

# Introduction to the Samsung DCS Gateway System



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This introduction provides you with a list of the main hardware, software and programming features of the DCS Gateway System, and should be used for quick reference only. For further information on any item listed, refer to the appropriate manual on this CD.

## 1. Environment

- 1.1 Temperature: 0 – 45°C
- 1.2 Humidity: 10 – 90% non condensing
- 1.3 Separate 'clean' fused spur
- 1.4 1.5 metres clearance on all sides
- 1.5 Well lit on all sides

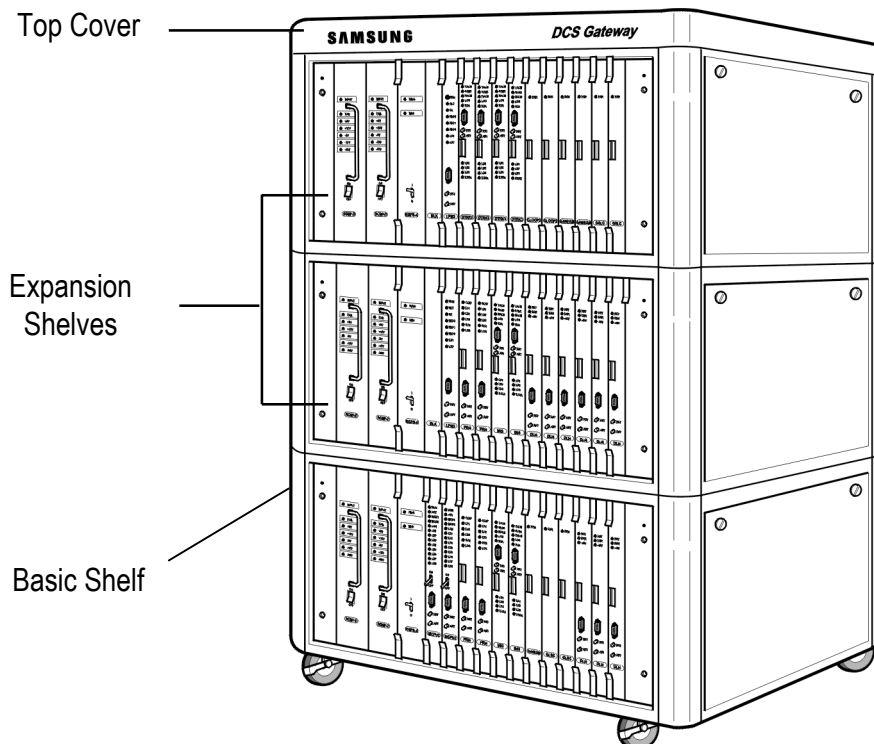
## 2. Hardware

- 2.1 Multi-Node configuration
- 2.2 Each Node can contain up to three shelves
- 2.3 Each shelf has:
  - i. 2 PSU slots
  - ii. 1 Ringer slot
  - iii. 2 Control slots
- 2.4 4 high-density universal slots (32 ports per slot)
- 2.5 6 normal-density slots (16 ports per slot)
- 2.6 All shelves are the same except:
  - i. Main shelf contains the CPU(s)
  - ii. Each expansion shelf contains an LPM
  - iii. Main shelf houses the 220v mains and battery connections
  - iv. Main shelf contains the serial and LAN ports
- 2.7 LAN port used for all CTI applications apart from VoiP which have their own LAN ports.
- 2.8 Serial ports used for PMS, SMDR, MAP, RMAP, etc.
- 2.9 Peripheral connections use 'Male' centronic type connectors (opposite to the DCS).
- 2.10 ALL connections are made from the rear of the shelves
- 2.11 All cards with 'control' circuitry have RS232 ports on the front for monitoring purposes.
- 2.12 All cards can to be inserted or removed 'hot' with the aid of a BDR cable.
- 2.13 The slot numbering of each shelf varies according to each document/author. Physical slots 1 to 4 are high-density slots of 32 ports each; slots 5 to 10 are normal-density slots of 16 ports each.
- 2.14 The maximum number of ports per shelf is therefore:  $4 \times 32 + 6 \times 16 = 224$ .
- 2.15 Maximum number of ports per node is:  $3 \times 224 = 672$

- 2.16 Maximum number of ports per system is  $672 \times 3 = 2016$ . It is recommended that the max. configuration is kept to three nodes.
- 2.17 The correct numbering for the 10 universal slots using 'Hex' is:

Physical Slot	Logical Slot
1	0/1
2	2/3
3	4/5
4	6/7
5	8
6	9
7	A
8	B
9	C
10	D

- 2.18 Card ports are numbered from 0 to F.
- 2.19 Shelves are numbered from 0 to 3. Shelves 0 to 2 are the physical shelves whereas 3 is a virtual shelf.
- 2.20 The virtual shelf can be configured with 224 ports all of which can be used.



### 3. Software

- 3.1** Software is separated into three main areas:
  - i. Main Programme
  - ii. Common Database
  - iii. Node Database
- 3.2** All programming is held in Flash EPROMs; the CPU will therefore hold all programming indefinitely.
- 3.3** Firmware is contained on most peripheral cards. Most cards use Flash EPROMs; BRI uses normal EPROMs.
- 3.4** System runs from RAM. During start-up, all files are de-compressed from Flash RAM and loaded into RAM (hence approx. 10 minutes start-up from a 'warm' start).
- 3.5** Software upgrades can be performed in two ways:
  - i. On-Line install. System is running, software is loaded into RAM. On completion, RAM is loaded into Flash RAM, the CPU is rebooted, and the new programme loaded. Main advantage is that telephony is only lost whilst CPU is re-booted, therefore upgrade could be carried out during the day and the CPU re-booted after hours.
  - ii. Off-Line install. System is not running, software loaded directly into Flash RAM. On completion, CPU is kick started. Main advantage is faster loading time; CPU is not doing anything else.

### 4. Programming

- 4.1** All programming is done from a PC with proprietary software.
- 4.2** Three software programmes are used:
  - i. IT (Installation Tool)
  - ii. MAP (Maintenance and Programming)
  - iii. RMAP (Remote MAP), not to be confused with using MAP remotely!

Note – both MAP and IT require approx. 150Mb of hard disk each. PC must have a CD ROM drive and be capable of a screen resolution of 1024 x 768 pixels

- 4.3** Only keys can be programmed from keyphones
- 4.4** Initial database is built up using IT
- 4.5** Customising is done live using MAP
- 4.6** Alarming is done using RMAP

## 5. Cards

### 5.1 MCPU2

Main central processor; 1 or 2 can be installed. The second CPU is an exact copy of the first. On installing the second CPU, the main programme and the customer databases are loaded into RAM. Only one CPU will run the system and if one fails the other will take over seamlessly. Contains the conference chip and 8 DTMF receivers/senders, amongst other things.

- i. **4SW** daughterboard (16 DTMF receiver/senders; if mounted on the CPU, the CPU's 8 DTMF senders/receivers will be disabled). This daughterboard can also be mounted on the LPM3. No DTMF receivers/senders are on the LPM3, so no loss is experienced when mounting the 4SW on this card.
- ii. **LAN** daughterboard (CTI applications)
- iii. **TIM** daughterboard (Time slot extender, required for multi-shelf system or to increase the 3 serial ports to 6 serial ports).

### 5.2 LPM 3

Shelf extender, 1 required in each expansion shelf.

### 5.3 RCMP-D

Power supply, 1 required per shelf. If more than 80 key phones are to be used in this shelf, a second RCMP-D is required. A second RCMP-D can be installed purely as back-up. Both RCMP-Ds will run in parallel: should one fail the other will take over and an alarm can be generated.

### 5.4 RGPS-K

(Ringer and message waiting power supply). Required to ring analogue extensions on its shelf; also used to power the message waiting lights on a POT (100v).

### 5.5 DLI

Digital line interface. Keyphone card. Can be configured by means of 'jumpers' to work as a 32-port card (if installed in a high-density slot). This would mean 16 physical connections and 16 KDBs. If the card is installed in a normal slot, it can be configured for 16 keyphones or 8 plus 8 KDBs.

### 5.6 GSLC

Single line (POT) card. Contains 16 circuits with message waiting facility. Whether message waiting is activated or not is dependant on the programming.

### 5.7 GLOOP2

Analogue trunk card. Contains 16 loop start trunks. MPD is supported with additional MPD detectors fitted.

### 5.8 PRI4

Primary Rate Interface card. 32-port common channel E1 trunk. Supports Euro ISDN and QSIG depending on firmware fitted. Can be configured as 'user' or 'network', i.e. can act as a 'Main Exchange'.

**5.9 BRI**

Basic Rate Interface card. Can be configured in either T or S mode. 8 x ISDN2. T mode supports P-P DDI *only*; S mode supports both P-P & P-MP modes.

**5.10 G4WE&M**

4 wire E & M card

**5.11 INI3**

Inter-node networking interface. 32-channel inter-node 2Meg link.

**5.12 ITM**

Internet Trunk Module (VOiP card).

**5.13 ITMSUB**

Back connector for the ITM card. Standard back connector must be replaced with this one without filters.

**5.14 MFM**

16 additional DTMF senders/receivers. Only required when extremely high analogue traffic is generated.

**5.15 AVA2**

Automated voice announcement card. 15 channels each with a total of 32 seconds worth of messages. These messages can be used for ACD working, MOH, etc.

**5.16 PFT**

Power Fail Transfer card. This card is mounted on the right-hand side of the cabinet and is capable of transferring 16 lines to 16 SLTs in the event of a power failure. Each shelf can contain a single PFT board.

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