

Product Features

- Fully compliant with ATSC standard A/110:2011
- ASI and SMPTE 310M (optional) inputs and outputs
- Integrated GPS Receiver provides 10 MHz and 1 PPS reference signals
- Optional SMPTE 310M inputs and outputs allow for ASI to SMPTE 310M conversion or SMPTE 310M to ASI conversion
- Web, SNMP and Command Line Interfaces are provided for local and remote control and software upgrades



Description and Application

The UNA 7000 design is based on the UBS Advanced Universal Modulator board, customized to operate as an ATSC Distributed Transmission (DTx) Adapter, according to ATSC standard A/110:2011.

The basic function of the DTx Adapter is to insert Cadence Sync Points (CSP), Transmitter Control Packets (TCP) and optionally Dummy Data Bytes Channel and the Field-Rate Side Channel into an MPEG-2 transport stream. The result is an MPEG-2 transport stream output that can be used to synchronize multiple transmitters operating in a single frequency network (SFN).

The DTx Adapter also includes an internal GPS receiver that provides 10 MHz and 1PPS reference signals needed for transport stream generation.

Optional SMPTE 310M inputs and outputs allow the user to configure the DTx Adapter as an ASI to SMPTE 310M or SMPTE 310M to ASI converter.

Web Interface

This feature allows local or remote control of the DTx Adapter via an Ethernet interface and is based on an internal Web server. The Web pages stored on the Web server are designed as a complete graphical user interface (GUI) for monitoring the status and setting the parameters of the DTx Adapter. The Web Interface concept is popular because remote control with this system only requires a standard computer with a network interface card (NIC) and a Web browser (Microsoft Internet Explorer, Firefox, etc.).

SNMP Client

This feature allows remote control of the DTx Adapter in accordance with the SNMP protocol (Get, Set and SNMP traps). This remote control feature is intended for systems solutions where it is desired to integrate the control of a range of SNMP compliant equipment in a common management system.

ATSC DTx Adapter

Model: UNA 7000



Rear Panel

Product Specifications

Signal Inputs

DVB-ASI (IN A, IN B)	2x Connectors: BNC (F) Impedance: 75 Ω
SMPTE 310M (optional) (AUX D)	1x Connector: BNC (F) Impedance: 75 Ω

Signal Outputs

DVB-ASI (OUT A, OUT B)	2x Connectors: BNC (F) Impedance: 75 Ω
SMPTE 310M (optional) (AUX C)	1x Connector: BNC (F) Impedance: 75 Ω

Control Interfaces

Front Panel	LCD display and cursor/ execute keys
Ethernet Interface	2 Connector: RJ45 Speed: 10/100/1000 Base-T
USB Interface	Connector: USB Type B
RS232 Interface	Connector: 9-pin SUB-D Male
RS485 Interface	Connector: 9-pin SUB-D Female
CLI (Command Line Interface)	Connector: USB (HyperTerminal) or Ethernet (HyperTerminal and Telnet)
Web GUI	Internet Explorer, Firefox, etc. Connector: Ethernet
SNMP Control Interface	Connector: Ethernet Note: MIBs are provided
Alarm Relays	Connector: RS232 and RS485 2 Dry Contact Alarm relays, triggered by any major alarm.

Power Supply

Voltage	100 - 240 VAC
Frequency	50 - 60 Hz
Power Consumption	max. 45 VA
Harmonic Correction	EN61000-3-2

Environmental

Operating Temperature	0°C to +50°C (+32°F to +122°F)
Storage Temperature	-30°C to +70°C (-22°F to +158°F)
Relative Humidity (operating/storage)	max. 95%
Cooling	Internal fans to assist natural convection

Mechanical

Size	1 U of 19" wide cabinet
Dimension (W x H x D)	48.3cm x 4.39cm x 42.7cm (19" x 1.73" x 16.8")
Weight	6.0 kg (13.2 lbs)

ETSI Compliance

Essential Requirement R&TTE Directive 1995/5/EC	Standard / Specification
Safety	EN 60950-1: 2001, A11: 2004 First Edition
Health	Not applicable. No antenna.
EMC	EN 301 489-1 V1.8.1

CE Compliance

This equipment is CE Compliant.





Product Specifications

GPS Receiver

Input Connector	F-type (F), 75 Ω 5 Vdc biased
Recommended Antenna	Bullet III GPS antenna - Trimble model no. 57860-10 or equivalent
Receiver Architecture	L1 1575.42 MHz
12 Parallel Channels	C/A code (1.023 MHz chip rate) Code plus carrier tracking (carrier aided tracking)
Tracking Capability	12 simultaneous satellite vehicles
Acquisition Time (Time To First Fix, TTFF)	< 15 seconds typical TTFF-hot (with current almanac, position, time and ephemeris) < 150 seconds typical TTFF-cold (no stored information)
Positioning Accuracy	< 5 m, 1 - sigma < 10 m, 2 - sigma
Timing Accuracy	< 2 ns, 1 - sigma < 6 ns, 6 - sigma
Holdover Time	± 1 usec during 2 hours
10 MHz Output Signal	Level: 10 dBm ± 2.5 dBm, sine wave Harmonic Level: -40 dBc max. Phase Noise: 1 Hz: < -75 dBc/Hz 10 Hz: < -110 dBc/Hz 100 Hz: < -125 dBc/Hz 1 kHz: < -135 dBc/Hz 10 kHz: < -155 dBc/Hz 100 kHz: < -155 dBc/Hz
1PPS Output Signal	Level: TTL