Chapter 1
System Overview

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The DCS Gateway is based on a modular design philosophy which allows system capacity to be increased cost effectively. The system interface and option cards can be installed into each shelf's universal card slots to provide full optimisation and flexibility.

The DCS Gateway has capacity for up to 672 ports when equipped with three shelves (basic shelf plus two expansion shelves). Additionally, up to eight DCS Gateways can be connected together in a multi-node configuration to increase the capacity to 5,376 ports.

Each shelf has provision for two power supply cards, a processor card, an analogue ringer card and 10 universal cards.

The system is non-blocking and uses a 32-bit main processor (MCPU2). The MCPU2 stores customer data in Flash RAM, incorporates eight DTMF senders / receivers and generates all tones required to manage and administer the system. A second processor card can be installed in a dedicated slot in the basic shelf to provide a back-up processor in the event that the primary processor fails. Each expansion shelf has a shelf processor (LPM3) installed to provide control functions for the cards installed on the shelf, and to provide an interface with the MCPU2.

The universal card slots (10 per shelf) can have any combination of digital trunks, analogue trunks, digital extensions, analogue extensions or service cards. The first four universal card slots on each shelf are double density and have 32-port capacity while the remaining six slots are single density at 16 ports. The first four slots are used to install "high-density" cards such as Primary Rate ISDN cards (30 channels) or 2 Mbs digital trunk cards. If high-density cards are installed in single-density slots, the slot following the card must be left vacant.

Where there are more than 80 digital extensions connected to any shelf, a second power supply card must be installed on that shelf in the dedicated slot provided. Where there are less than 80 digital extensions on the shelf, a second power supply card may be installed to provide redundancy. Where analogue extensions are installed, a ringer card (RGPS-K) is required to provide ring signals and message-wait LED power.

Product Features

The DCS Gateway system provides various features as shown below.

Reliable Service

The DCS Gateway system provides excellent reliability and service employing the following technology:

- State of the art microprocessors
- Advanced VLSI circuit techniques
- Custom I.C design
- Duplex architecture of the control shelf
- Duplex power device
- System diagnostic and management program

Economic Design

The DCS Gateway system is also designed to provide excellent economy.

- Optimises circuit board density.
- Minimises power consumption using the CMOS technology.
- Mounts parts effectively on the control card.
- Is capable of expanding to up to eight functions in the subscriber shelf
- Is expanded easily and economically.
- Provides cost management functions including flexible long-distance communication inhibition and control of access to functions according to the class of service (COS).

Flexible Module Method

System software and hardware can be added cost effectively. Furthermore, the system interface and option cards can be installed into each shelf's universal card slots to provide full optimisation prior to expanding the system.

- 4W E&M – 8-port G4W E&M card
- DTRK-E1 – DTRK3-EW digital trunk card
- LOOP – 16-port GLOOP2 card
- ISDN PRI – PRI4 (Primary Rate Interface 4) card
- ISDN BRI – BRI (Basic Rate Interface) card

The system provides two types of extension card:

- 16DLI – 16-port digital extension card
  DLI4 (Digital Line Interface 4) card
- 16GSLC – 16-port single line telephone extension card supporting analogue telephones and message-wait telephones.

INFOLINK

The DCS Gateway system supports the Samsung proprietary protocol INFOLINK, which is the shared protocol for terminal devices and computers and which provides various services.

Diagnosis and Maintenance

The system provides various functions (described below) to help maintain the system more conveniently.

Maintenance & Administration Program (MAP)

MAP is the DCS Gateway operating software for maintaining the system. It is installed in a PC which is directly connected with the DCS Gateway. Information can be easily and quickly searched, edited and controlled using the MAP.

On-Line Board Exchange

During maintenance, circuit boards can be exchanged without the need to power down the system. A BDR cord is connected to the front of the board to be exchanged to maintain power to the board during the exchange.

Diagnosis Function

Diagnosis is performed continuously by the system. You are alerted immediately if there is a failure within the system.

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