ST-7000+

Universal HDMI to RF Modulator

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

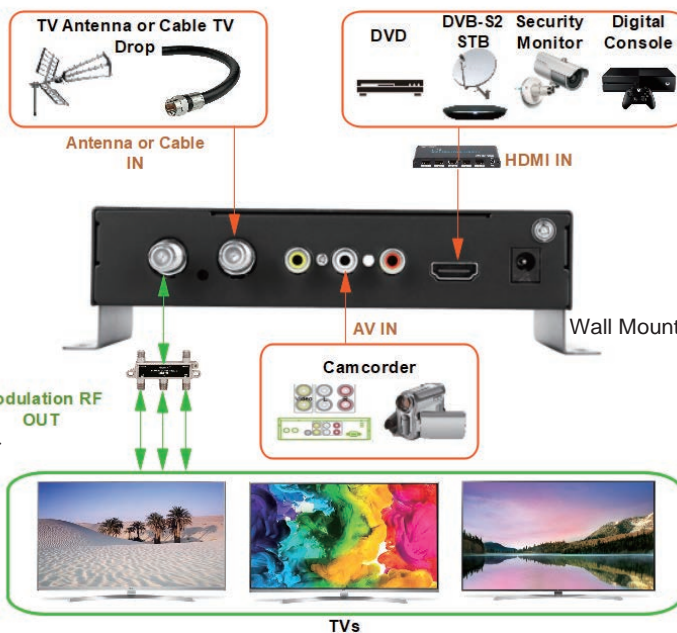- Distribute HDMI source videos from set-top box, DVD player, surveillance camera, or video streaming device to TVs over coax network
- Compact, reliable, durable, expandable and cost-effective HDMI to RF modulator for home and business applications
- Convert any HDMI or AV source in 576i(PAL)/480i(NTSC), 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
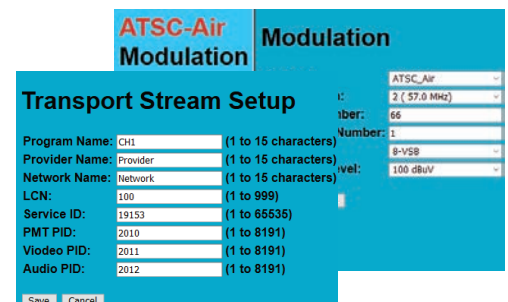- HDMI
- Antenna 75Ω F
- RCA AV Jack

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

Wall Mount

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.

ATSC-Air Modulation — Modulation

Transport Stream Setup

Program Name:	CH1	(1 to 15 characters)
Provider Name:	Provider	(1 to 15 characters)
Network Name:	Network	(1 to 15 characters)
LCN:	100	(1 to 999)
Service ID:	19153	(1 to 65535)
PMT PID:	2010	(1 to 8191)
Viodeo PID:	2011	(1 to 8191)
Audio PID:	2012	(1 to 8191)

Save   Cancel

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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.

ATSC-Air Modulation	
Country	◄ ATSC_Air ►
Channel Plan	2
Frequency	177.5 MHz
RF Output Level	100 dBμV
Signal Source	HDMI
Channel No.	66
Subchannel No.	1

ISDB-T Modulation	
Country	◄ Brazil ►
Channel Plan	CH-19
Frequency	177.5 MHz
RF Output Level	100 dBμV
Signal Source	HDMI
LCN	100
Program Name	SLK HD1

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.