



• DESCRIPTION

The NTC/2131/NB.A interface convertor is designed as an interface convertor between the telecom world with the G.703 & HSSI signals as standard, and the broadcast world, mainly using ASI signals.

On the input side, 2 types of physical interfaces, being HSSI (Cisco) and G.703, are available. In case G.703 is required, the user has a choice of a number of optional piggy-back plug-ins, covering all standardized data rates (E1, T2, E2, E3, DS3). A maximum of 2 of any of the above rates can be installed simultaneously, giving the possibility to either switch from one rate to the other.

Furthermore, the G.703 has up to 4 presets to equalize the coax cable slope. Also, the G.703 signal and even the HSSI signal (if at the same rate as a G.703 signal) can be monitored on a separate BNC coax output.

For the HSSI interface, an (SD,TT) to (RD,RT) local DTE loop-back command is possible with the LA/LB selection. An ST clock comes available to be used as a reference for TT.

The internal reference (and consequently the ST clock) can be slaved either to an internal or external 10 MHz clock, or to an external G.703 input clock.

The NTC/3453 gives two DVB-ASI-coax outputs or a DVB-SPI output and a serial-LVDS output and has dual DVB-ASI-coax monitoring inputs. Supported input data rates are 0-110 Mb/s (Demodulator limit) for DVB-ASI and DVB-SPI and 0-18 Mb/s for Serial-LVDS. Burst data rates are up to 27Mb/s for DVB-ASI.

Optical plug-in :In case the NTC/3453 is fitted with the NTC/3453.x.x.A optical ASI plug-in, one of the two electrical DVB-ASI outputs is replaced with an optical output. An additional ASI monitoring input becomes available at the optical transmitter input.

All Control and Monitoring parameters are available locally on the front panel (LCD display & keyboard) and remotely through a web interface (Http) or through the RS-485/232 port or through the 10/100 Base-T ethernet port. The last two use the RMCPv2 protocol. There is optionally an SNMP + MIB agent.

• APPLICATIONS

The NTC/2131/NB.A is meant for the reception over a G.703 link of video/data streams in combination with the NTC/2131/NA.A SPI/ASI to G.703/HSSI convertor.

• FEATURES

- Complies to MPEG (ISO/IEC 13818-1) system specs. & EN 50083-9 (Oct. 97) interface specs.
- Two ASI outputs
- No Null Packet Deletion in case of MPEG Transport Streams
- DVB-SPI-LVDS or serial LVDS input on sub-D connector
- Selectable internal or external clock
- 10 MHz reference input
- PRBS generator and PRBS BER decoder
- Cable distances : ASI-coaxial: 100m
- Compliant to : G.703 & HSSI (CISCO) specifications
- Data rate :
 - HSSI : 0.917 to 110 Mbps
 - G.703 : 2 rates in 2 to 45 Mbps range (to be defined at order)
- Regenerated G.703 monitor output
- HSSI DTE loopback
- Support for one SNMP alarm trap
- Local & remote M&C access to all menus through a
 - * web interface (Http protocol)
 - * RS-485/RS-232 (RMCPv2 protocol)
 - * 10/100Base-T Ethernet port (RMCPv2 + SNMP/MIB)
- User programmable menu structure
- Action Keys (group of commands under 1 button)
- Real-time clock for alarm occurrence logging
- Internal test-generator, PRBS counter
- Dynamic build up of alarm menus
- Very compact: 1 RU (height: 4,4 cm !)
- Highly reliable Newtec design
- Low cost
- CE label
- Diagnostics generator

• VERSIONS & OPTIONS

The modular architecture opens various possibilities and application fields: Firmware-packages will determine the usage and capabilities of the unit.

1. Baseband Data Interface Modules :

The interchangeable base band data interface modules provide a wide range of input interfaces via coaxial and/or sub-D connectors. Optical inputs are also available.

- NTC/3458/AA: TELCO HSSI+2x single rate G.703 interface card
 - NTC/3458.x.xA: HSSI-G.703 output 2 to 52 Mbps
 - NTC/3458.x.xB: HSSI-G.703 output 2 to 110 Mbps (HSSI extended rate)
 - NTC/3343/AA: G.703 at 8.448 Mb/s submodule used on NTC/3458
 - NTC/3343/AB: G.703 at 6.312 Mb/s submodule used on NTC/3458
 - NTC/3344/AB: G.703 at 34.368 Mb/s submodule used on NTC/3458
 - NTC/3348/AA: G.703 at 44.736 Mb/s submodule used on NTC/3458
 - NTC/3349/AA: G.703 at 2.048 Mb/s submodule used on NTC/3458
- NTC/3453/AA: DVB ASI/SPI/Serial-LVDS interface card
Hardware option: optical ASI in/out plug-in NTC/3453.x.x.A

2. 10 MHz Reference Board (optional) :

In case one needs a 10 MHz reference input and/or output, the following options are available:

- NTC/3462/AB: 10 MHz OCXO reference oscillator (normal use)
- NTC/3462/AA: 10 MHz OCXO High Stability Ref. Oscillator

3. SNMP agent and MIB library (optional) :

Needed whenever the unit needs to be controlled over Ethernet via proprietary NMS.

NTC/2131.xx.xB

Configuration help :

The AZIMUTH series provides a nearly non-exhaustive number of configuration possibilities. The web-based Azimuth Configuration Engine will easily guide you through your selection criteria. Alternatively, Newtec's sales and support team are at your full disposal for any additional information you might need. (See last page for coordinates).

• DATA SUMMARY

G.703 INPUT :

rate	: 2.048 ; 6.312 ; 8.448; 34.368 ; 44.736 MHz
connector	: BNC (F)
impedance	: 75 Ohm

HSSI INTERFACE :

connector	sub-D (F)
circuits (+/-)	
(5-18), (10-23)	RT, RD
12-25	ST
(1-14), (4-17)	TT, SD
(7-20), (9-22)	LA, LB
11-24	CA
2-15	SG
13	SHIELD
rate	0.05 - 110 Mbit/s
output levels	ECL-10 kH (330 ; -5 V)
input levels	0.15 - 1 V _{ptp} (diff. 110)

G.703 OUTPUT :

rate	: 2.048 ; 6.312 ; 8.448; 34.368 ; 44.736 MHz
connector	: BNC (F)
impedance	: 75 Ohm

ASI EL-OUT A & B :

connector	: BNC female @ 75 Ohm
coupling	: transformer
level	: 800 mV _{pp} ± 10%
rise time	: < 1.2 ns

SPI/Serial INTERFACE :

DATA INPUT :	SPI	Serial
connector	25 pin sub-D (F)	
circuits (A/B; +/-)		
1-14	CLK	RT
10-23		RD
3/10-16/23	DATA 7/0	
11-24	DVALID	RR
12-25	PSYNC	
2, 15	GND	GND
13	SHLD	SHLD
level	LVDS	

ASI OPT-OUT (option) :

connector	: SC
fiber	: 1300 nm multimode
	62.5/125 mm
transmit power	: -14 dBm (max.)
	-19 dBm (min.)
wavelength	: 1270 nm < λ < 1380 nm

ASI EL-IN A & B :

connector	: BNC female @ 75 Ohm
return loss (22-270 MHz)	: 17 dB
coupling	: transformer
sensitivity	: 200 mV _{pp}
max input	: 880 mV _{pp}

TYPICAL COAX CABLE LOSS

(AT&T - 734A, 450 Feet - 75 Ohm) :

1 MHz	: 1.2 dB
3.1 MHz	: 2.2 dB
4.2 MHz	: 2.7 dB
22.4 MHz	: 5.8 dB

HSSI CABLE :

max. length : 15 m for bitrates < 52 Mbps
1.5 m for extended range
indiv. shielded TSP : 110 Ohm
(To be ordered seperately)

CONTROL :

Interface selection : HSSI, G.703-R1, G.703-R2
Interface clock : External (fixed) 0.05 to 110 MHz
Interface rate : resolution 1 bps
ST-clock : 0.05 to 110 MHz (if HSSI)
MPEG framing : 188- 204 byte
Internal reference : slaved to (int) 10MHz or G.703
Interface equaliser (G.703) : max. 4 preset values

EXTERNAL 10.0 MHz REFERENCE (optional) :

Input level : -3 dBm up to +7 dBm
Output level : +7 dBm
connector : BNC (F) - 50

MONITOR & CONTROL INTERFACES :

- a) protocol : Http (via webbrowser)
- connector : RJ-45
- electrical : Ethernet 10 base-T
- b) protocol : RMCP **version 2 only**
- connector : 9 pin sub-D female
- electrical : RS-485 / RS-232
- c) protocol : RMCP **version 2 only** over
TCP-IP or UDP, SNMP
- connector : RJ-45
- electrical : Ethernet 10 base-T

ALARM INTERFACE :

connector : 9 pin sub-D (F)
electrical : dual switch-over contacts

MECHANICAL :

19" sub rack, height: 1RU, weight 6 kg

POWER SUPPLY :

90-130/180-260V, 105VA, 47-63 Hz

TEMPERATURE:

operational : 0° up to +40°C
storage : -40° up to +70°C

Control

Interface rate (1 bit/s resol.), 10.0 MHz source (internal or external), internal PRBS generator on/off, interface type, interface equalizer, MPEG framing (188 byte, 204 byte or internal), serial interface hardware and address, user levels, etc..

Monitoring

All control parameters, alarms (active and memorized), power supply voltages, internal temperature, transmit clock offset, buffer contents.

• PERFORMANCE

FUNCTIONALITY - HSSI :

Local DTE Loopback (via LA/LB)

FUNCTIONALITY - G.703 :

G.703 reception
Code violation verification
Monitor output

CLOCK STABILITY - HSSI

ST-CLK : ± 4 ppm/year (resol. 0.05 Hz)
TT-CLK : ± 50 ppm

CLOCK STABILITY - G.703 :

2 M : ± 50 ppm
6 & 8 M : ± 30 ppm
34 & 44 M : ± 20 ppm

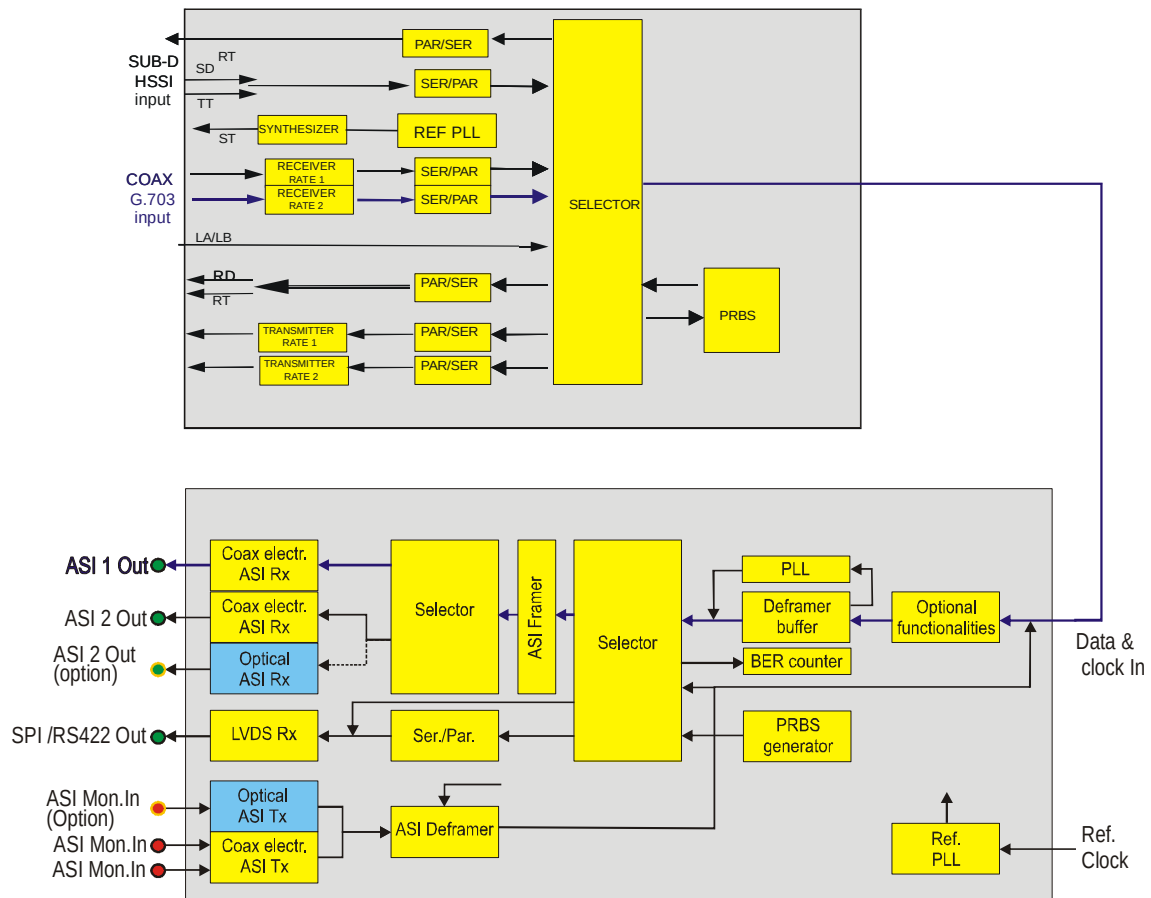
G.703- RATE	CABLE LOSS (dB)		
	loss	typ. Length	equaliser
2 Mbps :	0.0 to -10.0 dB		0
6/8 Mbps :	0.0 to -2.4 dB	0 - 550 ft	0
	-2.2 to -4.8 dB	500 - 1100 ft	1
	-3.1 to -6.0 dB	700 - 1350 ft	2
34 Mbps :	0 to -5.7 dB	0 - 550 ft	0
	-4.1 to -12.0 dB	400 - 1150 ft	1
	-5.7 to -14.0 dB	550 - 1350 ft	2
	-6.8 to -14.0 dB	650 - 1350 ft	3
45 Mbps :	0.0 to -12.0 dB	0 - 900 ft	0 (adaptive (equalizer)

FUNCTIONALITY - ASI :

ASI Baud rate OUT : (note 1)
ASI Baud rate IN : 270 MBaud ± 100 ppm
RS422 Transport Rate IN
range : 0-18 Mb/s
Packet formats accepted : 188 or 204-byte
Input packet timing (burstiness)
within 1 packet : compliant to DVB burst & byte mode

(note 1) : All input/output specified parameters comply with
DVB-A010 Rev. 1

• BLOCK DIAGRAM



• TECHNICAL LITERATURE & REFERENCES (ALSO AVAILABLE ON OUR WEBSITE)

Other related products

- NTC/2131/NA.A SPI/ASI to G.703/HSSI convertor
- NTC/2137 Transport stream ASI concentrator-deconcentrator
- NTC/2163 DVB-S satellite demodulator
- NTC/2180 DVB-S L-band satellite modulator
- NTC/2263/xx DVB-S2 satellite demodulator
- NTC/2277/xF DVB-S2 IF-band satellite modulator
- NTC/2280/xF DVB-S2 L-band satellite modulator
- NTC/3453 ASI/SPI/serial LVDS DVB interface board
- NTC/3458 Dual rate G.703/HSSI data interface board
- NTC/3462 10 MHz reference frequency module

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Please consult our website for the latest technical and commercial updates and modifications.