CYGNUS 606SS Baseband Modems

Q What is the function of CYGNUS 606SS baseband modems?
A To transport data across unloaded telephone grade copper pairs at speeds of 64 kbps or 128 kbps.

Q How much distance can CYGNUS 606SS Modems drive on the copper pair between them?
A Up to 8 km on 0.5 mm diameter unloaded copper pair. The driving range is more on thicker wire. The actual range achieved depends on factors such as quality of wire, joints, noise on the line, etc.

Q What are the typical applications of CYGNUS 606SS modems?

A They are used to interconnect computing or networking equipment (e.g., routers) at two locations over leased or dedicated connections.

In wide area leased line applications, typically one pair of these modems is used on the local loop at either end of the 64 kbps circuit, to communicate data between user premises and central offices (COs). The modem at the subscriber end usually has a V.35 compatible interface for connecting to DTEs such as routers. The modem at the exchange usually has a G.703 compatible interface for connecting to the PCM equipment there. Once the modems deliver data to the PCM equipment, the telecom service provider's network carries data between the two COs.

In on-campus applications a pair of CYGNUS 606SS modems can be used to directly connect DTEs at two locations over telephone grade wire at 64 or 128 kbps.

Q Which connectors on the CYGNUS 606SS/G.703 modem do I use to connect the modem to the PCM equipment at the exchange?
A A 4-way terminal block (marked "G.703 Tx" & "G.703 Rx)" and a RJ-11 socket are provided on the unit's back panel. Either of these can be used to connect the modem to the PCM equipment.

Q Which connector on the CYGNUS 606SS/V.35 modem do I use to connect the modem to the DTE?
A The DTE's V.35 WAN cable should be connected to the 34 pin block type connector on the unit's back panel (the connector is marked "V.35 DTE").

Q Where do I connect the 2 wire telephone line to the modems?
A To the 2-way terminal block or RJ-11 socket (labelled "LINE") on the unit's back panel.

Q What protection is provided in the modem against current and voltage surges on the telephone line?
A Series glass fuses for protection against current surges and shunt GD Tube for protection against voltage surges are provided.

Q Are the line protection fuses accessible without opening the unit?
A These fuses are housed in the two fuse holders on the back panel labelled "LINE FUSES" and can be accessed without opening the unit.

Q How can I check the line protection fuses?
A Unscrew the cap of the fuse holder, remove the fuse, and, with a multimeter, check the continuity between the two end caps of the fuse.

Q What is the default clock mode in CYGNUS 606SS/G.703 modem?
A G.703 Slave Clock mode. This clock mode is suitable for use when the clock is supplied by the PCM equipment connected to the unit's G.703 interface.

Q What is the default clock mode in CYGNUS 606SS/V.35 modem?
A Line Slave Clock mode. This clock mode is suitable for use when the unit recovers the clock from the signal received on the line from the remote modem.

Q Can CYGNUS 606SS/G.703 modem work at 128 kbps?
A No. It works at a fixed speed of 64 kbps.

Q Can CYGNUS 606SS/V.35 modem work at 128 kbps?
A Yes. But only when it is working opposite another CYGNUS 606SS/V.35 modem. With a CYGNUS 606SS/G.703 modem at the other end it can work only at 64 kbps.

Q How do I configure the CYGNUS 606SS/V.35 modem for 128 kbps operation?
A By setting SW8-4 to CLOSE position.

Q Is the driving range at 128 kbps less than the range at 64 kbps?
A No. The driving range at both 64 and 128 kbps is the same.

Q How do I test the line side of a V.35, G.703 modem pair?
A Connect the modems back to back and power them on. Ensure that one of them is configured as Master and the other as Slave, and that "default clock mode" is selected on both modems. If ACT indicator is ON on both modems, the line side of the modems is OK.

Q How do I know whether the G.703 interface of the CYGNUS 606SS/G.703 is properly connected to the PCM equipment?
A The SYNC indicator is ON if the modem is properly connected to the PCM equipment and synchronised with it.

Q How do I know if the two modems are properly connected to each other over the 2-wire telephone line?
A The ACT indicator is ON if the two modems are synchronised with each other.

Q What diagnostic facilities are available in CYGNUS 606SS modems?
A Local loopback, Remote loopback, Digital loopback and Pattern generation and checking.

Q How do I test whether the end-to-end leased line is OK?
A Start the Pattern Generation test from the V.35 modem at Location A. TST and ERR indicators should glow on this unit. Now give DIG LP from the V.35 modem at location B. With a properly working end-to-end link ERR indication on the modem at location A should go off. If ERR indicator is blinking or continuously ON, check the line.