7800TM2-3G, 7800TM2-XIO-3G, 7800TM2-IRIG-3G

Modular Time Code Processor Card

The 7800TM2-3G occupies one card slot and the 7800TM2-XIO-3G and the 7800TM2-IRIG-3G occupy two card slots in the 3RU 7800 series frame, which will hold up to 15 modules.

The 7800TM2-3G series Modular Time Code Processor expands on the professional line of time code solutions by Evertz. The 7800TM series modules provide dual time code processing paths supporting 3G/HD/SD-SDI video signals. This unit is a combination Generator, Reader and Character Inserter for LTC, D-VITC (SDI only) or Ancillary Time Code (ATC). Applications such as reading LTC, D-VITC or ATC time codes and creating a visual burn-in or "transcoding" LTC to D-VITC or ATC time codes are natively supported.

The 7800TM2-XIO-3G version additionally provides 6 GPIOs per channel for control of various functions and for encoding/decoding GPI information in the timecode user bits. It also provides two serial ports that can be used to read timecode from devices supporting the Sony 9 Pin RS-422 compatible ports.

The 7800TM2 series modules are VistaLINK® -capable, which allows for control and configuration via Simple Network Management Protocol (SNMP). This offers the flexibility to manage the module status monitoring and configuration from SNMP enabled control systems such as Evertz VistaLINK® PRO locally or remotely.

Features & Benefits

- Two independent video paths supporting 3G/HD/SD-SDI video - supports 525i/59.94, 625i/50, 1080i/60, 1080i/50, 1080p/24sF, 720p/60, 720p/50, 1080p/50 and 1080p/60 and the 1/1.001 divisor versions where applicable - auto sense using SMPTE 352M payload ID
- 1 bypass protected BNC Serial Digital Output from each input - with embedded D-VITC according to SMPTE 266 (SDI formats only) and ATC according to SMPTE 12M-2
- 1 Monitor output from each input with visual character display of timecode
- Reads LTC and transcodes it to D-VITC (SDI only) and/or ATC onto 3G/HD/SD-SDI video
- Reads LTC, D-VITC (SDI only) and/or ATC and makes visual Character burn-in
- Reads D-VITC (SDI only) and/or ATC and transcodes to LTC
- Character Inserter displays time and/or user bits in the picture - user programmable positioning
- Outputs referenced to input or 7800 frame genlock reference
- Card edge menu using OSD to configure the operating modes
- Card Edge LEDs for signal presence, module status
- VistaLINK® - enabled offering remote control and configuration capabilities via SNMP

XIO version (2 Slots) has additional features

- 6 Programmable GPI control inputs per channel (12 total) - select modes
- Ability to 'sniff' Sony Protocol time code and convert to LTC, D-VITC or ATC as required
- External Reference BNC

IRIG version (2 Slots) has additional features

- IRIG reader reads 1 kHz IRIG-B format sine wave amplitude modulated and pulse width modulated codes (format B122) and makes visual character burn-in
- Encodes IRIG data in VANC packets on HD output video
- Reads IRIG data encoded in VANC packet from incoming HD video
- IRIG data encoded to second line of D-VITC generator with special CRC on SDI video
- Reads IRIG encoded in D-VITC from incoming SDI video
- SMPTE Time Code LTC, D-VITC and ATC generators can be slaved momentarily or continuously to IRIG reader - converts milliseconds to closest video frame number. Milliseconds and days can be transferred to VITC user bits
- Character Inserter displays IRIG day and time to millisecond resolution in the picture IRIG modes
- IRIG CS-6 compatible serial data output to drive external IRIG display

Model	Function	Special Features
7800TM2-3G	3G/HD/SD Dual LTC to Timecode Translator	For SD - D-VITC & ATC Generation For HD - ATC Generation LTC reader input
	3G/HD/SD Dual Time Code Reader/Translator/VCG	For SD - D-VITC & ATC Generation For HD - ATC Generation LTC generator output Time code reader diagnostics
7800TM2-XIO-3G	Same as 7800TM2-3G with GPIO and Serial IO	6 GPIOs per channel 2 serial ports for RS-422/RS-232 I/O
7800TM2-IRIG-3G	3G/HD/SD Dual IRIG Reader/VCG and ATC inserter	IRIG-B reader with D-VITC & ATC generation

Specifications

Serial Digital Video Inputs:

Standard:	1.485 Gb/s SMPTE 292M - 10 bit 4:2:2 (1080i/59.94, 1080i/50, 720p/59.94, 720p/50, 1080p/23.98sF) 2.970 Gb/s SMPTE 425M -10 bit 4:2:2 Level A & B (1080p/59.94, 1080p/50)*
Number of Inputs:	2
Connector:	BNC per IEC 61169-8 Annex A
Signal Level:	1V nominal
Input Equalization:	Automatic to 100m @ 1.485 Gb/s with Belden 8281 or equivalent Automatic to 80m @ 2.970 Gb/s with Belden 8281 or equivalent
Return Loss:	> 15 dB to 1.5 GHz > 10 dB to 3.0 GHz

Serial Digital Video Outputs:

Standard:	Same as inputs
Number of Outputs:	2 PGM (Relay Bypass Protected to Inputs) 2 MON with On Screen Display menu and character burn ins
Connector:	BNC per IEC 61169-8 Annex A
Signal Level:	800 mV nominal
HD Rise/Fall Times:	200 ps nominal
Return Loss:	> 15 dB to 1.5 GHz > 10 dB to 3.0 GHz

Reference Video Input:

Type:	HD Tri-Level sync, NTSC or PAL Colour Black 1 V p-p
Connector:	BNC per IEC 61169-8 Annex A (on 2 slots versions only) or Frame Genlock:
Termination:	75Ω

LTC Inputs and Outputs:

Standard:	SMPTE 12M LTC
Frame Rates:	24, 25 and 30 Fps nominal
Connector:	2 BNC per IEC 61169-8 Annex A
Number	1 LTC In 1 Switchable LTC In or LTC Out
Termination:	75Ω unbalanced
Output Level:	1 V p-p nominal
Input Level:	0.2 to 4V p-p

IRIG Reader (IRIG version only):

Standard:	IRIG 200-95 Format B122 Con-
nector:	DB15 Female
Input Level:	0.2 to 4V p-p, balanced or unbalanced

GPI/O (XIO and IRIG versions only):

Number:	12 configurable as inputs or outputs
Type:	Opto-isolated, active low with internal pull-ups to +5 V
Connector:	Female DB 15
Signal Level:	Closure to ground
Function:	User preset select or programmable functions

Serial Ports (XIO and IRIG versions only):

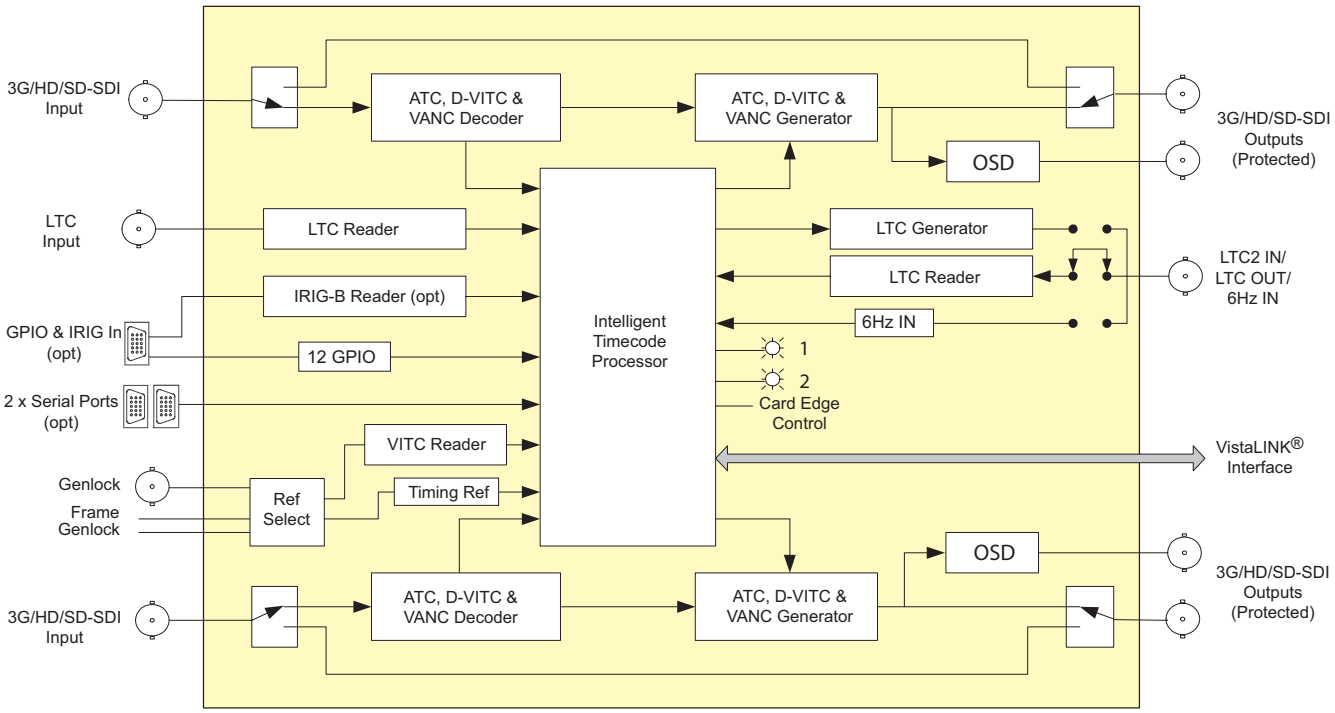
Number:	2
Connector:	Female DB 9
Signal Level:	RS-232/RS-422
Baud Rate:	Selectable baud rates (38,400 default)
Function:	
XIO version	Reads Sony Protocol time code
IRIG version	CS6 compatible IRIG output

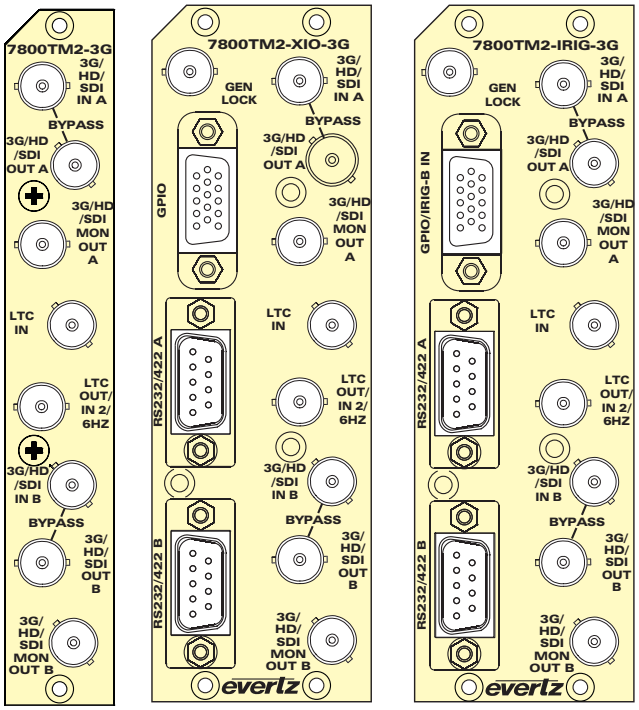
Electrical:

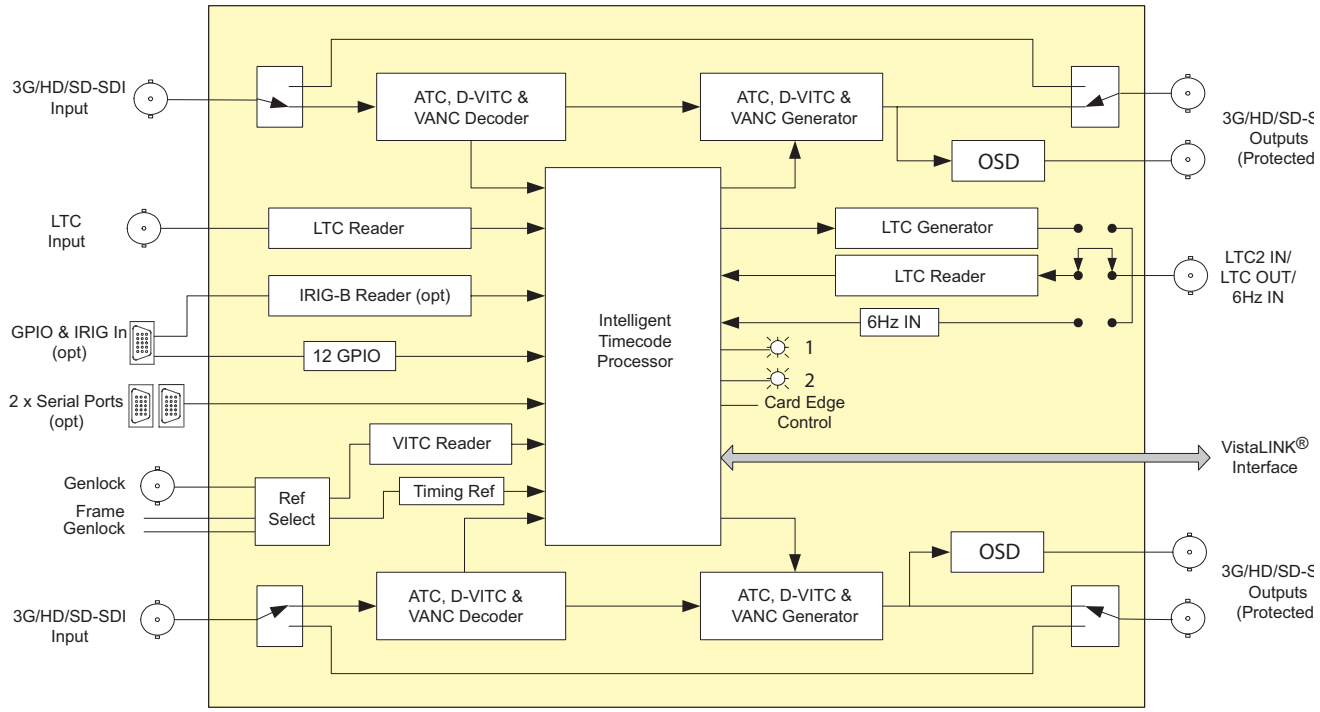
Voltage:	+12VDC
Power:	24 Watts
EMI/RFI:	Complies with FCC regulations for class A devices Complies with EU EMC directive

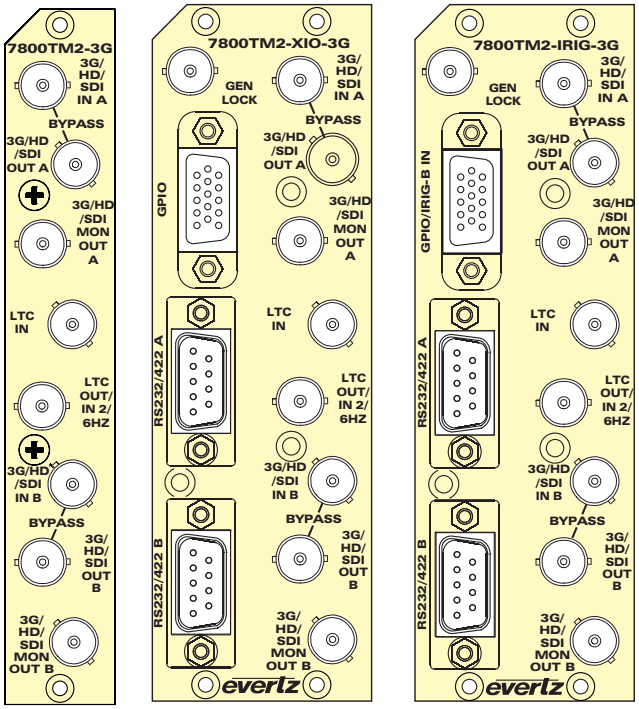
Physical (number of slots):

7800TM2-3G:	1 (2 in 7700FR-C frame - slot blocker must be installed)
7800TM2-XIO-3G:	2
7800TM2-IRIG-3G:	2


3G/HD/SD-SDI Input
ATC, D-VITC & VANC Decoder
ATC, D-VITC & VANC Generator
OSD
3G/HD/SD-SDI Outputs (Protected)
LTC Input
LTC Reader
LTC Generator
LTC Reader
LTC2 IN/ LTC OUT/ 6Hz IN
IRIG-B Reader (opt)
GPIO & IRIG In (opt)
12 GPIO
Intelligent Timecode Processor
6Hz IN
1
2
Card Edge Control
2 x Serial Ports (opt)
VITC Reader
VistaLINK® Interface
Genlock
Frame Genlock
Ref Select
Timing Ref
OSD
3G/HD/SD-SDI Outputs (Protected)
3G/HD/SD-SDI Input
ATC, D-VITC & VANC Decoder
ATC, D-VITC & VANC Generator


7800TM2-3G
7800TM2-XIO-3G
7800TM2-IRIG-3G
GEN LOCK
3G/HD/SDI IN A
BYPASS
3G/HD/SDI OUT A
3G/HD/SDI MON OUT A
GPIO
GPIO/IRIG-B IN
LTC IN
LTC OUT/ IN 2/ 6HZ
RS232/422 A
RS232/422 B
3G/HD/SDI IN B
3G/HD/SDI OUT B
3G/HD/SDI MON OUT B
evertz


3G/HD/SD-SDI Input
ATC, D-VITC & VANC Decoder
ATC, D-VITC & VANC Generator
OSD
3G/HD/SD-S Outputs (Protected
LTC Input
LTC Reader
LTC Generator
LTC Reader
LTC2 IN/ LTC OUT/ 6Hz IN
IRIG-B Reader (opt)
GPIO & IRIG In (opt)
12 GPIO
Intelligent Timecode Processor
6Hz IN
1
2
Card Edge Control
2 x Serial Ports (opt)
VITC Reader
VistaLINK® Interface
Genlock
Frame Genlock
Ref Select
Timing Ref
OSD
3G/HD/SD-S Outputs (Protected
3G/HD/SD-SDI Input
ATC, D-VITC & VANC Decoder
ATC, D-VITC & VANC Generator


7800TM2-3G
7800TM2-XIO-3G
7800TM2-IRIG-3G
GEN LOCK
GPIO
GPIO/IRIG-B IN
RS232/422 A
RS232/422 B
3G/HD/SDI IN A
BYPASS
3G/HD/SDI OUT A
3G/HD/SDI MON OUT A
LTC IN
LTC OUT/ IN 2/ 6HZ
3G/HD/SDI IN B
3G/HD/SDI OUT B
3G/HD/SDI MON OUT B
everlz

Ordering Information

7800TM2-3G	Dual Time Code Processor
7800TM2-XIO-3G	Dual Time Code Processor with GPIO and serial I/O
7800TM2-IRIG-3G	DualTime Code Processor with IRIG-B reader

Ordering Options	Rear Plate must be specified at time of order Eg: Model +3RU

Rear Plate Suffix

+3RU	3RU Rear Plate for use with 350FR, 7700FR-C, 7800FR or 7801FR Multiframe

Enclosures

350FR	3RU Portable Multiframe which holds up to 7 single slot modules
7700FR-C	3RU Multiframe which holds up to 15 single slot modules
7800FR	3RU Multiframe which holds up to 15 single slot modules
7801FR	1RU Multiframe which holds up to 4 single or 2 dual slot modules