MEGAPLEX-2100 Module

ML-20 nx64 Main Link Module

FEATURES

- Connects the Megaplex-2100/2104 to digital services operating at rates less than E1
- Link data rate selectable from 128 to 1984 kbps
- Link interface: V.35, X.21, RS-530 or RS-449
- Timing modes: DTE, EXT-DCE and DCE
- Data buffer in the receiver for satellite applications
- Loopback according to V.54

DESCRIPTION

■ ML-20, Main Link Module, connects the Megaplex-2100/2104 directly to high speed data services running at sub-E1 rates. The module supports any link data rate of n X 64 kbps, from 128 to 1984 kbps. This eliminates the need for an external rate and interface converter.

■ The main link interface is selectable for V.35, RS-530/422, RS-449/422 or X.21.

■ ML-20 uses 8 kbps of the available digital data service bandwidth for end-to-end synchronization and for in-band management and configuration.

■ The main link and system parameters are programmed via the Megaplex-2100/2104 management system which could be a dumb terminal or an SNMP network management system.

■ The ML-20 module supports three timing modes:

– **DTE:** This mode enables the Megaplex-2100/2104 nodal timing to be locked to the timing of the data service network coming from the DTE main link interface.

– **EXT-DCE:** This mode enables the Megaplex-2100/2104 nodal timing to supply the external transmit clock to the DTE main link interface. The receive data is clocked by the receive clock coming from the DCE.

– **DCE:** This mode enables the Megaplex-2100/2104 nodal timing to supply the transmit and receive clock towards the DTE.

■ In the DTE and EXT-DCE timing options, the receive data path can optionally go through a ±256 bit elastic buffer that will compensate the clock differences between the transmit and receive side. The buffer is used for satellite applications where the satellite modem does not include a buffer to compensate the low frequency jitter (wander) that accumulates between the up-link and down link.

■ The ML-20 module may be installed in a Megaplex-2100/2104 as a single main link or together with another ML-20 or with other types of main link modules, for full redundancy or dual link operation. When operating in dual link mode, "priority bumping" or "ISDN switched backup" (using an external terminal adapter) features are supported. These allow continued operation of the most important channels in the event of link failure.

■ Diagnostic capabilities include local and remote loopback of the main link interface. V.35 and RS-530 interfaces support V.54 loopback commands on the local and remote modems. Self-test upon power-up and during normal operation reduce down-time to a minimum. Testing during normal operation include buffer overflow/underflow reporting.

SPECIFICATIONS

- **Interface**
  V.35, X.21, RS-449/422 or RS-530
- **Connectors**
  RS-449/422: 37 pin D-type, female through adapter cable
  RS-530: 25 pin D-type,female
  X.21: 15 pin D-type,female
  V.35 34 pin, female
- **Data Rate**
  n X 64 kbps (where n=2,...31)
- **Available Bandwidth**
  56K + (n-1) X 64 (where n=2,...31)
- **Timing**
  DTE: Transmit and receive clock from DCE.
  MP-2100/2104 nodal timing is locked on incoming clock
  EXT-DCE: Transmit clock to external DCE, receive clock from DCE
  DCE: Transmit and receive clock towards DTE

Note: On EXT-DCE and DCE modes, the Megaplex 2100/4 nodal clock can be locked on a source coming from an I/O card or from an internal oscillator.

- **Receive Data Buffer**
  Normal: ±8 bit
  Extended: ±256 bit
- **Control Signals**
  RS-422/530: RTS and DTR - outputs
  CTS, DSR and DCD - inputs
  V.35: RTS and DTR - outputs
  CTS, DSR and DCD - inputs
  X.21: C - output
  I - input
- **Diagnostics**
  Local main link loopback
  Remote main link loopback
  V.54 loopback (only on V.35 and RS-530 interfaces) Buffer overflow/underflow reporting
- **Indicators**
  ON LINE (Green):
  ON when connection is established
  ALM (Red):
  ON when failure in operation occurs
  TST (Yellow):
  ON when looping occurs
  S. LOSS LOC/REM (Red):
  ON when loss of synchronization on LOCAL/REMOTE link occurs

- **Configuration**
  Programmed via the Megaplex-2100/2104 management system

APPLICATION

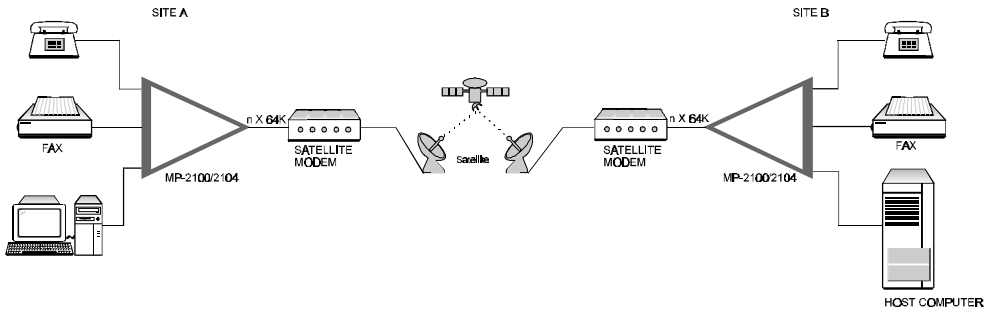

Figure 1. Megaplex 2100/2104 in Satellite Applications

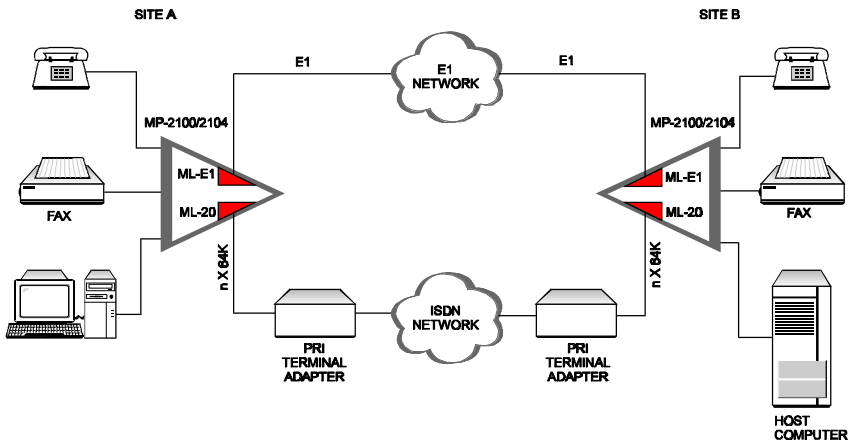

Figure 2. ISDN Backup for the most Critical Information

ORDERING

MP2100-ML-20/*
E1 Main Link Module

* Specify main link interface
V35 for V.35 interface
530 for RS-530/422 interface
X21 for -X.21 interface
449 for RS-449/422 interface

Specifications are subject to change without prior notice.

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