



Advanced Broadcast DVB-T & DVB-H ALL-MODES Modulator

General

The unit comes equipped with one agile 36.15 Mhz RF IF out (+- 1Mhz@ 1Hz steps) with adjustable level between +4 and -10 dBm level and adjustable bandwidth between 5 / 6 / 7 / 8 Mhz all from the front panel.

The RF output stage is equipped with the StreamTel's advanced DPC (digital pre-corrector) capable of adjusting left/right shoulders independently and make the output RF spectrum shape perfectly matching any possible existing transmitter specs, compensating for every possible transmitter input filter and response for the maximum efficiency.

The 7900 comes also with an adjustable digital RF clipper with in-band digital noise shaper to maximize the transmitter power efficiency and coverage without impacting on the MER signal quality (patented). MER EXCEED Engineered to be the best on the market, the DVBT-M7900H provides an overall MER (medium error rate) which exceed 47.5 dB measured with AGILENT ESA 80Mhz BW vector analyzer + DVB-T measurement suite, after all the possible processes also with our RF clipping turned on, granting an outstanding coverage, requiring less power, granting total compatibility with any existing and future set top box or receiving antenna system.

The modulator comes with TWO ASI BNC inputs for automated change-over or Hierarchical applications, and the SFN (Single Frequency network) providing both 10Mhz + 1PPS + MIP extraction from the incoming ASI TS.

An additional broadcast-grade RF stage can be installed in the modulator, providing one extra RF output agile from 30 to 1000 Mhz which works simultaneously with the 36.15Mhz output always available to drive any transmitter.

This unit includes also the DVB-H 4k modulation mode

The DVBT-M7900 is the most advanced and reliable DVB-T / DVB-H modulator on the market, made for being onair today and forever in any possible DVB-T application with no compromises.

Standard Features

- COFDM modulation >31.5 Megabit/s from ASI digital MPTS SPTS TS input
- Broadcast-Grade DVB-T digital terrestrial COFDM modulator
- Constellations: QPSK, 16-QAM , 64 QAM
- Support SFN Single Frequency Network operations with 10Mhz+1pps+Mip extraction from ASI TS
- Code rates: 1/2, 2/3, 3/4, 5/6, 7/8
- 2K / 4k / 8k IFFT Modes
- Guard intervals: 1/4, 1/8, 1/16, 1/32
- 5 + 6 + 7 + 8 MHz Bandwidth selectable from front panel
- TWO ASI input over BNC with automated change-over or Hierarchical features
- Automated Burst / Byte input format
- 188 / 204 packets automated detection and support
- Advanced Input Remultiplexer with automated null-stuffing management to accept any bitrate up to >45Mbit/s
- One agile IF 36.15 Mhz (+-1Mhz @1Hz steps) with adjustable level between +4 to -10dBm
- Built-In RF Digital Precorrector with memory save/recall and PC software management
- Total Harmonic and Spurious better than -65dB
- MER medium error ratio modulation quality >47.5 dB (AGILENT VSA 89650S 80Mhz BW Vector Analyzer)
- RS232 control port
- Configurable Urgent - NonUrgent GPI alarm out
- Low power consumption

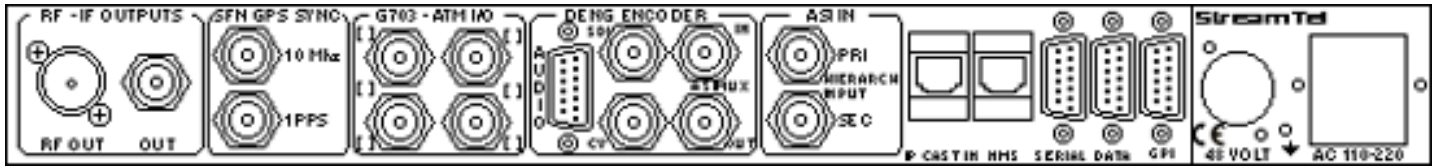
Your Benefits

- **Best DVB-T Modulator on the market**
Digital Pre-Corrector, Peak Clipper, RF Agile from 30 to 1000 MHz, extreme MER signal quality, and the most advanced features make this modulator your most important weapon to get more market share.
- **Full Set Top Box Compatibility**
Our DVB-T M7900H includes all the most advanced technologies and controls providing you the best signal quality today on the market to reach every possible antenna, Set Top Box, or mobile under every possible condition like no other modulator can do.
- **DVB-H Ready**
Our DVB-T M7900H is already compatible with the DVB-H standard for the coming up generation of mobile cell phones and devices and the 5MHz Bandwidth market.

Highlights

- 1U Rack DVB-T Modulator
- Fully compatible with Existing or New Transmitters
- Excellent MER specs for maximum Diffusion
- IF 36Mhz output to drive any Transmitter
- Also IF 70Mhz output to drive any RadioLink
- VHF/UHF IV/V built-in Exciter available
- All Modulation Types
- 16-QAM / 64-QAM / QPSK
- ASI BNC / SPI / G703 In
- Compatible with any ASI DVB Encoder / Muxer
- Up to 8 TV channels per frequency by using our XT encoders

Connector Panel

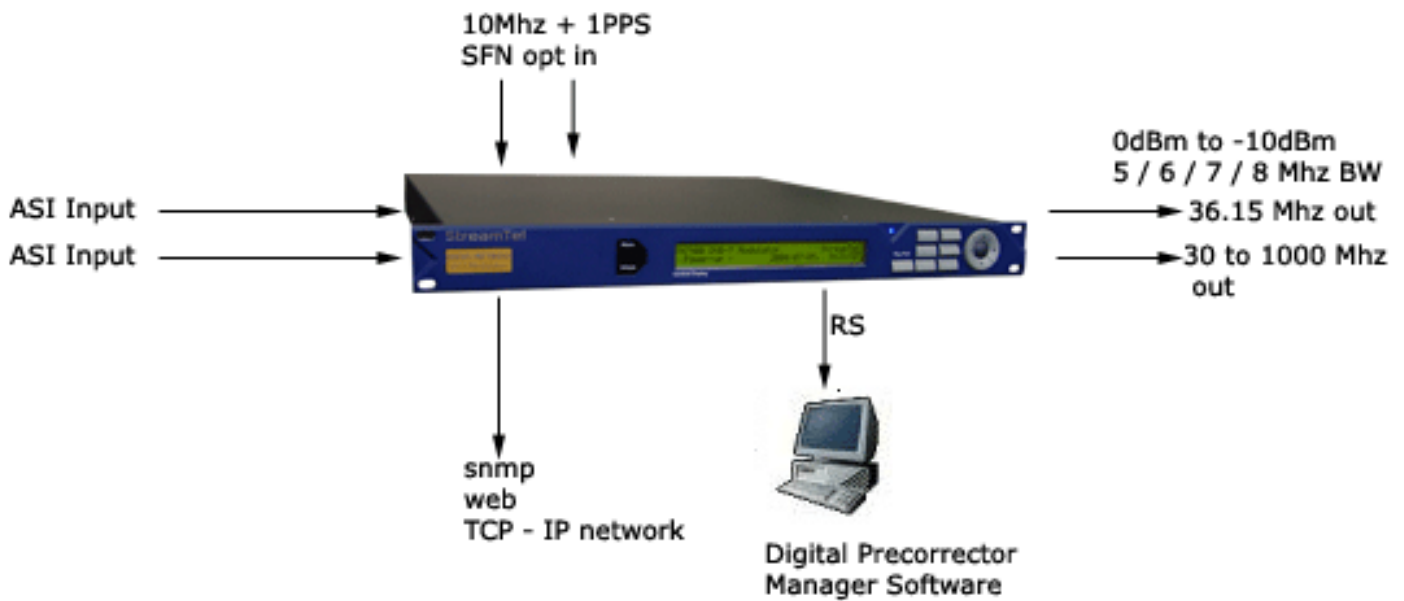


PLEASE NOTE: installed connectors depends upon the installed features and the purchased encoder version

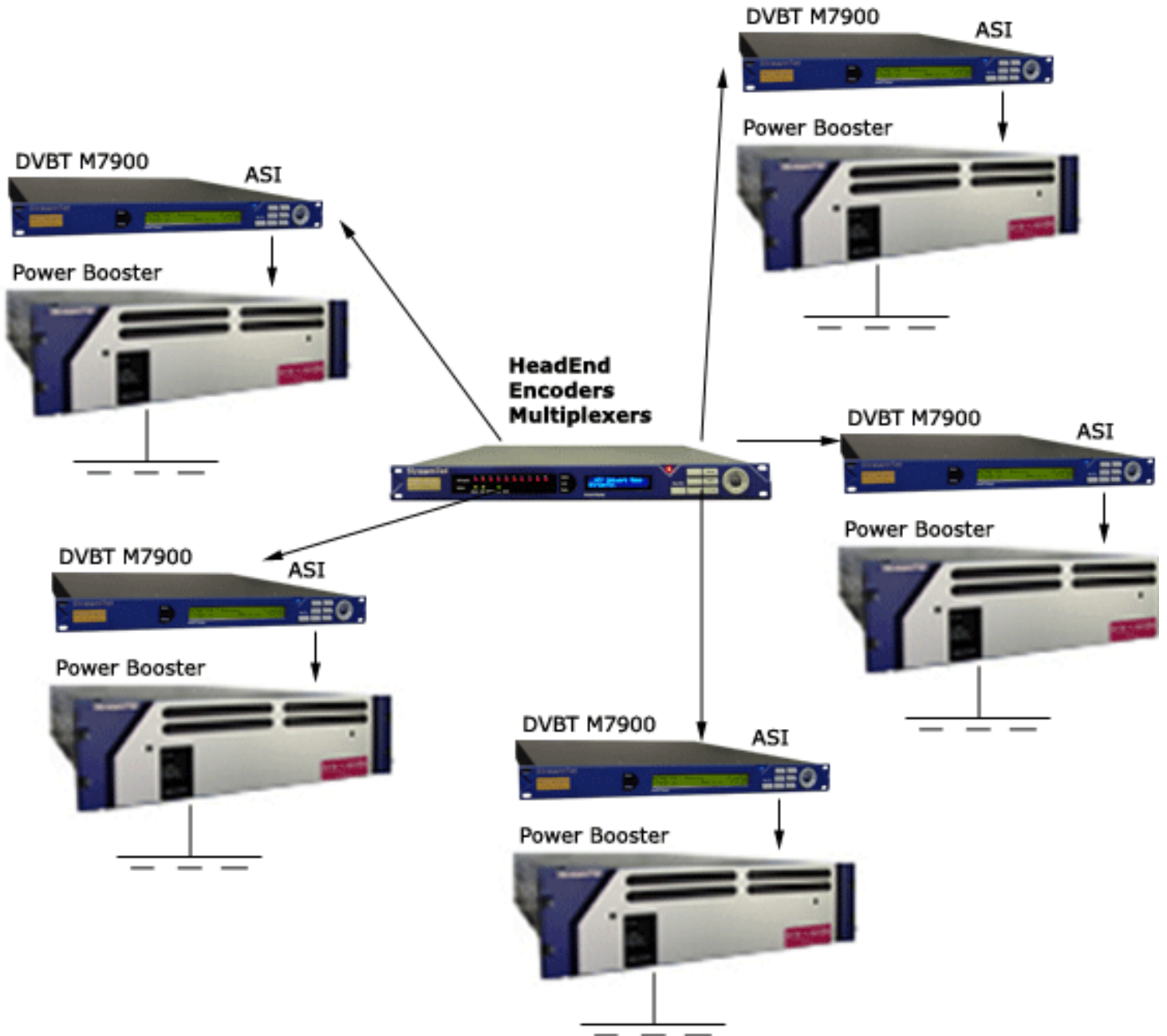
Technical Details

Inputs	<ul style="list-style-type: none"> ASI MPEG-2 Transport Stream DVB-ASI over BNC - 75 Ohm <ul style="list-style-type: none"> Dual Input Hierarchical or Failover Automated remultiplexer and bitrate adapter and hi-res dejitter Quad Hierarchical DVB-ASI input (option) DVB-SPI over LVDS (option) DVB over G703 & IP (option) <ul style="list-style-type: none"> with E3/DS3/STM1/OC3/STM4/OC12/IP ASI Packet Length: 188-byte / 204-byte ASI Packet Modes: Burst / Byte 	<ul style="list-style-type: none"> SFN Sync Input TS101191 (optional) 10 Mhz - 100mv to 3 Vpp - BNC - GPS compatible 1 PPs - 0/5V positive transition - BNC - GPS compatible SFN delay accuracy to +/- 100ns MIP decoder for SFN auto config
Modulation	<p>Standard</p> <ul style="list-style-type: none"> DVB-T EN 300 744 <ul style="list-style-type: none"> (6 / 7 / 8 MHz and MFN/SFN operation) (5 Mhz DVB-H optional) <p>Modulation Scheme 64QAM, 16QAM, QPSK</p> <p>Hierarchical Modes: alpha-1 / 2 / 4 in QAM16 and QAM64</p> <p>Error Correction</p> <ul style="list-style-type: none"> Viterbi FEC, all DVB code rates <ul style="list-style-type: none"> 1/2, 2/3, 3/4, 5/6, 7/8 Punctured convolutional Reed Solomon (204 byte mode) 	<p>Carriers Supported IFFT</p> <ul style="list-style-type: none"> 2K / 8K (4K option with DVB-H mode) <p>Guards Interval</p> <ul style="list-style-type: none"> 1/4, 1/8, 1/16, 1/32 of symbol duration <p>Data rate</p> <ul style="list-style-type: none"> 4.98 to 31.67 Mbps selectable in SFN mode Or Bit rate adaptation and PCR restamping in MFN mode
IF Output	<p>IF Modulator Output</p> <ul style="list-style-type: none"> BNC 50• 36.15 MHz +/- 1MHz C. Frequency Digital Tuning resolution: 1Hz Channel bandwidth 6 / 7 / 8 MHz (5 Mhz with DVB-H option) 0 dBm output level adj. +0dB to -10dBm <p>Output level stability:</p> <ul style="list-style-type: none"> ± 0,2 dB 	<p>IF Spurious & Harmonics</p> <ul style="list-style-type: none"> -65 dB below output signal <p>RF output return loss: => 26 dB in 50 Ohm</p> <p>IF Frequency Stability:</p> <ul style="list-style-type: none"> 0.3 ppm/year <p>Digital Precorrection BW</p> <ul style="list-style-type: none"> 18 MHz <p>Adjustable Digital clipper with in-band noise shaper (patented)</p>
BaseBand Output	<p>Baseband VHF/UHF Output</p> <ul style="list-style-type: none"> BNC 50• 30 - 1000 MHz in • Hz steps Digital Tuning resolution: 1Hz Channel bandwidth 6 / 7 / 8 MHz (5 Mhz with DVB-H option) 0 dBm output level adj. +0dB to -10dBm 	<p>Output level stability:</p> <ul style="list-style-type: none"> ± 0,2 dB <p>RF Spurious & Harmonics:</p> <ul style="list-style-type: none"> better than -55 dB typ (65 dB typ) <p>RF output return loss: => 26 dB in 50 Ohm</p>
Control and Monitoring	<p>Front Panel:</p> <ul style="list-style-type: none"> 2 Line – 40 character LCD display 4 cursor Keys + 7 function keys <p>Remote</p> <ul style="list-style-type: none"> Dual redundant 10Base T Ethernet (TCP/IP) SNMP Agent Web Server (upon request) 	<p>Local:</p> <ul style="list-style-type: none"> RS-232 - 9-way D-type Configurable Hot alarm relay (GPI) <p>SW upgrade</p> <ul style="list-style-type: none"> RS-232 Ethernet (TCP/IP)
Physical and Power	<p>Dimensions</p> <ul style="list-style-type: none"> 1RU (19" rack) 4.4 X 48.3 X 53cm 1.75" X 19" X 21" Weight: 9Kg / 18Lbs 	<p>Power</p> <ul style="list-style-type: none"> Voltage 90-260V Power consumption: 100W Max
Environment	<p>Temperature</p> <ul style="list-style-type: none"> Operating 0-50 C Storage : -40-70 C 	<ul style="list-style-type: none"> Humidity: 85% non-condensing Vibration and shock: in accordance with MIL-STD-810D
Compliance	<ul style="list-style-type: none"> CE marked in accordance with EN 50082-1 and EN 55022, Class B, FCC 	<p>Safety</p> <ul style="list-style-type: none"> in accordance with EN 60950

Stand alone typical connections



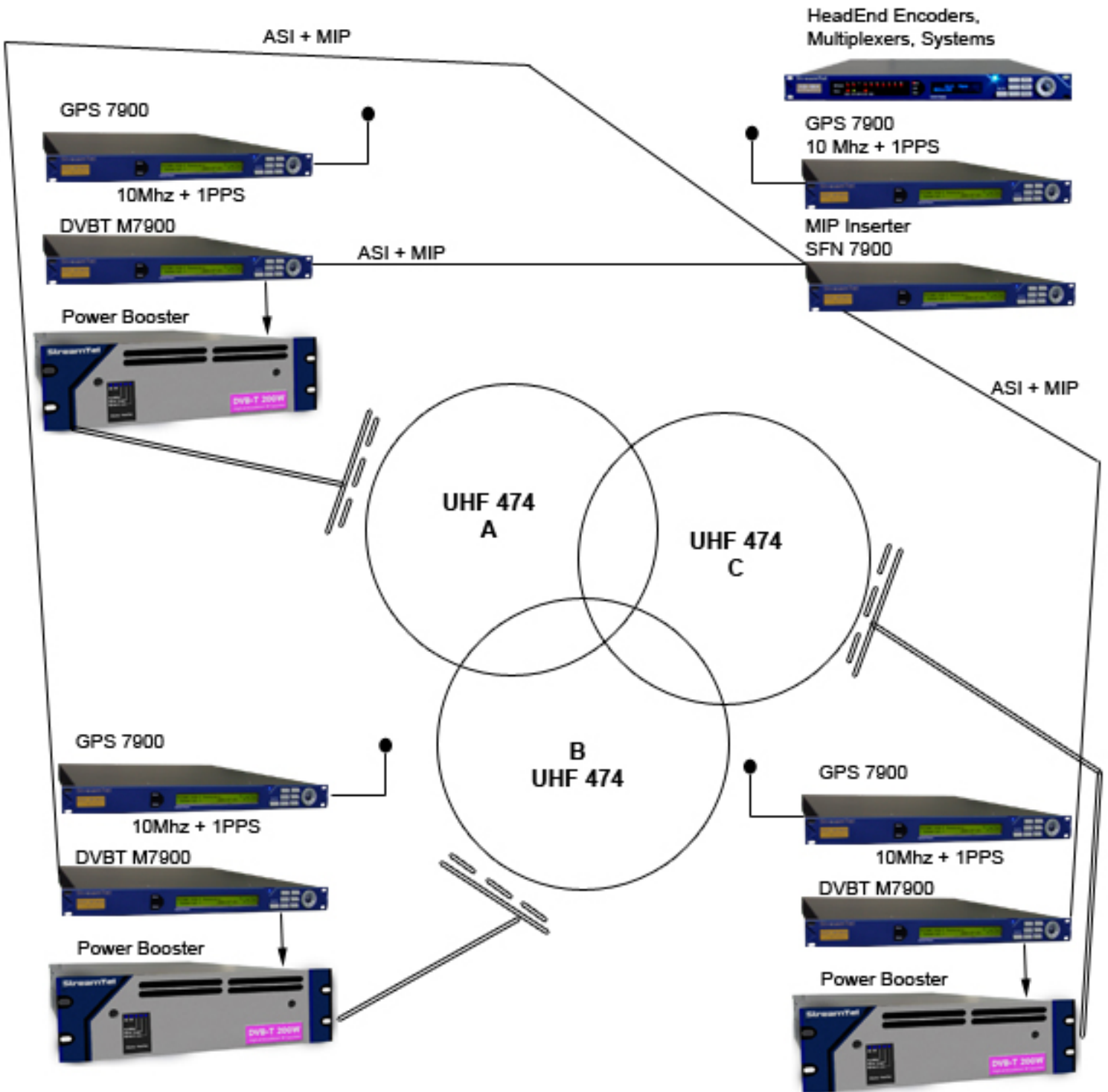
MFN Multi Frequency DVB-T Network



Application Example

SFN Single Frequency DVB-T Network

Example made on channel UHF 474 with 3 transmitters



Ordering Information

Versions

DVBT-M7900

Options

RF agile	RF CONVERTER additional output, 30 to 1000 Mhz, 1Hz steps agile, -10dBm to 0dBm
SNMP	SNMP + WEB remote control TCP-IP port
+18dB	+18 dB output booster
RX	precision VHF/UHF 5-6-7-8 Mhz Bw agile receiver module for transmodulator & GAP FILLER applications
GPS	Adds Integrated Very Ultra High stability SFN GPS receiver with external 12 Sat Head Antenna , antenna mounting kit with 20 meters of Coax Cable, to generate internal 10Mhz + 1PPS sync
IP	Gigabit IPI streaming unicast / Multicast input (10/100/1000) – compatible with any ip network
4XE1	Add 4x E1 G.703 clear channel unframed input - 2 to 8 Megabit
E2	Add E2 G.703 clear channel unframed input - 8 Megabit
E3/DS3 CC	Add E3-DS3 selectable G.703 CLEAR CHANNEL unframed input - 34 / 45 Megabit
E3 ATM	E3/PDH, 34Mb/s, electrical AAL1 AAL5 input
DS3 ATM	DS3/PDH, 45 Mb/s, electrical AAL1 AAL5 input
STM1 ELE	Add STM 1 (OC3) SDH/Sonet - 155 Megabit – Electrical - AAL1 AAL5 input
STM1 UTP	Add STM 1 (OC3) SDH/Sonet - 155 Megabit – UTP - AAL1 AAL5 input
STM1 FMM	Add STM 1 (OC3) SDH/Sonet - 155 Megabit – Optical Multi Mode input
STM1 FSM15	Add STM 1 (OC3) SDH/Sonet ,155Mb/s, optical singlemode, short haul, <15km AAL1 AAL5 in
STM1 FSM40	Add STM 1 (OC3) SDH/Sonet ,155Mb/s, optical singlemode, LR1, <40km AAL1 AAL5 in
STM1 FSM80	Add STM 1 (OC3) SDH/Sonet t,155Mb/s, optical singlemode, LR2, <80km AAL1 AAL5 in
RAS	Adds RAS DE-scrambling for secure transmissions
BISS	Adds BISS mode 0, 1 & E DE-Scrambling
SMPTE310	Adds SMPTE310 input interface
OPTOASI	Adds ASI optical input
48V	Adds redundant power supply with one AC 90-240 VAC input + one 48 Volt DC input