



## RETIMING Standalone Rack



### PRODUCT OVERVIEW

The E1 signal synchronisation function is altered by phase variations and slips coming from justification and pointers movements in SDH Network.

If some PDH equipment, or remotely located equipment restricted to receiving clock via an E1 tributary, is connected to SDH or ATM equipment, the only solution is to retime the E1 feed to a clock with proven traceability to a PRC and known jitter and wander quality.

The data stream is first extracted from its E1 signal with its built-in clock, then stored into a FIFO (First In First Out) buffer. Afterwards, data are removed from the FIFO output side and sent to the output interface with the built-in reference clock.

The Retiming rack is a very cost effective solution for the Telecom operators and helps them to build a reliable network.

### MAIN FEATURES

#### • **STAND-ALONE equipment**

- 48 VDC (or 220 VAC in option)
- LED status and 3 Relays contacts for alarm indications
- Acknowledgement push button

#### • **Modular and Scalable unit**

#### • **Adaptable connectors panels, i.e. BNC, BT43, 1.6/5.6, SUB D, BNO, CAD Krone, ...**

#### • **Input Reference Clock**

- 2 input reference clocks compliant with ITU-T G.703 § 9 or § 13 (75 or 120 Ohms).
- Automatic detection of interface, 2048kHz or 2048kbit/s for the two input reference clocks
- Forced and priority modes mechanisms of input links selection are available



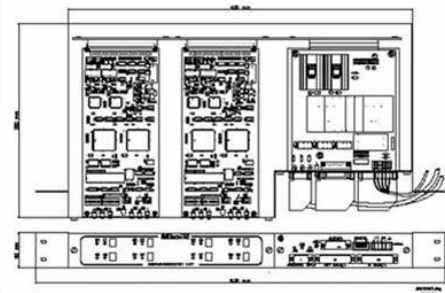
### FIFO BUFFER

- Maximum sizing of the Retiming FIFO  $\pm 512$  bits
- Eight different FIFO buffer sizes can be setup for each retiming port

Buffer size	Max delays in $\mu$ s	Average delay and FIFO slip in $\mu$ s	Frequency deviation greater than
0	0	0	0
11	5,4	2,7	$3,1 \cdot 10^{11}$
21	10,3	5,1	$5,9 \cdot 10^{11}$
36	17,6	8,8	$1,0 \cdot 10^{10}$
82	40	20	$2,3 \cdot 10^{10}$
164	80,1	40	$4,6 \cdot 10^{10}$
512	250	125	$1,4 \cdot 10^{-9}$
1024	500	250	$2,9 \cdot 10^{-9}$

### RETIMING CARD

- Four hot swappable slots for Retiming cards
- 2 retiming ports per cards compliant with ITU-T-G.703S9 (75 or 120 Ohms)
- G.703-G.704 behaviours can be set-up :  
No framing, framing and multi-frame
- Alarms : LOS, AIS, LOF, OOF-CRC-4, OOF-CAS16
- Front panel test points for frequency monitoring of each input signal



### BYPASS Mechanism

- Activated when there is no power available  
No reference clock available  
And retiming card failure

### AIS Signal

- Still generated at the output, even the E1 input disappears and it will be correctly clocked by the reference

E1 input signal

E1 retimed output signal (with a PRC reference clock)

