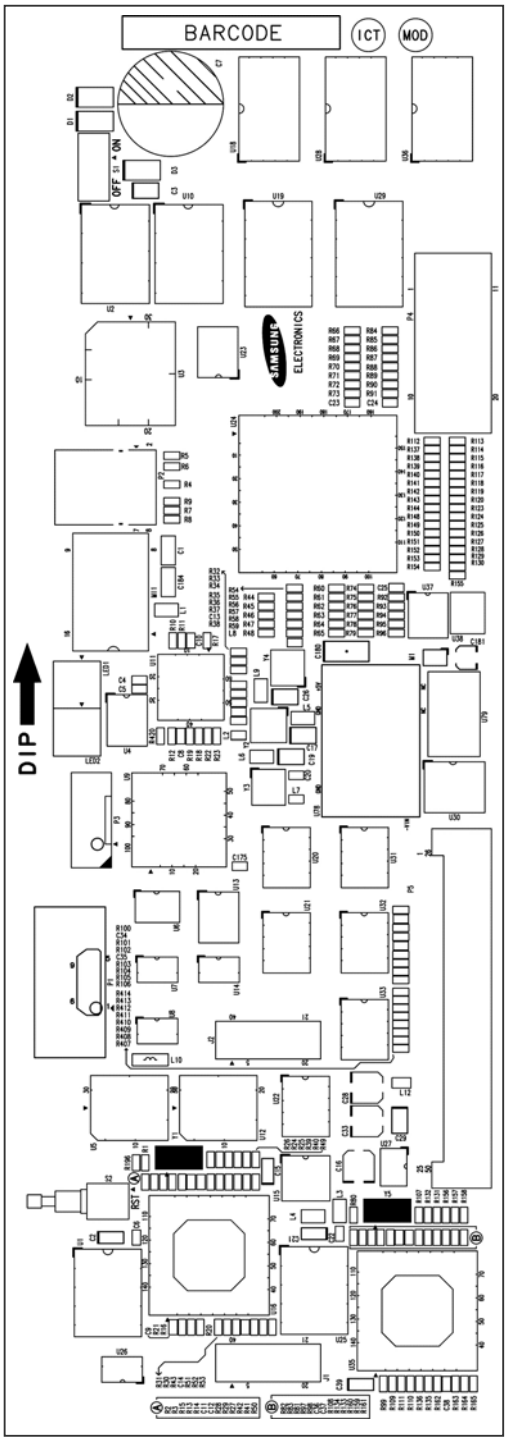


A.6.2 Solder Side

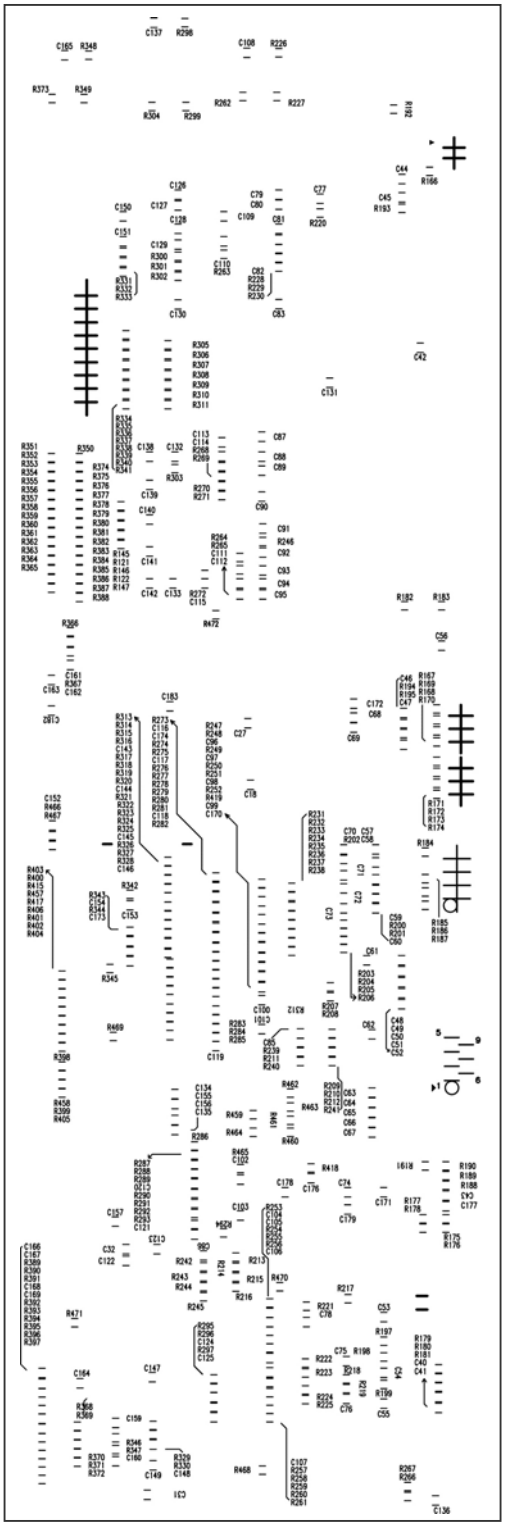


A.7 MGI 3 Card

A.7.1 Component Side

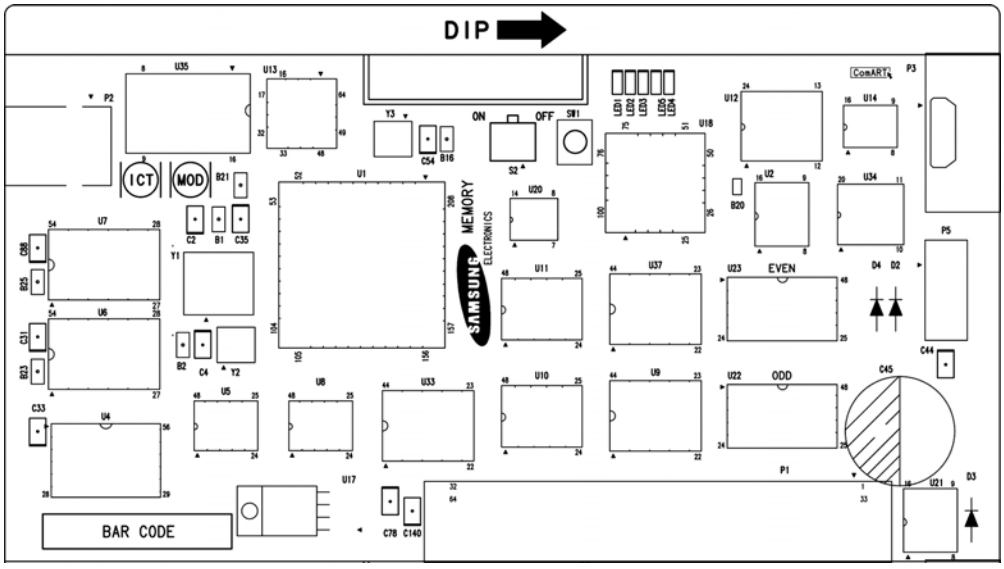


A.7.2 Solder Side

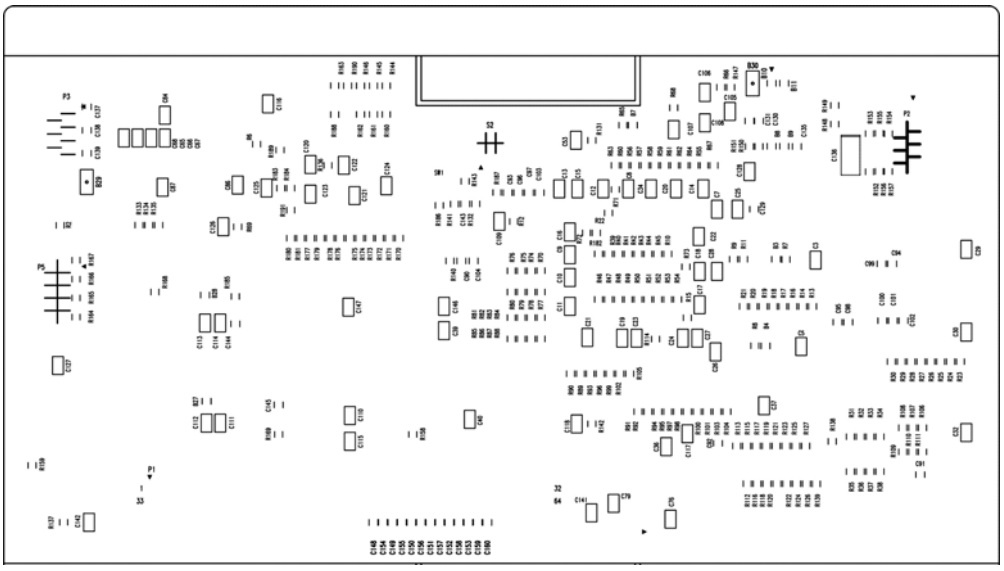


A.8 MEM 4 Card

A.8.1 Component Side

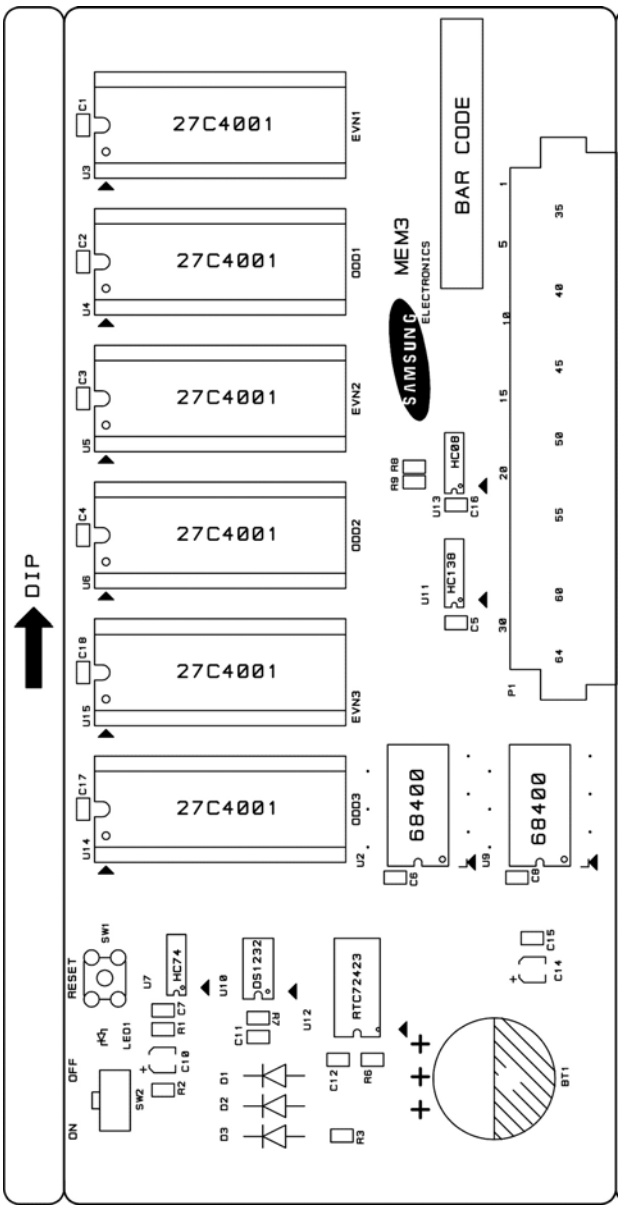


A.8.2 Solder Side



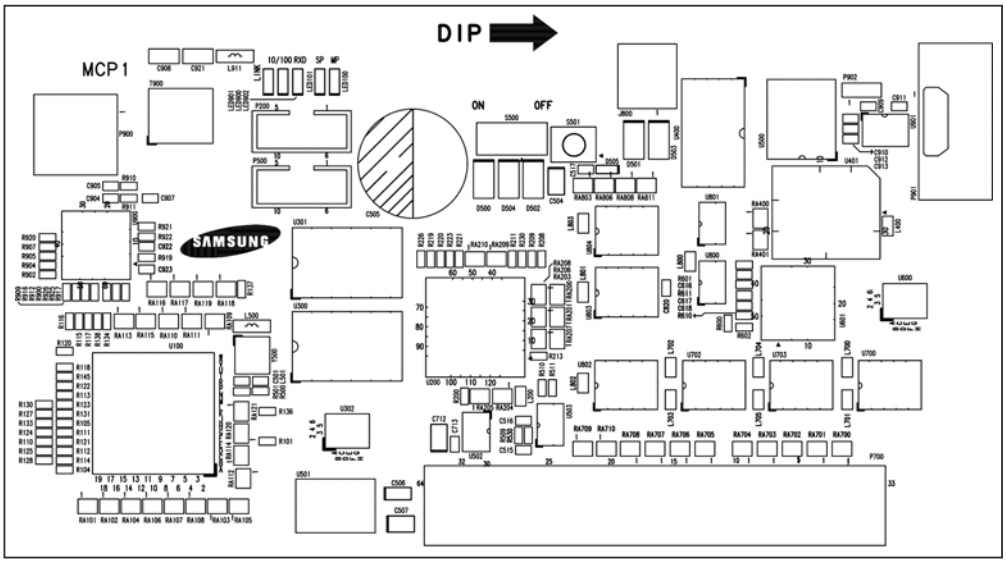
A.9 MEM 3 Card

A.9.1 Component Side

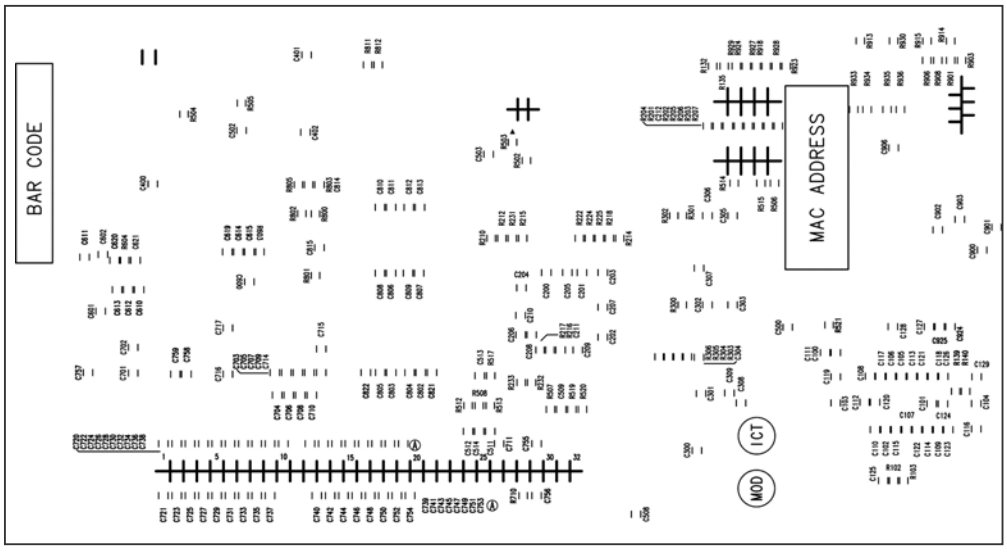


A.10 MCP 1 Card

A.10.1 Component Side

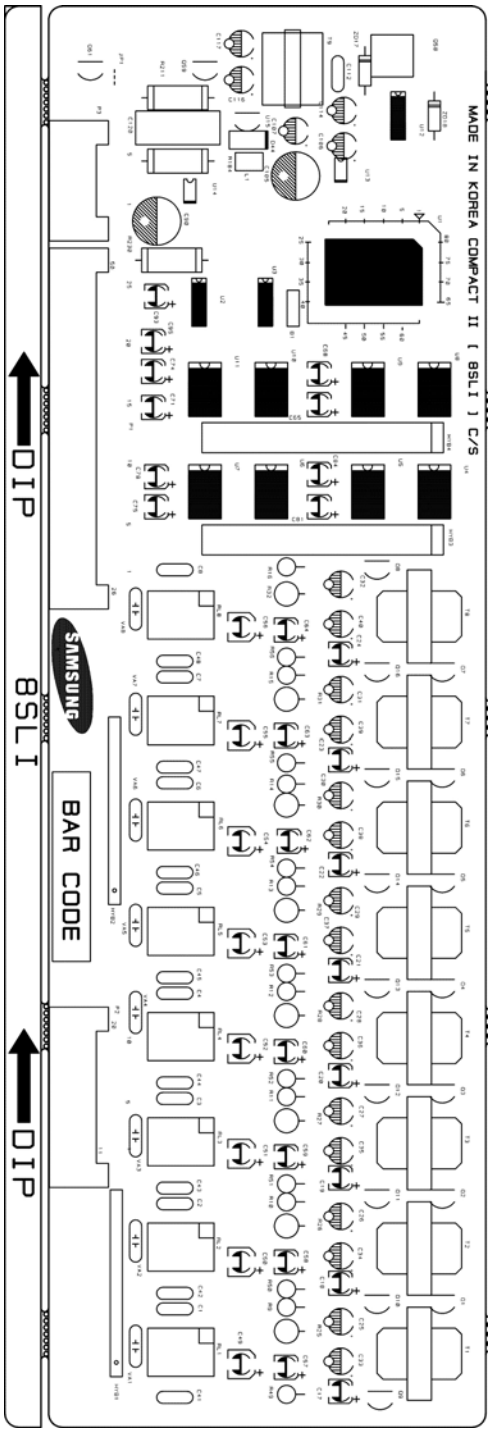


A.10.2 Solder Side

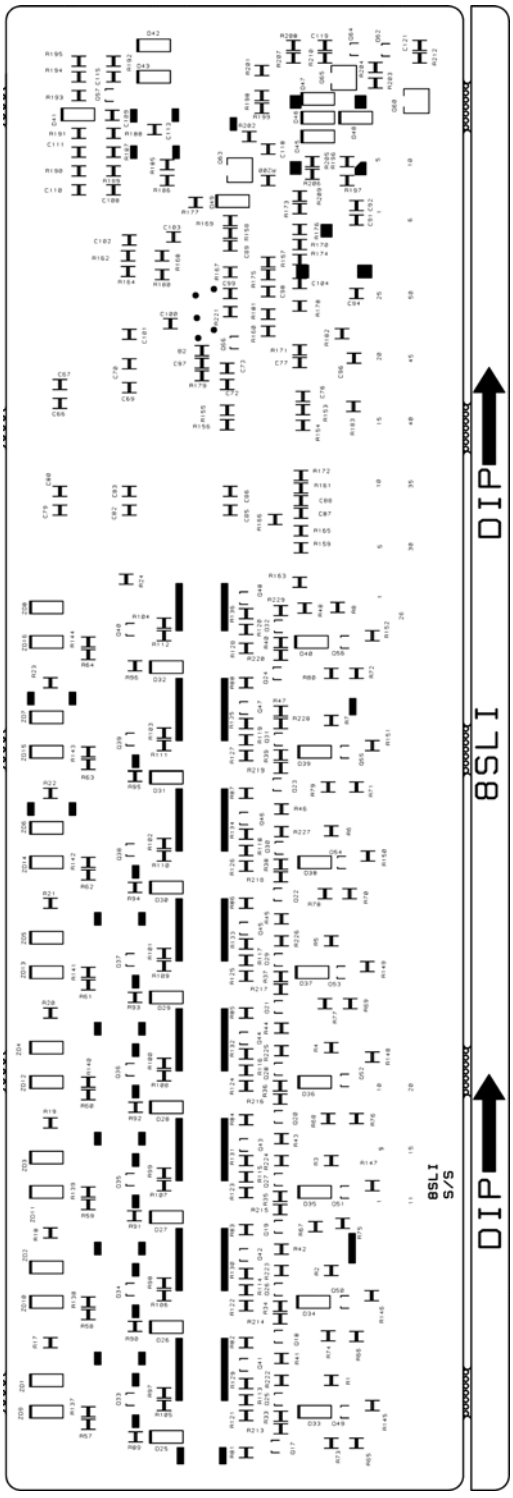


A.11 8 SLI Card

A.11.1 Component Side

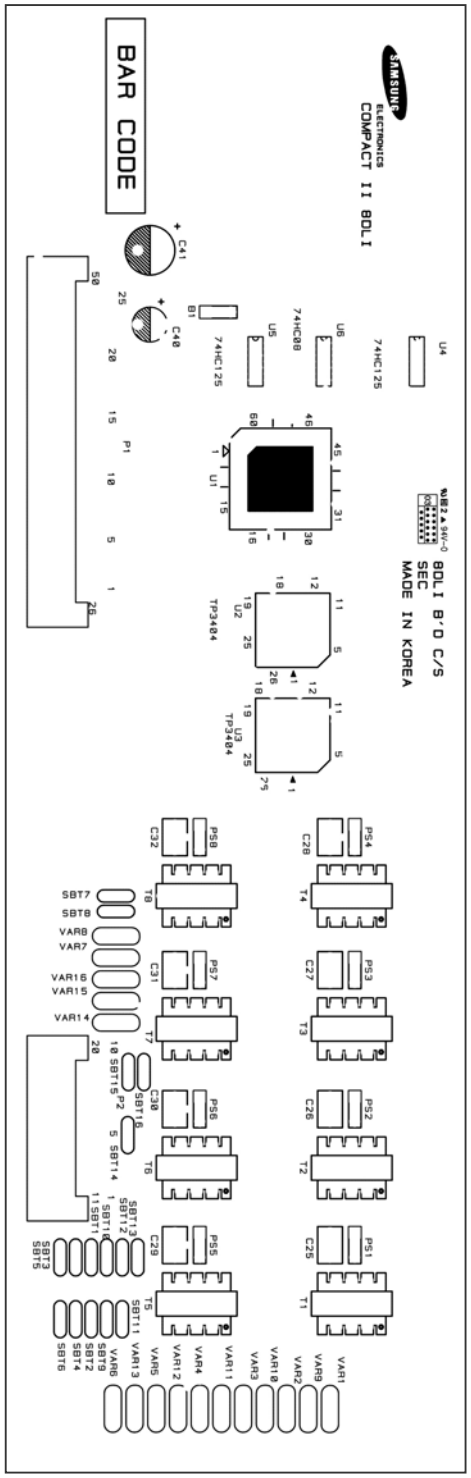


A.11.2 Solder Side

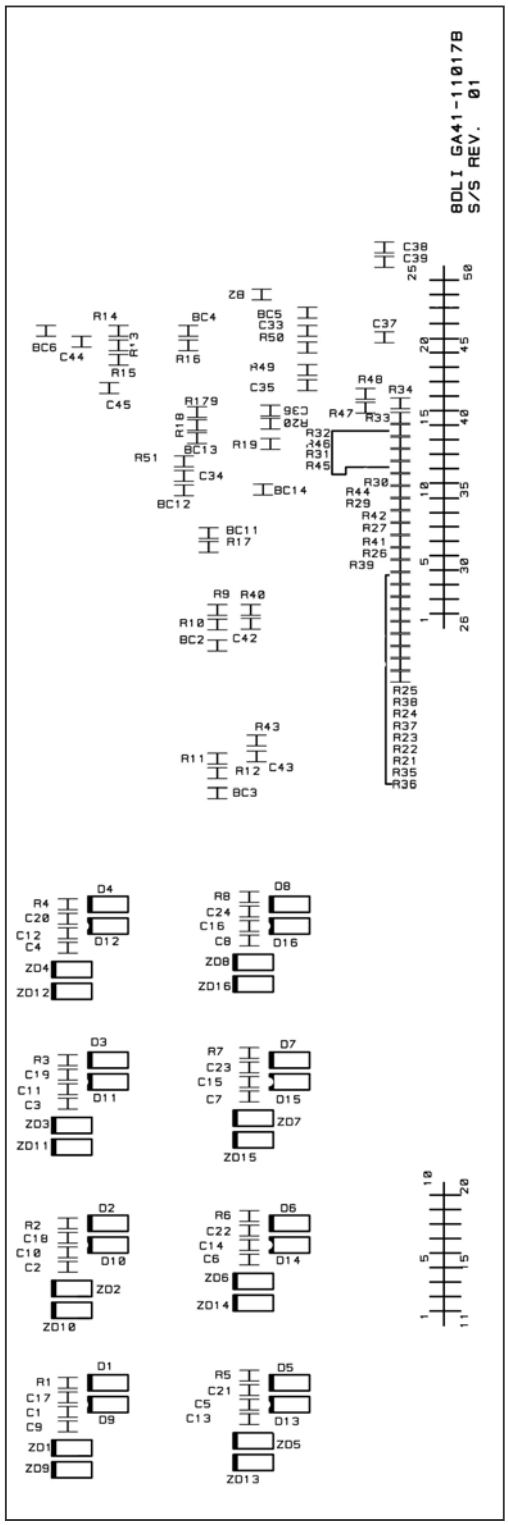


A.12 8 DLI Card

A.12.1 Component Side

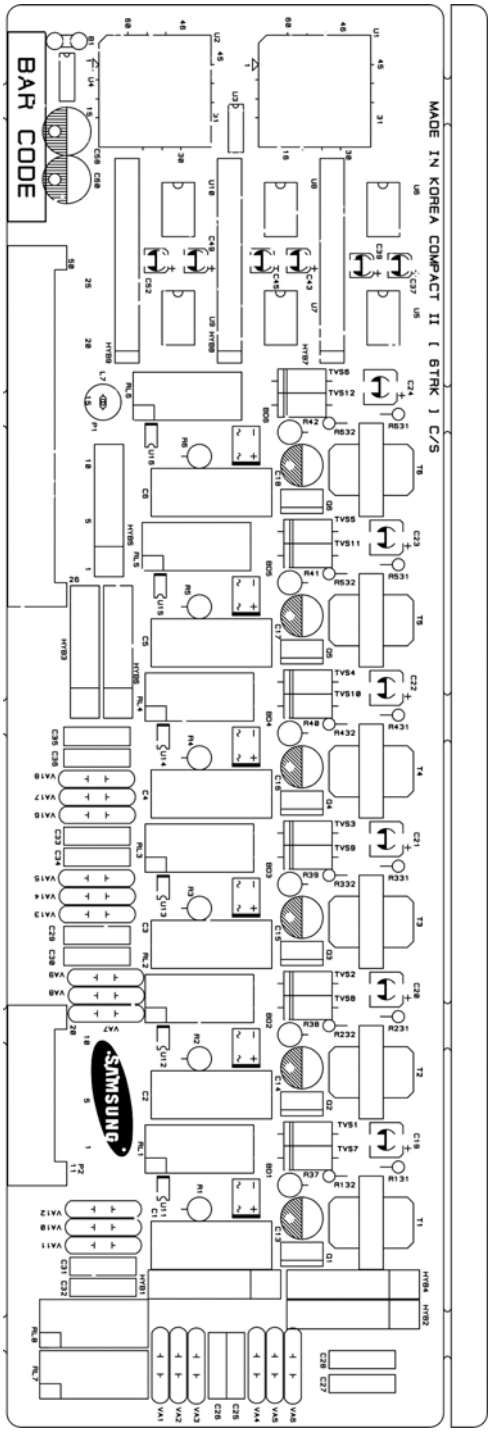


A.12.2 Solder Side

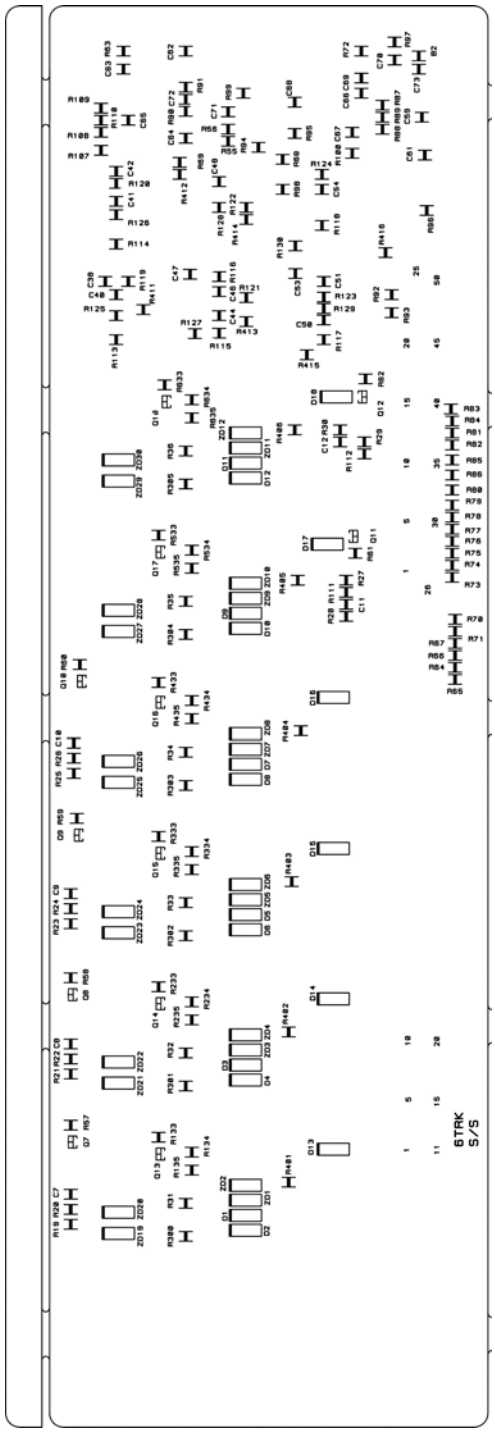


A.13 6 TRK Card

A.13.1 Component Side

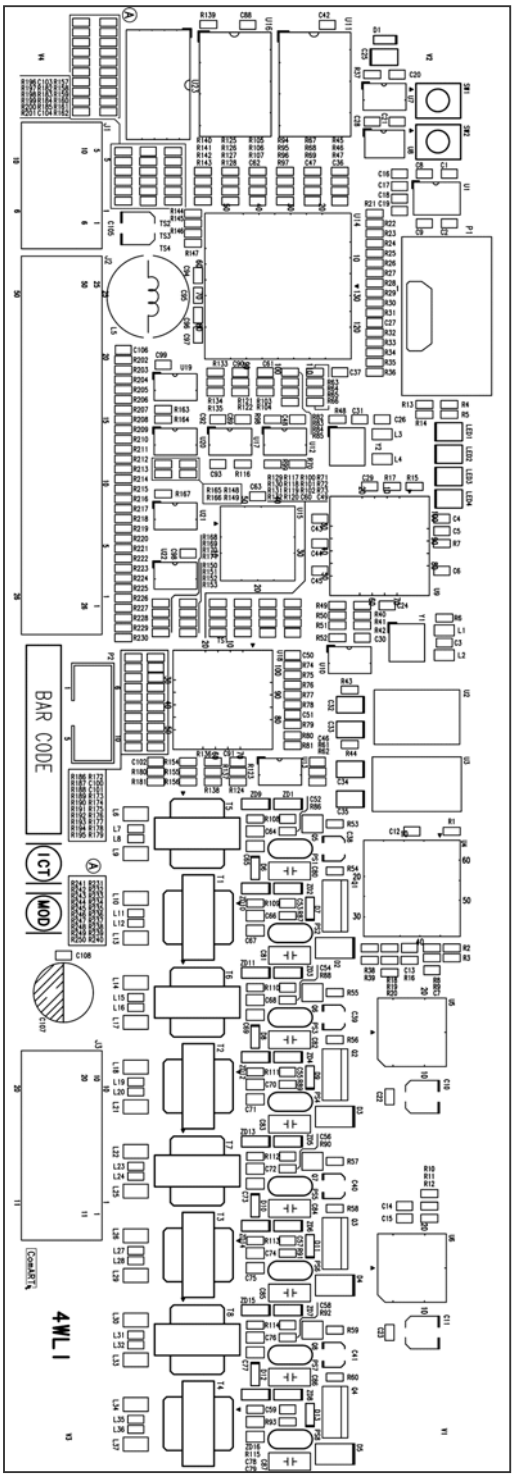


A.13.2 Solder Side

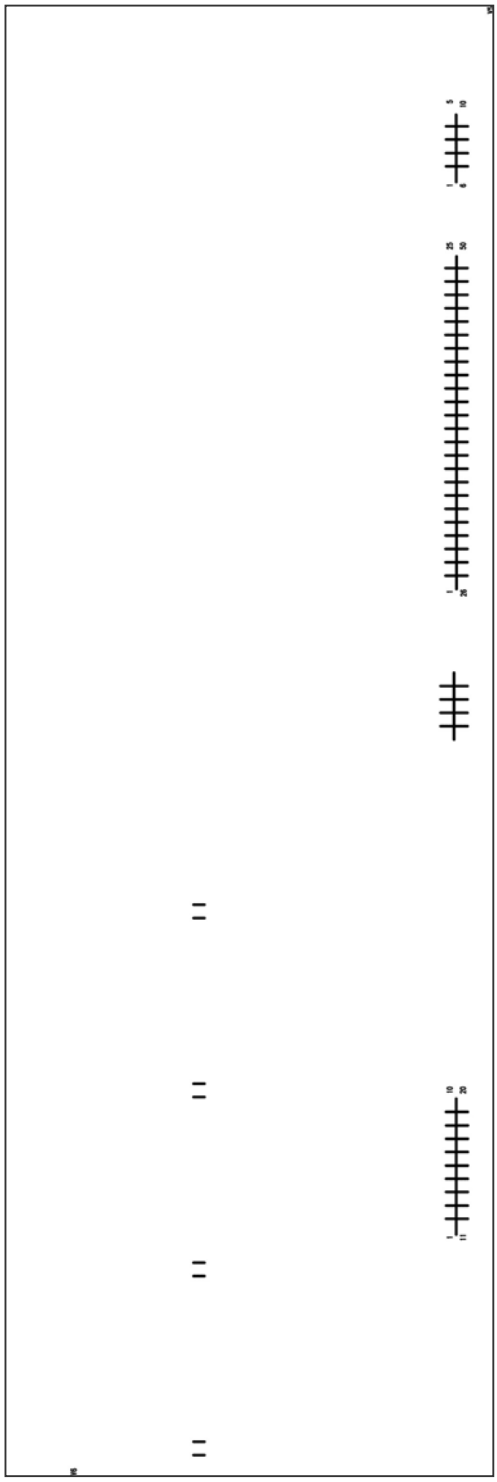


A.14 4 WLI Card

A.14.1 Component Side

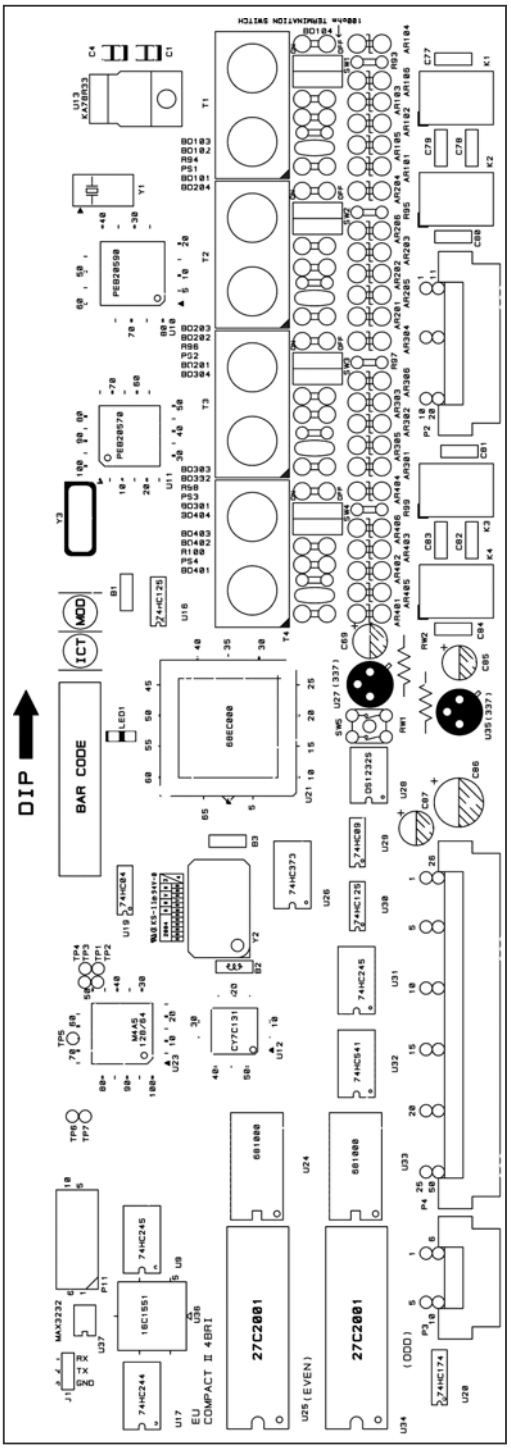


A.14.2 Solder Side

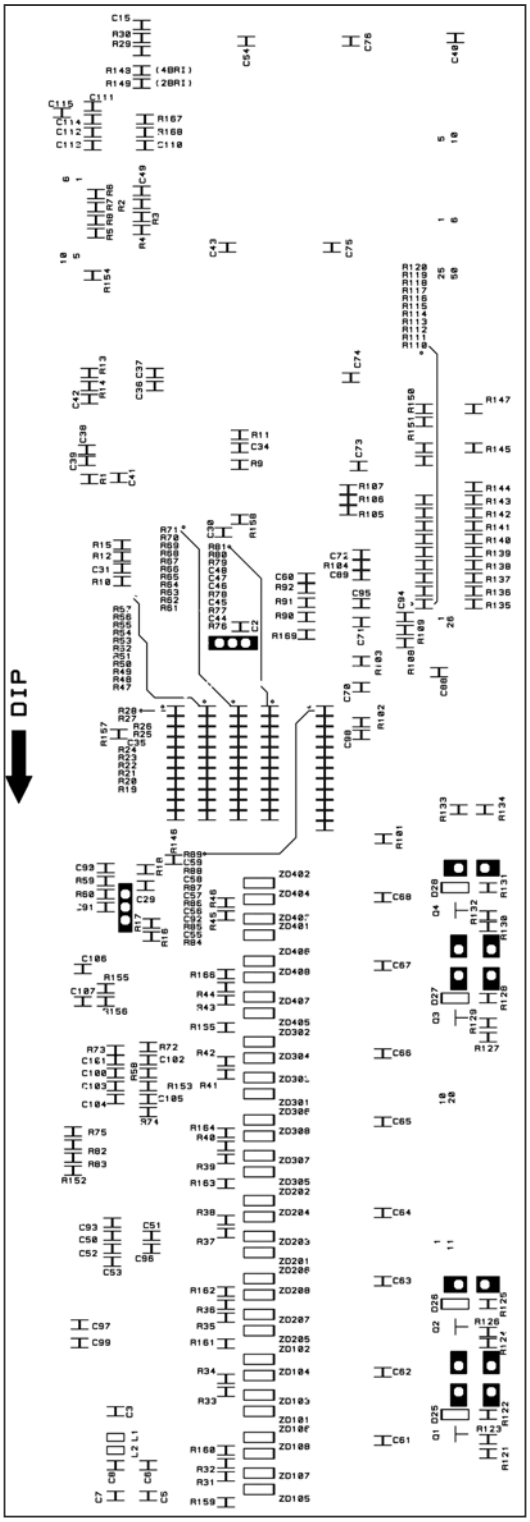


A.15 4 BRI Card

A.15.1 Component Side

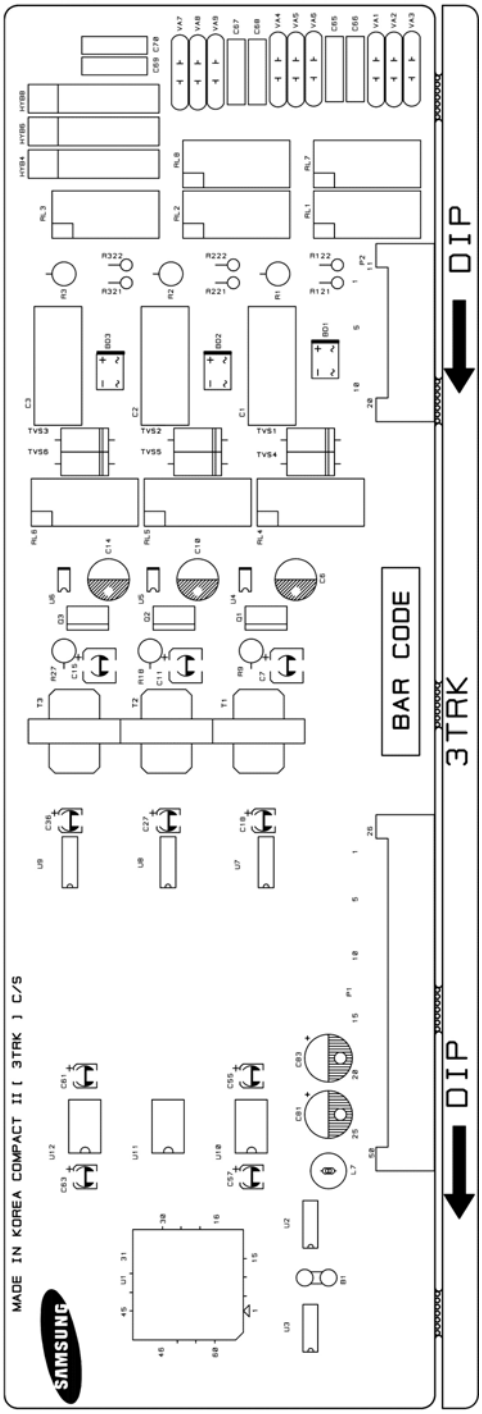


A.15.2 Solder Side

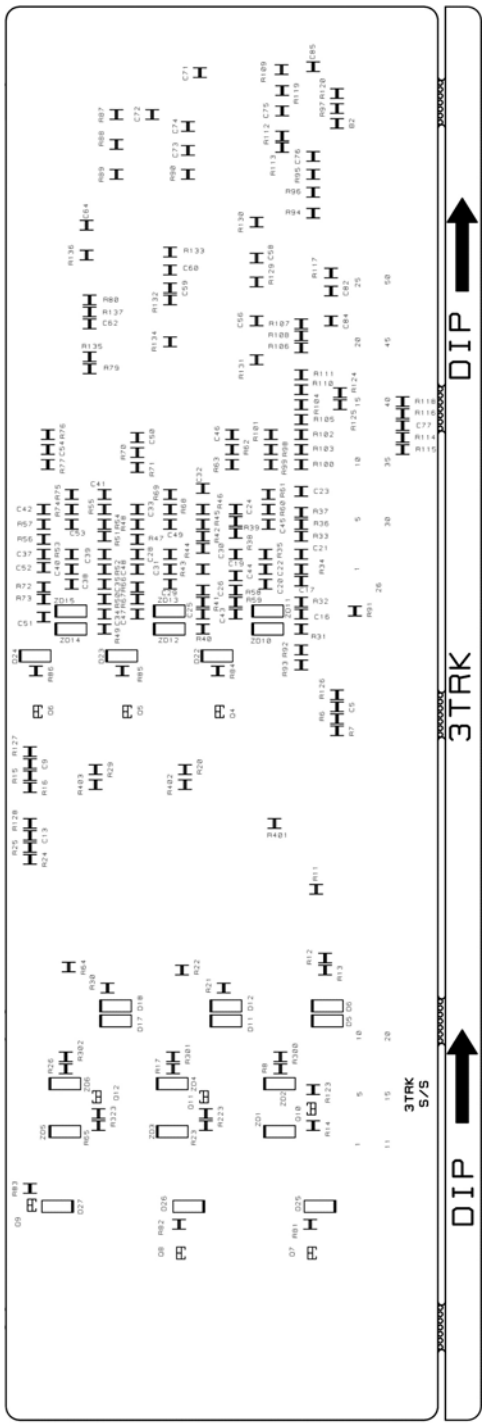


A.16 3 TRK Card

A.16.1 Component Side

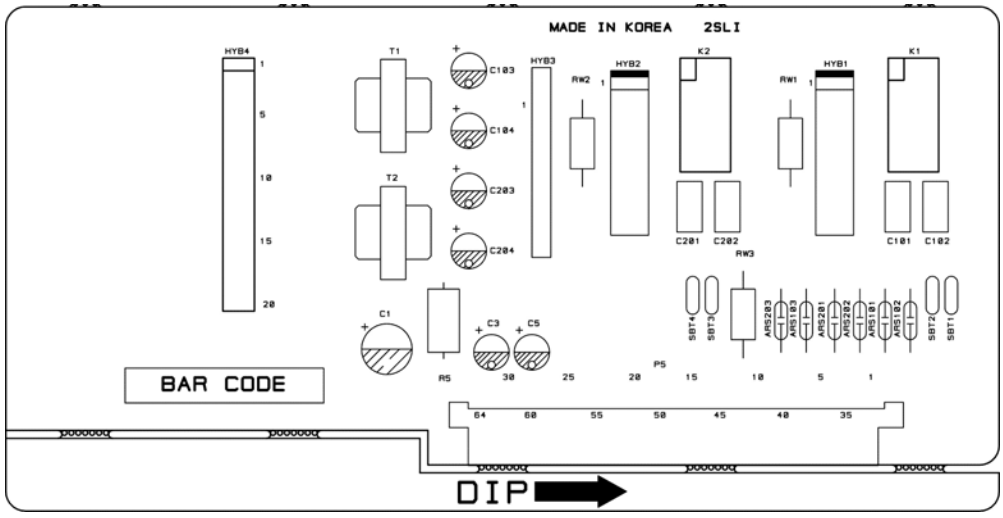


A.16.2 Solder Side

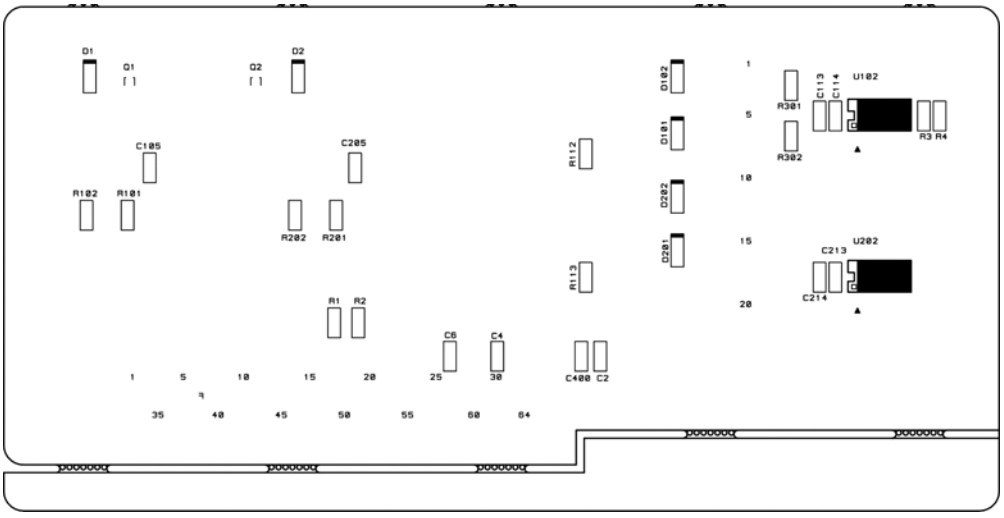


A.17 2 SLI Card

A.17.1 Component Side



A.17.2 Solder Side



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ANNEX B. Abbreviation

A

AA	Automatic Attendant
AMI	Alternative Marking Inversion
AOM	Add On Module
APLL	Analog Phase Locking Logic
ASIC	Application Specific Integrated Circuit

B

BFI	Bad Frame Interpolation
BGM	Back Ground Music
BRI	Basic Rate Interface

C

CAS	Common Associated Signal
CPLD	Complex Programmable Logic Device

D

DASL	Digital Adaptor Subscriber Loop
DCS	Digital Communication System
DGP	Dissimilar Gateway Protocol
DLI	Digital Line Interface
DMC	Digital Module Control
DPIM	Door Phone Interface Module
DPRAM	Dual Port Random Access Memory
DRAM	Dynamic Random Access Memory
DSP	Digital Signal Processor
DTACK	Data Transfer Acknowledge
DTMF	Dual Tone Multi-Frequency

E

EPLD	Erasable Programmable Logic Device
EPROM	Erasable Programmable Read Only Memory

F

FSK	Frequency Shift Keying

H

HDLC	High -level Data Link Control

I

IOM	Input Output Module
IPC	Inter Processor Communication
ISDN	Integrated Services Digital Network

K

KDB	Keyset Daughter Board
KSU	Key Service Unit

L

LAN	Local Area Network
LCD	Liquid Crystal Display
LED	Light-Emitting Diode

M

MCP	Main Control Processor
MDF	Main Distribution Frame
]MGI	Media Gateway Interface
MISC	Miscellaneous
MMC	Man Machine Communication
MMU	Memory Management Unit
MOH	Music On Hold

N

NS	National Semiconductor

P

PBA	Printed Board Assembly
PCB	Printed Circuit Board
PCM	Pulse Code Modulation
PLD	Programmable Logic Device
PLL	Phase Locked Loop
PFT	Power Fail Transfer
PHY	Physical Layer Interface
PRI	Primary Rate Interface
PRS	Polarity Reverse Sensing

Q

QDASL	Quad Digital Adaptor Subscriber Loops
QDMC	Quad Digital Module Control

R

RAM	Random Access Memory
ROM	Read Only Memory
RTC	Real Time Clock

S

SCC	Serial Communication Controller
SDRAM	Synchronous Dynamic Random Access Memory
SIO	Serial Input and Output
SLI	Single Line Interface
SRAM	Static Random Access Memory
SMC	Serial Management Controller
SVMi	Samsung Voice Mail integrated

T

TCM	Time Compression Multiplexed
TMC	Trunk Module Controller

U

UART	Universal Asynchronous Receiver and Transmitter

V

VIP	Versatile ISDN Port
VoIP	Voice over Internet Protocol

W

WLAN	Wireless LAN
WLI	Wireless LAN Interface card

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OfficeServ 100

Service Manual

SAMSUNG ELECTRONICS