

64Kb G703 to X.21 interface converter.

General description

The G703 - X.21 interface converter can be used to convert X.21 (V.11/RS422 signals presented on a D15 connector) data to either 64k Co-directional or Contra-directional G.703 data and back again. Byte timing is supported in both versions. Link options accommodate conversion format and mode of operation. Front panel indicators show mode of operation and status.

An 8 bit FIFO buffer is included on transmit and receive links to facilitate byte timing at the V.11 interface.

Indicators

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| TxD | Indicates data transmission on the G703 side. No data is passed to the G703 interface in loop back. |
| RxD | Indicates incoming data on the V.11 side of the interface. V.11 data is indicated in loop back. |
| SNC | Indicates when the clock recovery and byte timing have been synchronised to the network. This does not indicate in loop back. |
| ERR | Indicates an internal error, either clock recovery circuit cannot synchronise, or link options have changed -
Constant indicator - clock recovery cannot synchronise
Flashing indicator - link options have changed. |
| LOOP | Indicates that unit is in local mode - used for testing V.11 terminal equipment. |
| CO | On indicates that the unit is converting V.11 data to and from G703 Co-directional format. Off indicates the unit is in Contra-directional mode. |
| MST | Indicates that when in Co-directional mode the unit is operating as a master. |

Switches and link options

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| RST | Button accessible through the front panel, resets all internal processors. Following a reset the link options are read by each of the processors and the mode selected is entered. Also resets error indicator following a malfunction. |
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The jumpers are accessible by removing the top half of the outer case - remove the four upper screws, two on each side. (To remove the PCB - take off the top lid and the front

panel, lift the cable securing grommet clear of the back panel and slide the PCB forwards.)

JP1 Affects only Co-directional operation -

OPEN - The unit operates in slave mode. Internal timing is synchronised to the incoming data. In the absence of data the clock recovery circuit will not be able to lock up and the SNC indicator will not light. No clock will be supplied to the V.11 interface until the unit has synchronised to incoming data. This link is ignored in loop back mode. The link is also ignored when in Contra-directional mode.

CLOSED - The unit operates in master mode, only applicable in Co-directional operation. The internal clock circuits are locked to an internal crystal controlled oscillator. This enables the encoder to work in the absence of incoming data.

NOTE:- The master mode is only applicable to units working back to back, i.e. two units with G703 interfaces directly connected, (usually for test purposes), one is operated as a master the other as a slave.

JP2 OPEN - The unit operates according to the Contra-directional rules for encode and decode. (The encoder Synchronises to the Network transmit clock TxC and the decoder synchronises to the Network Receive clock RxC.)

CLOSED - The unit operates according to the Co-directional rules for encode and decode. (Both encoder and decoder are synchronised to the receive data RxD when in slave mode thus maintaining Network timing. When in master mode the encoder and decoder are synchronised to the internal oscillator.)

JP3 OPEN - Normal operation. Data is passed through the unit in both directions maintaining byte timing.

CLOSED - V.11 loop back. Used to set up terminal equipment on the V.11 side of the interface. Data is passed from the V.11 transmit to the V.11 receive side maintaining byte timing.

JP4,5 These are two position jumpers that select the type of power supply -

- Both set towards the edge of the board :- 7VAC power input (normal)
- Both set towards centre of board :- +5VDC power input, normally only applicable in rack mount versions.

J1 7VAC power connection jack. Outer two pins only used, not polarity conscious.

JP6 Not user configurable.

Signal connections.

Two connectors are provided on the rear of the unit. One is a female D15 which presents the V.11 signals and the other is an eight way screw terminal block, provided to terminate the G703 signals. The terminal block can be unplugged from the unit for convenience of wiring and to allow the converter to be easily unplugged.

G703 interface connections

These connections are transformer coupled and are matched for connection to 120 ohm lines. They are not polarity conscious. A removable screw terminal block is provided to terminate the G703 signals, which are labelled on the back panel -

RxC Connection of receive clock from the network, contra-directional only.

TxC Connection of transmit clock from the network, contra-directional only.

RxD Connection of data from the Network, both modes.

TxD Connection of data to the Network, both modes.

V11 interface connections

V11 connections are made via the 15 way female D-type connector. *These connections are polarity conscious.*

1	n/c
2	RxD A (data into unit)
3	n/c
4	TxD A (data out of unit)
5	n/c
6	CLK A (64k clock, out of unit)
7	Byte timing A (8k clock, out of unit)
8	AC Power input or 0V depending on JP5
9	RxD B
10	n/c
11	TxD B
12	n/c
13	CLK B
14	Byte timing B
15	AC Power input or +5V depending on JP4

Notes on clock timing.

Data for transmission should be set up on the rising edge of the 64k clock. The rising edge of the violation clock indicates the start of a byte and is presented as an 8K clock.

Receive data is valid on the falling edge of the clock. Again the rising edge of the violation clock indicates the start of a byte.

Specification.

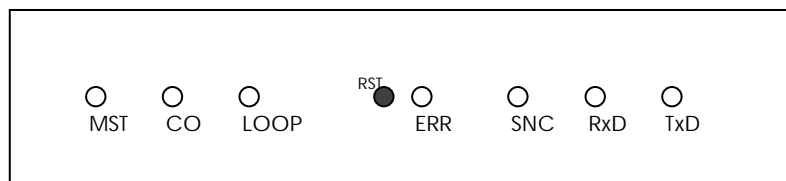
Speed - 64k baud.

Interfaces - V.11 presented as X.21 on a female D15 connector.
G703 Co and Contra directional modes both adhering to G703 encoding at 64k baud.

Size - Single Euro-card format available in desktop form or as a rack mounting card -
Desktop case (HxWxD mm) - 40 x 150 x 230.
Rack mounting card (HxWxD mm) - 28 x 100 x 220.

Power - Desktop unit - supplied with external Universal mains power supply unit suitable for 100V to 250Vac 50/60Hz. IEC connector.
Card 7 - 9Vac 50/60 Hz @ 5 VA or, regulated +5VDC @ 500ma.

Panels - View of front panel showing 7 leds and the reset push button.



View of the rear panel .

