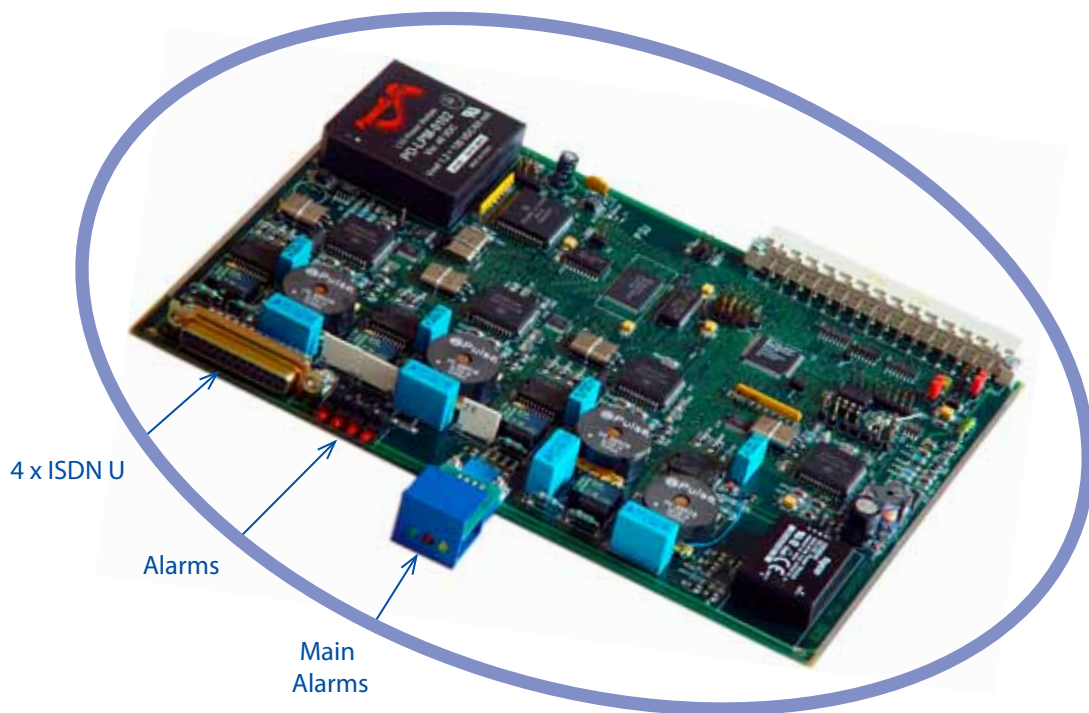




# PIU

## 4 ISDN tributaries with U interface

- Provides connection to ISDN exchange for 4 remote subscribers, via multiplexers FM2x2, FM-MSAN
- Single pair subscriber loop with 2B1Q line code
- PIU-LT (Line Termination) and PIU-NT (Network Termination) options



## Applications

PIU unit, as tributary unit within multiplexers FM2x2 and FM-MSAN provides connection of remote customer to ISDN exchange. User NT1 equipment is NT (network termination), whereas U-interface at exchange side is LT. Therefore, PIU unit at customer side must be PIU-LT, and PIU unit at exchange side PIU-NT.

Remote subscriber can be connected with ISDN exchange via more than one PIU-LT/PIU-NT pair, but maximum number of regenerators is six (i.e. three LT/NT pairs). For test purposes ISDN exchange can send diagnostic commands through EOC channel to each PIU unit in chain. 3 bits are reserved for address. "0" is address of NT1 equipment, "1" to "6" are for PIU units in chain, and "7" is for all stations in chain (broadcast).

## Basic functions

- 4 ISDN U interfaces on PIU unit
- One U-ISDN occupies 2.5 64kbit/s channels in FM2x2 and FM-MSAN multiplex
- Position of U-ISDN in multiplex is configurable by management software
- Transport via single pair is accomplished by use of 2B1Q line code with near-end echo cancellation
- PIU-LT is equipped with remote power feed source, which can provide power feeding of NT1 without local power supply
- Copper-pair interruption detection
- Short-circuited copper-pair detection
- Remote loopback control from ISDN exchange through EOC
- Performance monitoring

## Control and monitoring

PIU unit within multiplexers FM2x2 and FM-MSAN can be controlled by PC software SUNCE-M (Network Manager):

- PIU unit configuration
  - time slot assigning
  - remote power feed control
  - performance monitoring control
  - alarm monitoring control
- Alarm monitoring

ISDN exchange has loopback control over PIU unit by means of EOC.

Activation and deactivation of U-interfaces is initiated from NT1 or exchange.

## TECHNICAL DATA

<b>ISDN U interface</b>	ITU-T G.960, G.961 compliant
Transport type	duplex
Transport medium	one twisted-pair
Line code	2B1Q
Line speed	80 kboud ± 100 ppm
64kbit/s channels per interface	2.5
Maximum line attenuation	
at 40 kHz	36 dBm
at 80 kHz	45 dBm
Maximum line resistance	
without repeaters	1048 Ω
with repeaters	1300 + 700 Ω
Synchronization	
frame	1.5 ms
multiframe	12 ms
Scrambling	$1 + X^{-18} + X^{-23}$
CRC12	$X^{12} + X^{11} + X^3 + X + 1$
Remote power	105 V

PIU/FM2x2 regenerator chain between remote subscriber and ISDN exchange

