



Front panel of 9-channel SGU



Back panel of 9-channel SGU

SATELLITE GATEWAY UNIT (SGU)

The Satellite Gateway Unit (SGU) is useful to interface two different types of network - LAN and synchronous serial communication over satellite. The SGU is a low cost solution to transport IP/Ethernet frame over satellite network. It supports both unicast and multicast mode of communication. It can handle satellite channel signaling and conferencing call signalling that is useful in many SATCOM applications. All commercially available gadgets for packet based data communication like - VoIP, Video phone etc., are having LAN interface, to introduce those equipment into satellite network, SGU required that efficiently converts the IP data format into a synchronous HDCL format and vice versa. It is having proper

routing/filtering mechanism to restrict unwanted traffic flows into the satellite link.

Satellite Gateway unit converts data between RS-422 to Ethernet. The unit is designed to work with internal clock or external clock selectable via jumper selection. The unit consists of total 8 communication channels and 1 control channel. The control channel is used to individually reset the communication channel via Ethernet port or via RS 485 port.

Applications area

- MSS services Hub base band systems as a gateway between synchronous serial interface of satellite systems and IP based hub baseband systems
- VOIP phone over satellite network



Specifications:

- No. of Communications Channels - 8, can be configured independently
- No. of M&C port/channel - 1, can be configured independently
- No of Processors per channels/m&c - 1, RABBIT 6710 (total 9 processors)
- Ethernet ports at Front panel per channel - 1, 10/100 Ethernet RJ45 with Link And Activity Indicator
- Ethernet Protocols supported - TCP, IP, UDP, RTP, HTTP
- Communication Interface - RS422 synchronous (Tx data, Tx Clock, Rx Data, Rx clock)
- Input Data Rate - 2.4 Kbps to 384Kbps or higher
- Clock selection - Internal, External, Selectable
- Communication interface protocols - HDLC, Bi-sync, selectable
- Communication Interface Connectors Back panel - 9 PIN D type -male per channel
- Communication LEDS - 3 nos (RXD, TXD, link) per channel Front Panel
- Operating System - Rabbit Bios
- M&C interface - RS485 and RS232, selectable
- M&C Interface connectors- Back Panel - 9 PIN D type -female
- M&C LEDS- Front Plate - 3 nos. (RXD, TXD& link)
- Push type master reset switch - On Front Panel
- Enclosure - Standard 19", standard 1U size,
- Rack Mountable Cooling Fan - 2, one as inlet and second as outlet
- Power supply with EMI/RFI filter - 230VAC with standard 3 pin Connector on Rear panel with Power supply cable
- Power on/off switch - front panel - Yes
- Power indicator-front panel - Yes
- Temperature range - 0 to +50 deg C
- Humidity - 5% to 95%, non-condensing

SGU is being used as a part of operational GSAT-6 MSS services Hub base band system for portable multimedia services and satellite Mobile Radio services (two way voice communication) at DES and at AES.

Technology Transfer

SAC/ISRO, offers to transfer this technology of the **Satellite Gateway Unit (SGU)** developed by SAC to industries in India with adequate experience and facilities. Enterprises interested in obtaining knowhow may write giving details of their present activities, infrastructure and facilities.

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