ST-7000+

Authorized Distributor of SatLink Electronics Co., Ltd. in America

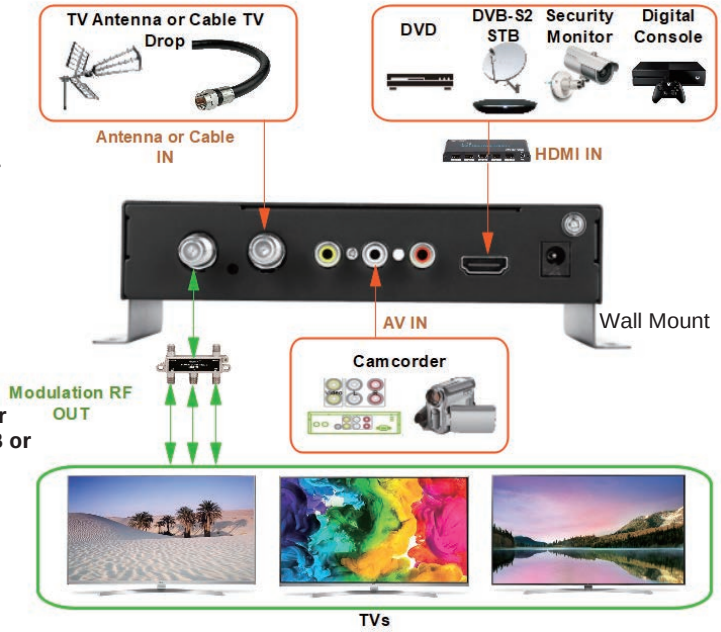
Universal HDMI to RF Modulator

- Distribute HDMI source videos from set-top box, DVD player, surveillance camera, or video streaming device to TVs over coax network
- Compact, reliable, durable, expandable and cost-effective HDMI to RF modulator for home and business applications
- Convert any HDMI or AV source in 576i(PAL)/480i(NTSC), 720p/1080i/1080p resolution to TV channel in J.83A/B DVB-C QAM, ATSC, DVB-T or ISDB-T(b) signal
- Add extra High-Definition quality MPEG-2 video with AC3 Dolby audio to the existing Broadcasting or Cable TV channel
- HD video resolution up to 1080p/i @ 30 fps
- Adjustable output power from 10 to 40 dBmV
- Intuitive on-panel 2.4" LCD and keypad operation
- Web based configuration and remote control through Ethernet connection
- Software upgrade and file transfer via USB
- Output frequency 150 to 950MHz with 6, 7 or 8MHz channel bandwidth
- ATSC antenna, CVBS AV and HDMI input interfaces

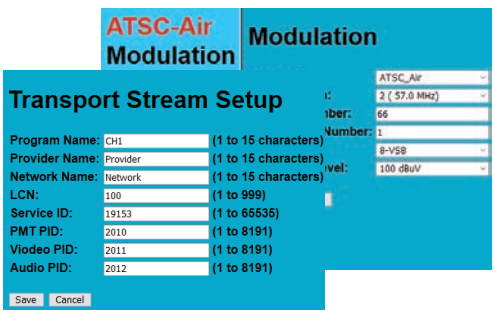
ST-7000 Universal HDMI to RF Modulator Delivers 1080p HDMI Video to TVs as Cable TV or Terrestrial Channel over Coax Network

Input
- HDMI
- Antenna 75Ω F
- RCA AV Jack

Output
- 75Ω F
  ATSC (8VSB) or
  DVB-C J.83A/B or
  DVB-T or
  ISDB-T(b)



Full HD 1080P DVB MPEG2



Web Configuration & Remote Control

① Connect the Ethernet (RJ-45) port on the back panel of the Modulator and the Ethernet port of a PC with an Ethernet cable. Power on the Modulator.

② Configure the IP address of the PC to be 192.168.1.100.

③ Launch a Web browser on PC and type http://192.168.1.15,
The default IP address of the Modulator is 192.168.1.15. The current IP address of the Modulator can be found from LCD menu command System Setup → IP Address.

④ On the Web management pages of the Modulator, all configuration settings from LCD menu are available for remote access through Web interface.

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Universal HDMI to RF Modulator

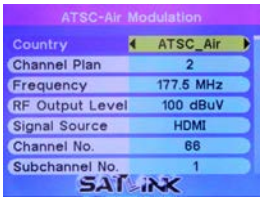
LCD Configuration Menu

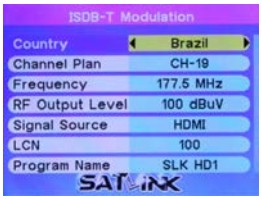
Modulation

- **Country** press◄► to show the country list, ▲▼ to select country.
- **Channel Plan** press◄► to show the channel table to select, ▲▼ to traverse; press **OK** to select HDMI output frequency from channel table.
- **Frequency** press **OK** to edit HDMI output frequency, ◄► to move cursor and ▲▼ to change frequency in modulation range; press **RETURN** to save and escape.
- **RF Output Level** press◄► to change RF output level between 70 and 100 dBμV.
- **Bandwidth** press◄► to change modulation channel bandwidth.
- **Signal Source** press◄► to select HDMI (digital) or CVBS (optional composite analog) signal source.
- **LCN** press **OK** to edit LCN, ◄► to move cursor and ▲▼ to change LCN; press **RETURN** to save and escape.
- **Channel No.** press **OK** to edit HDMI channel number, ◄► to move cursor and ▲▼ to change channel number, press **RETURN** to save and escape.
- **Subchannel No.** press **OK** to edit HDMI subchannel number, ◄► to move cursor and ▲▼ to change subchannel number; press **RETURN** to save and escape.
- **Program Name** press **OK** to edit program name with alphanumerical soft keypad; press **RETURN** to save and escape.

DVB Settings

- **Technique** Press ◄► to change modulation technique.
- **Symbol Rate** press **OK** to edit symbol rate in MHz, ◄► to move cursor and ▲▼ to change symbol rate.
- **Code Rate** Press ◄► to change code rate.
- **Carrier Type** Press ◄► to change carrier type.
- **Guard Interval** Press ◄► to change guard band interval.
- **Interleaving** Press ◄► to change interleaving.





Transport Stream (TS) Settings

- **NID** Network ID between 1 and 65535.
- **ONID** Organization Network ID between 1 and 65535.
- **TSID** Transport Stream ID between 1 and 65535.
- **SID** Service Stream ID between 1 and 65535.
- **PMT PID** Program Map Table (PMT) Packet ID (PID) between 1 and 8191.
- **Video PID** Video Packet ID (PID) between 1 and 8191.
- **Audio PID** Audio Packet ID (PID) between 1 and 8191; press **OK** to edit IDs, ◄► to move cursor and ▲▼ to change values; press **RETURN** to save and escape.
- **Service Provider** press **OK** to edit service provider name with alphanumerical soft keypad; press **RETURN** to save and escape.
- **Network Name** press **OK** to edit network name with alphanumerical soft keypad; press **RETURN** to save and escape.

System Setup

- **OSD Language** press◄► to change on-screen-display language.
- **Modulator Type** press◄► to change modulator type.
- **Key Tone** press◄► to toggle keypad beep sound between ON and OFF.
- **IP Address** press **OK** to edit IP Address, ◄► to move cursor and ▲▼ to change value; press **RETURN** to save and escape.
- **Factory Reset** press **OK** to reset and restore factory defaults.

ST-7000 Specification (subject to change without notice)

Modulation Attributes

ATSC

- **Modulator Type** ATSC-Air (8VSB) or ATSC-Cable (J.83B)
- **Frequency Range** 50 MHz to 860 MHz
- Channel Bandwidth 6 MHz
- Technique ATSC ***8VSB*** / J.83B ***64QAM,*** 128QAM, 256QAM
- MER ≥35 dB

DVB-T

- **Frequency Range** 50 MHz to 860 MHz
- Channel Bandwidth 6 MHz (Colombia/Panama), 7 MHz (Australia), ***8 MHz (Europe, New Zealand)***
- Technique 16QAM, ***64QAM***, QPSK
- Carrier Type 2K. ***8K***
- Code Rate 1/2, ***2/3***, 3/4, 5/6, 7/8
- Guard Interval 1/4, 1/8, 1/16. ***1/32***

ISDB-T(b)

- **Frequency Range** 50 MHz to 860 MHz
- Channel Bandwidth ***8 MHz***
- Technique 16QAM, ***64QAM***, DQPSK, QPSK
- Carrier Type 2K. 4K, ***8K***
- Code Rate 1/2, 2/3, 3/4, ***5/6***, 7/8
- Guard Interval 1/4, 1/8, 1/16. ***1/32***
- Interleave Mode 1, ***Mode 3***, Disabled. Used for robustness of Forward Error Correction (FEC).

DVB-C

- **Frequency Range** 50 MHz to 860 MHz
- Channel Bandwidth 8 MHz
- Symbol Rate ***editable***, ***6.875 kbps***
- Technique 16QAM, 32QAM, 64QAM, ***128QAM***, 256QAM

Modulation			
Output Frequency		50 to 860 MHz, 1 kHz Step	
Output Level		70 to 100 dBμV, 1 dB Step	
Encoding		MPEG-2; 5 to 15 Mb/s compression rate	
Interface		HDMI x 1, 75Ω F x 2, RCA AV x 1	
Video	**CVBS (Optional)**		
	Resolution	576i PAL	480i NTSC
	HDMI		
	Resolution MPEG-2 CVBS (PAL, NTSC)	**Input**	**Output**
		1920 x 1080_60p	1920 x 1080_30p
		1920 x 1080_50p	1920 x 1080_25p
		1920 x 1080_60i	1920 x 1080_30i
		1920 x 1080_50i	1920 x 1080_25i
		1280 x 720_60p	1280 x 720_30p
		1280 x 720_50p	1280 x 720_25p
	Aspect Ratio	16:9; 4:3	
Audio	**Encoding**	MPEG-1 Layer 2	
	Sampling Rate	48 kHz	
	Bit Rate	64, 96, 128, 192, 256, 320 kbps	
General			
Power Supply		12 VDC, 1.5A	
Dimensions with Rack		8" x 5.35" x 2" (204 x 136 x 51 mm)	
Weight		1.1 lb (0.5 kg)	
Temperature		0 to 50 °C (Operation) -20 to 80 °C (Storage)	

Video Quality

Video quality is optimized by determining the size and the speed to transmit MPEG packets to the TV. The packet latency and delay variation are adjusted automatically by the Modulator to reach the best video quality and performance on the TV.

Audio Codec

Audio encoding is automatically selected by the Modulator to reach the best quality according to local modulation technique.

AC3 2.1 Dolby Digital Audio coding applies to ATSC (8VSB) broadcasting in North America.

MPEG MPEG-2 Layer 1 audio coding applies to DVB-T broadcasting in Europe and South America.

ACC Advanced Audio Coding for MPEG-4 applies to ISDB-T broadcasting in South America and certain ATSC (8VSB) broadcasting in North America.

Safety Instructions

Basic safety precautions should always be followed to reduce the risk of fire, electrical shock, and personal injury, including the following:

- Do not use this product near water – for example, near a bathtub, kitchen sink, laundry tub, or swimming pool, or in a wet basement; only clean with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus including amplifiers that produce heat.
- Do not remove the cover of the modulator, cover the modulator with thick or heavy objects.
- Use only the power cord indicated in this manual if applicable.

Warranty

This device has two-year Limited Hardware Warranty and 90-day free software updates after purchase. This Limited Warranty Statement gives the customer specific legal rights. The customer may also have other rights which vary from State to State in the United States, from province to province in Canada, and from country to country elsewhere in the world. To the extent that this Limited Warranty Statement shall be deemed modified to be consistent with such local law. Under such local law, certain disclaimers and limitations of this Warranty Statement may not apply to the customer.