
1. INTRODUCTION

1.1 Manual Application

This document provides detailed information covering the configuration of the SUMMIT IP database and maintenance of the SUMMIT IP. The manual also details the power-up and initialization routines and the Station Web Portal.

The manual is written for the experienced installer with knowledge of telephony terms, and functions of small and mid-sized business telecommunications systems.

1.2 Manual Organization

This manual is organized in ten (10) major sections including:

- **Section 1 Introduction:** This section introduces the content and organization of the manual.
- **Section 2 System & Admin Information:** In this section general information on System capacities, power-up routines and the system initialization process are detailed. Also, this section discusses the process for registration of IP and softphones with the SUMMIT IP system.
- **Section 3 Station Administration:** This section provides details on configuring the system employing a station allowed administrative access. Step by step procedures are given along with brief but concise descriptions of the various configuration parameters and available settings.
- **Section 4 Web Administration:** Similar to the Station Administration section, the Web Administration section gives step by step procedures and descriptions for the configuration parameters and settings available using a Web browser.
 - **Section 4.5 Maintenance:** The Maintenance section provides details on managing the SUMMIT IP including database upload and download, software upgrade, and user access management using the Web browser interface.
 - **Section 4.6 Station Program:** This section discusses the configuration of the features and functions available in the portal.
- **Appendix A:** The Station and Attendant Station User Program codes are listed with the associated function. These fixed codes are available at the iPECS IP or LDP phones to configure basic functions such as ring tones, activate features and assign features and functions to Flex buttons.
- **Appendix B:** A complete listing of the eight basic Flexible Numbering Plans. One is selected as the system's Flexible Numbering Plan. Each of the basic Numbering Plans includes all feature and resource access codes, and any individual code can be changed.
- **Appendix C:** This Appendix includes a detailed listing of all the configurable

parameters by Program group and includes the default values for each parameter. It is only for Station Administration.

1.3 S/W & H/W Terminology

The core system software is employed with the hardware of several iPECS systems, each with their own hardware designations. The software employs terms that may differ from the Hardware and Feature manuals as indicated in the below list.

- VSF or VSF Gateway , referring to the integrated AA/VM built into the KSU Main board and the VVMU
- CO/IP or CO/IP Line, referring to external network connections, outside Lines

2. SYSTEM & ADMIN INFORMATION

2.1 System capacities

The Vertical SUMMIT IP is available in several hardware configurations based on the Main board of the KSU. Upon initialization, the software will structure a database for the maximum possible station and CO/IP Line configurations. Thus, the software port count capacities will differ from the hardware count however, the hardware limitations always apply. The total System ports supported by the software include the Station ports, CO/IP Line ports and ports for various options including the integrated AA/VM, Miscellaneous ports, etc. Other than the Station and CO/IP Line ports, the hardware and software capacities are the same. The capacities relative to the software are provided in the table below.

Table 2.1-1 SUMMIT IP Software Capacities

Item	Capacity
CO/Trunk lines	Max. 74
Stations	Max. 140
Attendants	4
LAN port	2(1 each, KSU and VVMU)
Modem Channel	1(MODU)
Serial Port(RS-232C)	1
USB(2.0) Host port	1
Alarm/Doorbell input	2 (1 per KSU)
External Control Relays	2 (1 per KSU)
Music Source Inputs	1 Internal: select one of 13 melodies 1 External source input 5 SLT ports 3 VSF announcements
Power Fail Circuit	Max. 6 (1 per KSU, EKSU, CH204, CH408, CS416)
VSF Device 1: Built-in AA/VM w/MEMU (VMU)	4 channels(2 channels by default, 1 channel by license), 1 hour 15 hours(by license)
VSF Device 2 (VVMU)	1 hour(by default), 4 channels and 15 hours(by license)
Conference channels	148, 3-13 party or unlimited 3-party
WTIB	1
DECT Phones	48
Built-in VoIP channels	8(2 channels by default, 6 channels by license)
VVMU (VMIB) VoIP channels	8(by license)
IP Stations and SIP Trunks	48 port (32 Stations+16 SIP Trunks)
External Page	1 port
Internal Page	35 zones
System Speed Dial	3000 numbers, 23 digits each
System Speed Dial Zones (Groups)	10 zones
Station Speed Dial	100 per station, 23 digits each (max. 4000 numbers)
Last Number Redial	10 numbers, 23 digits each
Save Number Redial	1 number of 23 digits

Item	Capacity
Call Log(Outgoing/Incoming/Missed Call)	15 ~ 50, 23 digits (programmable)
DSS Consoles per Station	3
SMDR buffer	5000
CO Line Groups	20
Station & Hunt Groups	40
Station & Hunt Group Members	70
Pickup Group	50
Pickup Group Member	140
Conference Groups - System	40
Conference Groups - Station	20 per station
Executive/Secretary pairs	36
Authorization Codes	500 (Station: 140, System: 360)

2.2 Slot configuration

The built-in interface ports, ports of the optional Interface boards and the optional Function boards are organized into Slots. For the built-in and optional board interfaces two Slots are defined, a Slot for the Stations and a Slot for the CO/IP Lines. The Function boards use a single Slot to identify the board location. The Slots are used during the initialization routines, refer to section 2.3, to identify the installed equipment and establish the numbering for the Stations, CO/IP lines, and Function board channels. An additional Slot (Slot 18) is used by the software to identify the Conferencing channels as a virtual board.

The figure below depicts the Slot locations and Table 2.2-1 & 2.2-2 lists the Slots, the hardware designation for boards applicable for the Slot and the software reference for the type of interfaces.

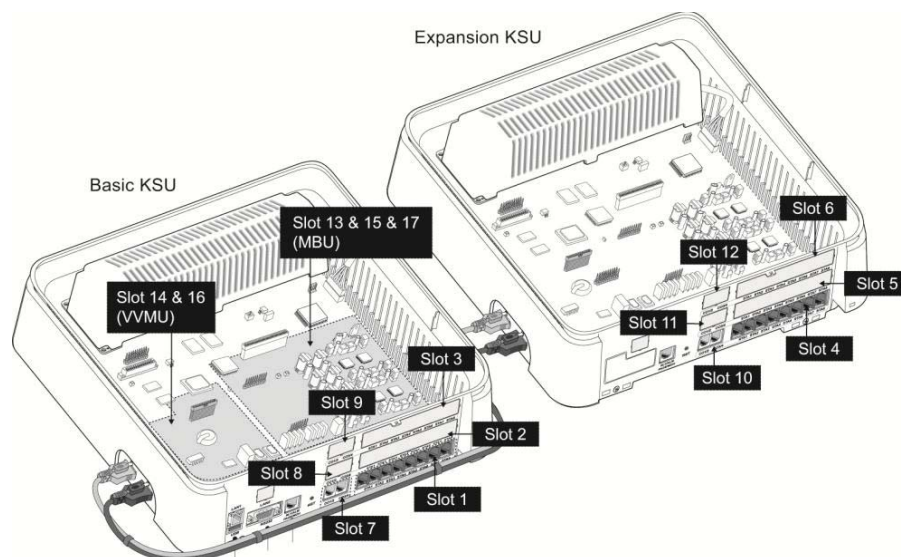


Table 2.2-1 SUMMIT IP Slot Configuration (Standard)

Slot	KSU	H/W Reference	S/W Reference
1	KSU	Built-in KSU Station interface group KSUA and KSUI: 1-DKT & 7-Hybrid KSUAD & KSUID: 8-DKT & -4 SLT	HYIB8 DSIB12
2	KSU	CH204 or BH104 CH408, BH208 or HYB8 CS416 or SLIB16 WTIB4	HYIB4 HYIB8 SLIB16 WTIB4
3	KSU	CH204 or BH104 CH408, BH208 or HYB8 CS416 or SLIB16 WTIB4	HYIB4 HYIB8 SLIB16 WTIB4
4	EKSU	Built-in EKSU Station interface group 8-Hybrid	HYIB8
5	EKSU	CH204 CH408 or HYB8 CS416 or SLIB16	HYIB4 HYIB8 SLIB16
6	EKSU	CH204 CH408 or HYB8 CS416 or SLIB16	HYIB4 HYIB8 SLIB16
7	KSU	Built-in KSU Station interface group KSUA and KSUAD: 4-CO Line KSUI & KSUID w/PRIU: KSUI & KSUID w/BRIU2	LCOB4 PRIB BRIB2
8	KSU	CH204 CH408 or CS416 BH104 BH208	LCOB2 LCOB4 BRIB1 BRIB2
9	KSU	CH204 CH408 or CS416 BH104 BH208	LCOB2 LCOB4 BRIB1 BRIB2
10	EKSU	Built-in EKSU Station interface group 4-CO Line	LCOB4
11	EKSU	CH204 CH409 or CS416	LCOB2 LCOB4
12	EKSU	CH204 CH408 or CS416	LCOB2 LCOB4
13	KSU	Built-in KSU VoIP channels	VOIU
14	KSU	VVMU VoIP channels	VOIB
15	KSU	Built-in 4-port 1-Hour AA/VM	VMIU
16	KSU	VVMU 4-port, 15-hour AA/VM	VMIB
17		Miscellaneous connections	MISU
18	KSU	Virtual Slot for Conferencing channels	

Table 2.2-2 SUMMIT IP Slot Configuration (North America)

Slot	KSU	H/W Reference	S/W Reference
1	KSU	Built-in KSU Station interface group KSUAD & KSUID: 8-DKT &-4 SLT	DSIB12
2	KSU	CH204 CH408, HYB8 CS416 or SLIB16 WTIB4 DTIB8 or CD408	HYIB4 HYIB8 SLIB16 WTIB4 DTIB8
3	KSU	CH204 CH408 or HYB8 CS416 or SLIB16 WTIB4 DTIB8 or CD408	HYIB4 HYIB8 SLIB16 WTIB4 DTIB8
4	EKSU	Built-in EKSU Station interface group 8-Hybrid	HYIB8
5	EKSU	CH204 CH408, HYB8 CS416 or SLIB16 DTIB8 or CD408	HYIB4 HYIB8 SLIB16 DTIB8
6	EKSU	CH204 CH408 or HYB8 CS416 or SLIB16 DTIB8 or CD408	HYIB4 HYIB8 SLIB16 DTIB8
7	KSU	Built-in KSU Station interface group KSUAD: 4-CO Line KSUID w/PRIU:	LCOB4 PRIB
8	KSU	CH204 CH408, CS416 or CD408	LCOB2 LCOB4
9	KSU	CH204 CH408, CS416 or CD408	LCOB2 LCOB4
10	EKSU	Built-in EKSU Station interface group 4-CO Line	LCOB4
11	EKSU	CH204 CH408, CS416 or CD408	LCOB2 LCOB4
12	EKSU	CH204 CH408, CS416 or CD408	LCOB2 LCOB4
13	KSU	Built-in KSU VoIP channels	VOIU
14	KSU	VVMU VoIP channels	VOIB
15	KSU	Built-in 4-port 1-Hour AA/VM	VMIU
16	KSU	VVMU 4-port, 15-hour AA/VM	VMIB
17		Miscellaneous connections	MISU
18	KSU	Virtual Slot for Conferencing channels	

2.3 Initialization

The system should be initialized before starting the configuration to assure a known starting point and automatically register installed boards. Also, if the Nation Code requires modification, the system will be initialized in the process so as to establish tones and gains appropriate for the region. You can initialize the system using the Initialization switch (Dip-switch SW1, pole-2) in the KSU or using the software Initialization PGM 450. Note the former must be used to change the Nation Code as detailed section 3.3.1.

2.3.1 Basic Power-Up Routine

When the KSU power switch is turned On or the KSU Reset button is pressed with power ON, the system will initiate the “Power-up” routine. During the Power-Up routine the system checks the Initialization switch and, if the switch is in the Off position, the system will perform the basic Power-up routine; clear all scratch-pad memory, load run-time programs, establish communications with each registered Interface board, Function board, iPECS IP Phone and LDP Phone, send Restart commands and load appropriate settings to the boards and terminals. The KSU also will attempt to communicate and register the EKSU. If a registered board or terminal does not respond after several attempts, the system places the device in an out-of-service mode but maintains the configuration of the device. Once the Power-up routine is complete, the system will conduct normal operations.

2.3.2 Registration of Boards

If the Initialization switch is in the ON position, in addition to the Power-Up routine, the system will perform the full Initialization procedure. During initialization, the system attempts to communicate with the board in each Slot, starting with Slot 1 and progressing sequentially through the slots, to determine the installed equipment. If the board is installed, the Slot number (“Sequence Number”) is registered, an “Order number” is determined and the MPB MAC and IP address are assigned. Using “Order number”, which is the order that devices of the same type (CO/IP Line, Station, VSF device, etc.) register, the system assigns the Station numbers and CO/IP Line numbers.

An exception to the above is the MAC and IP address of the VOIB which covers the VoIP channels on the VVMU. The VOIB has a separate MAC address and the IP address is assigned from the system. Note this IP address can be modified at a later time.

Once the system is operational and the database configured, the system can be expanded manually by registering the optional boards as detailed in PGM 235, Registration Table.

2.3.3 Initial Station and CO Numbering

The default Station Numbering Plan assigns a Three-digit number to each station port. Starting at the first (left) port of Slot 1, the system assigns the Station Numbers beginning at “100”. The Station number increments for each port in the slot, moving to the right until reaching the last port. The process is repeated for each Station slot (1 to 6) in sequence assigning consecutive Station Numbers.

Note the Station Number Plan can be two to four digits and the Station Number for each port can be modified individually.

Slots 7 to 14 are then registered and, since they are CO/IP Lines, the Order numbers 1 to 8 are used to number the CO/IP Lines. The process is repeated for each device type.

2.3.4 IP Phone Registration

Unregistered iPECS IP Phones attempt to discover and register with a local (on the same LAN) iPECS system, in this case the SUMMIT IP. The phone will send a registration request to the MPB IP address. If no response is received, the phone will send a multi-cast request. With the request, the phone will send the MAC address. This address must be assigned in the PGM 235.

When the system receives the request, the MAC address received is compared to the Registration table and, if matched, the phone is registered, it is given the next available sequence number starting at “19”, and assigned the next available Station Number.

If the iPECS IP Phone is configured as a remote device, it will send a registration request to the iPECS system at the configured IP address. When the system receives the request, it is processed normally except the MAC address must be assigned in PGM 442 Remote Device Register.

2.3.5 Default Database

Based on the installed equipment, the system populates the database with the default values, refer to Appendix C. Once the database is set to default, the system will conduct normal operations.

2.4 Virtual LANs

iPECS devices (modules and terminals) support the IEEE 802.1p/Q standard for Virtual LAN operation. The VLAN priority and ID (tag) are assigned in the Web Admin of each module and terminal. For the MPB, assign VLAN parameters using the command line maintenance interface through the RS-232 port or a TCP/IP connection with the following commands:

```
maint> vlanset pri [value]           // priority from 0 to 7  
maint> vlanset id [value]           // vlan id value (0 to 4094)  
maint> vlan start                     // start.
```

2.5 General Admin and Menu Structure

The Vertical SUMMIT IP can be configured to meet each customer's individual needs. System configuration may be accomplished by entering the "Program mode" at an assigned Admin Station or by pointing a Web Browser at the IP address of the, MPB. Section 3 provides a description for data entry using the Admin Station. Section 4 discusses configuration employing the Web browser. Note that some parameters are available through Web Admin and not the Keyset Admin.

Configurable items are organized as "Data" groups with a common affect, i.e. station, system, numbering plan, etc. Items are further grouped into "Programs" forming a multi-layered menu structure as the following list. Each of the Program groups is assigned a three digit "Program" (PGM) code used to access the group from an Admin Keyset. The top level Data groups include:

- System ID & Numbering Plans
- Station Data
- Board Based Data
- CO/IP Line Data
- System Data
- Station Groups Data
- ISDN Line Data
- SIP Data
- Tables Data
- Networking Data
- Zone Data
- Device Login
- DECT Data
- Green Mode
- Initialization

The default and range of values for each configurable parameter are provided in Appendix C. The index and charts are helpful references when entering data into the system's database.