Extending E1 Line and PABX Interconnection using Fiber Optic Modems or G.Shdsl Modems

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Connectivity Solutions for extending E1 lines over Optical Fiber using Fiber Optic Modems or over Copper using G.shdsl Modems for carrying out PABX Interconnection.

A. Achieving PABX interconnection over Optical Fiber or Copper link

Digital PABXs have E1 interface. A simple solution to interconnect a pair of digital PABXs using copper circuit is by using a pair of CYGNUS 850 G.shdsl modems with E1 interface. If the interconnection is required over optical fiber media, a pair of entry-level CYGNUS 855 Fiber Optic modems can be used. Fig 1 illustrates this connectivity. While CYGNUS 855 allows distances of the order of 15 km or more between the two PABXs, CYGNUS 850 G.shdsl modems allow a distance of more than 5 km over 0.5 mm dia copper pair. The arrangement shown in Fig. 1 can also be used as local lead of a long distance leased line if the PABXs are to be interconnected over a wide area link.

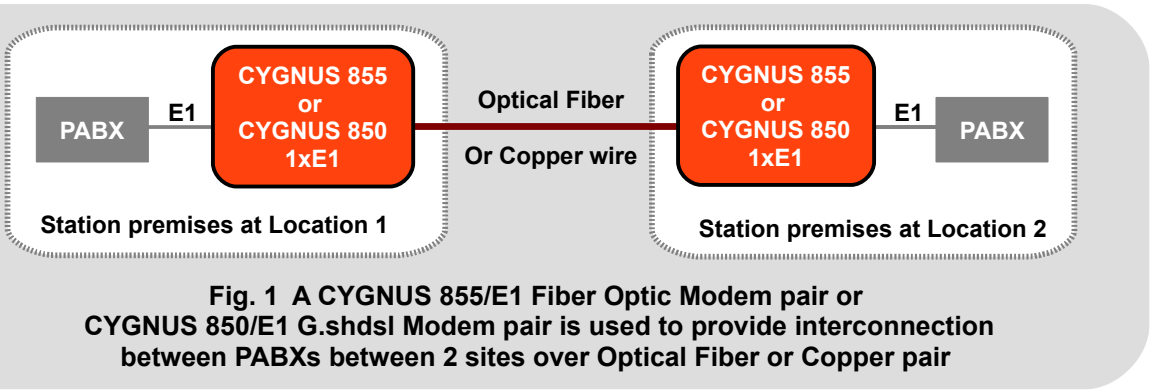

Fig. 1 A CYGNUS 855/E1 Fiber Optic Modem pair or CYGNUS 850/E1 G.shdsl Modem pair is used to provide interconnection between PABXs between 2 sites over Optical Fiber or Copper pair

B. Achieving simultaneous PABX interconnection and LAN connectivity over optical fiber

In an organization it may be needed to extend a digital PABX to a branch office a few kilometers away from the main office, and simultaneously extend an Ethernet LAN to the branch office to connect devices such as PCs, terminal servers, or thin clients at the branch office to a server at the main office. Optical Fiber offers the required distance and bandwidth to do these tasks. Cygnus 880 multiport Fiber Optic Modems have both E1 ports and Ethernet ports, and so allow both PABX extension and LAN interconnection simultaneously over a single Fiber link. Fig. 2 shows this arrangement.

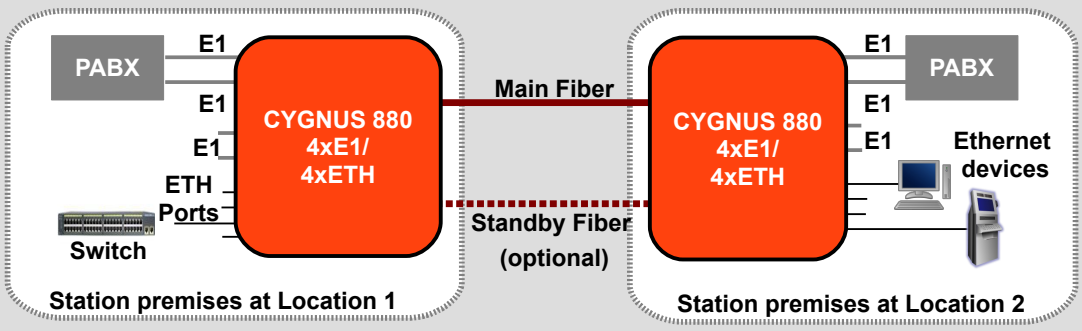

Fig. 2 A CYGNUS 880/4xE1/4xETH Multiport Fiber Optic Modem pair used to provide interconnection between PABXs and simultaneous LAN Extension between 2 sites

Note that CYGNUS 880 can provide up to four E1 user interfaces for interconnection of digital PABXs across Optical Fiber link. The ethernet channel provided by CYGNUS 880 offers bridging functionality. A 4-port Ethernet Switch is provided as the user interface on the bridging channel. Ethernet bandwidth on the bridging channel will be about 12.5 Mbps when all four E1 channels are provided. If only two E1 interfaces are deployed, the LAN bridging bandwidth can be up to 40 Mbps.

CYGNUS 880 can also be ordered with a standby optical fiber option. The standby link takes over communication automatically if the main fiber link get disrupted.

C. Achieving PABX and LAN interconnection over long distance E1 link with Optical Fiber in local lead

Fig 3 shows a mechanism to extend PABX connection as well as LAN extension over E1 Links. To achieve this two pairs of CYGNUS 882 dual port Fiber optic modems are used with two E1 Links. The CYGNUS 882 units at the user sites are ordered with one E1 DTE port and one Ethernet DTE port. PABXs are connected to the E1 port and the LAN to the Ethernet port. These CYGNUS 882 units at the user site are connected over fiber to CYGNUS 882 units with 2 E1 ports at the cable hut/telephone exchange. Bandwidth available for LAN extension will be 2 Mbps – the capacity of the E1 link, i.e. 2 Mbps. PABX interconnection and LAN extension takes place over separate E1 links.

CYGNUS 882 can also be ordered with a standby optical fiber option. The standby link takes over communication automatically if the main fiber link get disrupted.

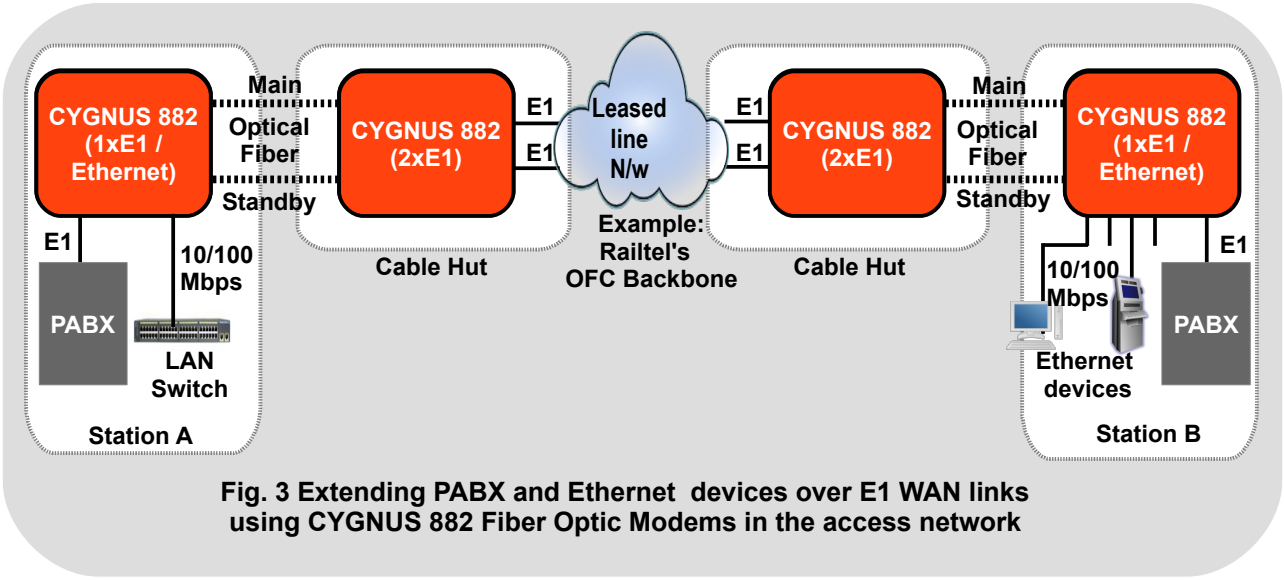

Fig. 3 Extending PABX and Ethernet devices over E1 WAN links using CYGNUS 882 Fiber Optic Modems in the access network

Two CYGNUS 882 units with dual E1 ports can also be interconnected over fiber to function as a dual E1 port extender.

Contact Cygnus today for further information

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