IBS LINKER

CYGNUS 895

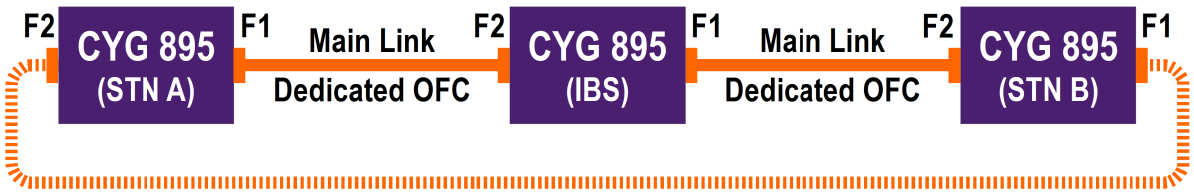
Multi Service Fiber Ring Multiplexer

Ideal for connecting Intermediate Block Signalling (IB) over resilient Fiber Ring with fast changeover

FEATURES

- **Application:** Highly reliable solution for interconnecting Block Signalling equipment at Intermediate Block Site (IBS) and adjacent end stations over resilient Fiber Ring.
- **Connectivity:** The CYGNUS 895 unit at IBS is connected to CYGNUS 895 units at the two end stations adjacent to the IBS using optic fiber links. User devices connected to the CYGNUS 895 units at IBS/stations can then communicate with each other.
- **Resilient Ring:** CYGNUS 895 units at the two end stations may also be interconnected using a direct "backup" fiber main link between them. If this is done, a closed ring is formed. CYGNUS 895 units continuously monitor the ring. If a fiber segment fails, they automatically switch user data to the other direction on the ring in less than a few tenths of milliseconds. Indicators on the unit allow easy identification of failed fiber segments or non-working nodes.
- **User interfaces:** Ethernet, 2/4 wire E&M, FXS and FXO, RS232
- **Power Supply:** Dual power supply units operating in hot standby mode are provided. Both power supply units can operate from 24 VDC or 48 VDC. If the power supply unit in use fails, uninterrupted operation continues using the other power supply.
- **Event logs:** Unit maintains time stamped event logs of up to 1000 important events, such as Unit Power On/Off, Fiber Link Up/Down etc. This log is accessible via Console Port or by using Telnet over an Internet Protocol (IP) compliant network.
- **Potential Free Relay Contacts (PFCs):** 4 PFCs are provided to indicate alarms such as Unit Power Down, Fiber Link Down. These PFCs may be connected to the Data Logger network for centralised monitoring of alarms.
- **Unit Management:** May be done using RS232 based Console Port or Ethernet based Telnet/SNMP management port.
- **Form factor:** 19 inch Rack Mountable.

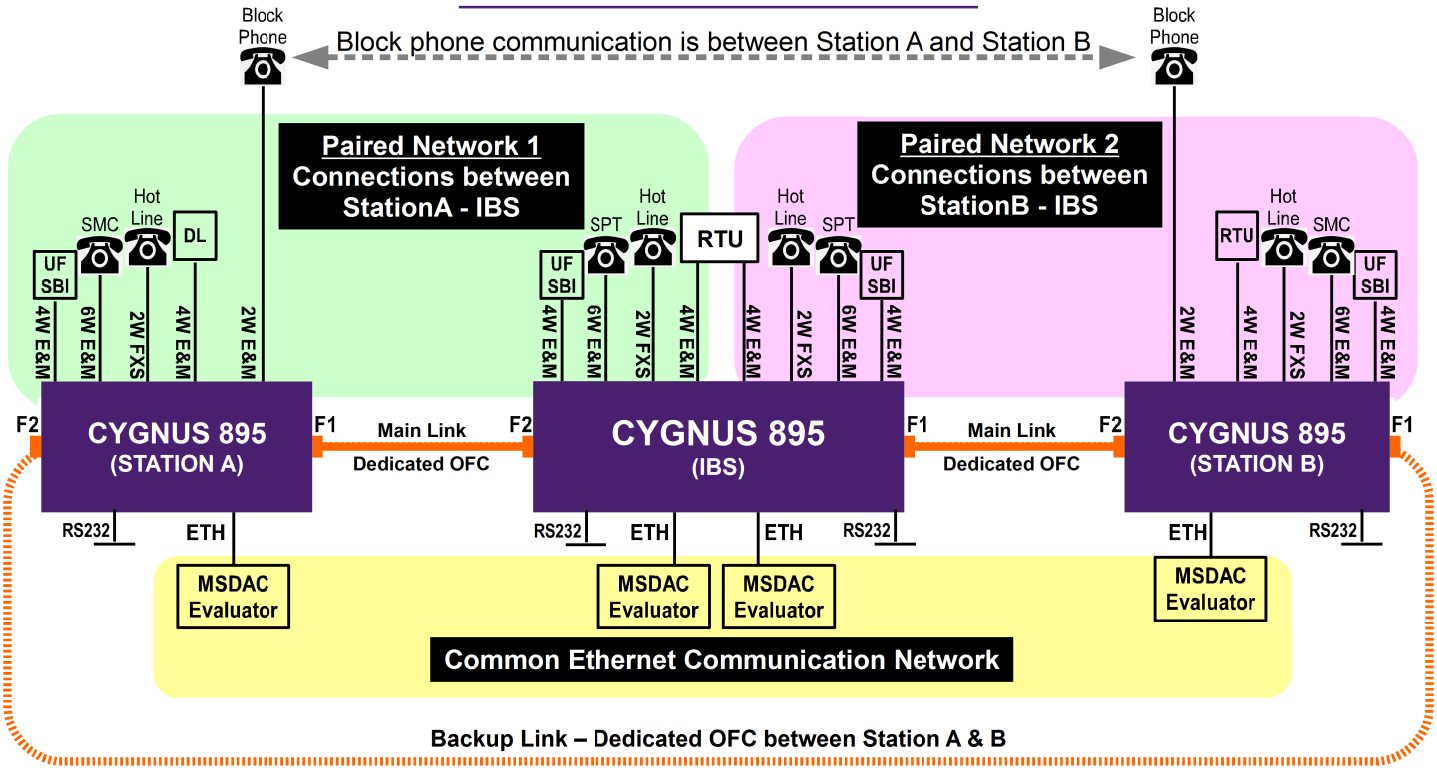
FIBER RING CONNECTIVITY DIAGRAM - LOGICAL



Backup Link – Dedicated OFC between Station A & B

Both main link (between stations & IB) and backup link (between station A & station B) is dedicated fiber

DETAILED APPLICATION DIAGRAM



Backup Link – Dedicated OFC between Station A & B

Connectivity of MSDAC, UFSBI, Data Logger & Telephonic devices between station A, IBH and station B over dedicated fiber ring network

SPECIFICATIONS

MAIN LINK: FIBER PORT	
No. of Fiber Ports:	2
Type of fiber:	Single Mode
Range:	Upto 40 km*
Connector:	SC Bi-Di
Mounting:	SFP (pluggable)
Network Topology:	Ring, Point to point

USER INTERFACES	
1. Ethernet	
No. of copper ports:	4, on RJ45 socket
Compliance:	IEEE 802.3 compliant 10/100 Base-Tx auto-sensing interface
No. of Fiber ports:	1 (Ordering time option)
Interface compatibility:	100 Base-FX or LX
Range:	Upto 15 km, based on transceiver type
Connector type:	Small Form factor Pluggable (SFP)/Bi-Di/SC or LC/Duplex
Functionality:	Self learning bridge when paired with other CYGNUS 895 unit
2. V.21/V.23/E&M	
No. of E&M ports:	8, on RJ45 socket
Interface type:	2-wire/4-wire analog voice band interface, Type V signalling interface, impedance: 600 ohm (nominal), (signalling interface voltage is -24V)
Protection:	Surge voltage protection in shunt as option, re-settable current limiting fuses in series
3. FXS	
Number of ports:	2, on RJ45 socket
Impedance:	600 ohm (nominal)
Ringing voltage:	60 Vrms (typical, no load)
Loop length:	Current feed
4. ADDITIONAL V.21/V.23/E&M - (Ordering time option)	
No. of Ports:	2, on RJ45 socket
Interface type:	2-wire/ 4-wire analog voice band interface, Type V signalling interface, impedance: 600 ohm (nominal), (signalling interface voltage output is -24V)
Protection:	Surge voltage protection in shunt as option, re-settable current limiting fuses in series
5. FXO - (Ordering time option in lieu of V.21/V.23/E&M)	
Number of ports:	2, on RJ45 socket
Impedance:	600 ohm (nominal)
6. ASYNC RS232 USER PORTS (Ordering time option)	
Number of ports:	2
Interface type:	Asynchronous Full Duplex RS232 with 1500 VAC isolation

NETWORK TOPOLOGY AND OPERATIONAL MODES	
Topology:	3-Node Ring, 3-Node Linear, 2-Node Point-to-Point
Port Connectivity:	In a 3-Node topology one unit is a central unit and its ports are paired with two remote end-station units in equal proportion. In point-to-point mode all ports of a unit are paired with the ports of the paired unit.
Full OFC Ring Protection:	Full protection against failure of single fiber link between any two nodes in case of ring or point to point topology. Ring Network Recovery time is less than 100 ms.
Maximum number of nodes in network:	3 nodes. Can also work in point-to-point mode with two units interconnected

CONSOLE PORT

ITU-T V.24/RS232 compatible interface on RJ45 socket. Asynchronous; 8 data bits, 1 stop bit, no parity. Default speed 9600 bps.

MANAGEMENT PORT (TELNET/SNMP)

10/100 Base-Tx Ethernet on RJ45 socket. SNMP Traps for important events. Telnet access for configuration and monitoring.

EVENT LOGS

The unit can record the time of occurrence of up to 1000 specified critical events and store them in non volatile memory. These events may be viewed through a supervisory terminal connected to the console port or via Telnet.

POTENTIAL FREE CONTACTS (PFCs)	
Number:	4
Functionality:	Alarms for Power off, Fiber Link down
Connector:	Terminal block

AUDIBLE ALARM (BUZZER) - (Ordering time option)

When enabled the buzzer sounds if an Fiber link goes down. A switch is provided to acknowledge the alarm and silence the buzzer.

LED INDICATORS	
Unit related:	Power, Test/Default, Master/Slave, Alarm
Fiber Link related:	Fiber Link Status.
V.21/V.23/E&M related:	2W / 4W Port selection
FXO/FXS related:	Status: Call on / Ringing
Ethernet related:	Link/Activity, Speed
Power supply related:	DC i/p Polarity Reversal

GENERAL	
Power:	Dual Hot Standby power supplies, each capable of operating from 48 or 24 VDC
Dimensions:	19 inch rack mountable
Operating Temperature:	-5° C to +55° C

STANDARD MODEL

CYGNUS 895 having the following:

- 2xFiber Ports as main links (Fiber Port with SFP-SC Bi-Di 20 km connector)
- 8xV.21/V.23/E&M, 2xFXS and 4-port Ethernet Bridge (compliant with 10/100 Base-Tx copper Ethernet) as user ports
- Dual Hot Standby 24VDC/48VDC power supplies.

Optional models as per following Ordering Code are also available in lieu of the Standard Model described above:

ORDERING CODE: CYGNUS 895-A/B/C/D/E/F

"A": Fiber connector for Main Link - specify "LC" for Duplex Single Mode fiber (40 km range) on LC connector in lieu of SC Bi-Di connector.

"B": Specify "F" for 100 Mbps Fiber interface on Ethernet user ports in lieu of 10/ 100 Base-Tx copper interface) or "TF" if both copper and fiber interface are needed

"C": Fiber connector for Ethernet user port. Specify one of the following:

- "ESC" for SC connector on Bi-Directional fiber, 15 km range
- "ELC" for LC connector on duplex fiber, 15 km range

"D": Additional 2xV.21/V.23 or 2xFXO user ports: Specify "V" for 2xV.21/V.23 or "FXO" for 2xFXO in lieu of 2xV.21/V.23

"E": Additional Audible Alarm feature: Specify "BZR" if needed

(Note: Features and Specifications are subject to change without notice)

Ref: 220617

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