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## SatLink ST-7000

# SatLink ST-7000 HDMI to RF Digital Modulator/Encoder User Manual

Model: ST-7000

## 1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of the SatLink ST-7000 HDMI to RF Digital Modulator/Encoder. The ST-7000 is designed to convert an HDMI or composite video signal into a digital RF signal (ATSC or QAM J.83B) for distribution over a coaxial cable network. This allows you to broadcast high-definition video content to multiple televisions using their built-in tuners, similar to a standard broadcast channel.

## 2. PRODUCT OVERVIEW

The SatLink ST-7000 is a compact and versatile device featuring multiple input options and a user-friendly interface. It supports 1080p video resolution and offers flexible modulation standards to suit various regional requirements.

### 2.1 Key Features

- Converts HDMI or Composite (CVBS) video to digital RF.
- Supports ATSC (North America) and QAM (J.83B) modulation standards.
- Outputs Full HD 1080p video resolution.
- Integrated LCD screen for easy configuration.
- Web-based interface for advanced settings and remote management.
- Adjustable RF output level.
- Antenna input for combining existing RF signals.

### 2.2 Front Panel Controls and Display



**Image 2.1:** Front view of the SatLink ST-7000 showing the LCD screen, power (PWR), composite video (CVBS), and HDMI indicator LEDs, along with navigation buttons (RETURN, UP, DOWN, LEFT, RIGHT, OK). The screen displays "ATSC-T Modulator", "Channel: 66-1", "183.143 MHz", and "Static IP Address 192.168.1.15".

The front panel features an LCD screen for displaying current status and menu options. Navigation buttons allow for direct configuration of the device. Indicator LEDs provide visual feedback on power status and active input source (CVBS or HDMI).

### 2.3 Rear Panel Connections



**Image 2.2:** Angled rear view of the SatLink ST-7000, highlighting the RF OUT, ANT IN, HDMI IN, VIDEO IN (composite), AUDIO IN (left/right RCA), and DC 12V IN/GND ports.

The rear panel provides all necessary connection ports:

- **RF OUT:** Coaxial output for modulated digital RF signal.
- **ANT IN:** Coaxial input for combining an existing antenna or cable TV signal with the modulated signal.
- **HDMI IN:** Input for High-Definition Multimedia Interface sources.
- **VIDEO IN (CVBS):** Composite video input (yellow RCA).
- **AUDIO IN (L/R):** Stereo audio input (white/red RCA).
- **DC 12V IN:** Power input for the included 12V DC adapter.
- **GND:** Ground connection.

## 3. SETUP

Follow these steps to set up your SatLink ST-7000 modulator.

### 3.1 Physical Connections

#### 1. Connect Video Source:

- For HDMI sources (e.g., Blu-ray player, security DVR, computer), connect an HDMI cable from your source to the **HDMI IN** port on the ST-7000.
- For composite video sources (e.g., older DVD player, camcorder), connect the yellow RCA cable to the **VIDEO IN** port and the red/white RCA cables to the **AUDIO IN (L/R)** ports.

2. **Connect RF Output:** Connect a coaxial cable from the **RF OUT** port of the ST-7000 to your TV's antenna input or to your home's coaxial distribution network.

3. **(Optional) Combine Existing RF Signals:** If you wish to combine the modulated signal with an existing antenna or cable TV signal, connect your antenna/cable feed to the **ANT IN** port.

4. **Connect Power:** Plug the included 12V DC power adapter into the **DC 12V IN** port and then into a power outlet. The PWR indicator LED on the front panel should illuminate.



**Image 3.1:** Connection diagram showing how to connect a TV antenna or cable TV drop to the ANT IN, and various HDMI/AV sources (DVD, DVB-S2 STB, Security Monitor, Digital Console, Camcorder) to the HDMI IN or AV IN ports. The modulated RF OUT is then distributed to multiple televisions.

### 3.2 Initial Configuration

Upon powering on, the device will display its current operating mode on the LCD screen. Use the front panel buttons to navigate the menu and configure settings.

- **RETURN:** Go back to the previous menu or exit a setting.
- **UP/DOWN Arrows:** Navigate through menu options or adjust values.
- **LEFT/RIGHT Arrows:** Change options or move cursor.
- **OK:** Confirm selection or enter a submenu.

It is recommended to perform an initial scan on your connected televisions after setup to find the new channel broadcast by the ST-7000.

## 4. OPERATING INSTRUCTIONS

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The ST-7000 offers various settings to customize its operation.

### 4.1 Menu Navigation and Settings

Use the front panel buttons to access and modify the following settings:

- **Country:** Select your region to ensure correct modulation standards and channel plans.
- **Channel Plan:** Choose between ATSC\_Air (for over-the-air) or ATSC\_Cable (for cable systems) for ATSC modulation, or specific channel plans for other modulation types (e.g., DVB-T, DVB-C, ISDB-T).
- **Frequency:** Manually set the output frequency if required.
- **RF Output Level:** Adjust the signal strength (e.g., 70 dBuV to 100 dBuV). Proper adjustment is crucial to avoid interference and ensure clear reception across all connected TVs.
- **Signal Source:** Select between HDMI or CVBS (composite video) as the input source.
- **Channel No. / Subchannel No.:** Assign the desired virtual channel and subchannel numbers for the modulated output.
- **LCN (Logical Channel Number):** For DVB-T/C/ISDB-T, set the logical channel number.
- **Program Name:** Assign a custom name for the broadcast channel (may not be displayed on all TVs).



**Image 4.1:** Screenshots of the ST-7000's menu interface, showing options for ATSC-Air Modulation, ATSC-Cable Modulation, DVB-T Modulation, ISDB-T Modulation, and DVB-C Modulation. Parameters like Country, Channel Plan, Frequency, RF Output Level, Signal Source, Channel No., Subchannel No., LCN, and Program Name are visible.

### 4.2 Web Interface (Advanced Configuration)

The ST-7000 features a network interface for remote programming and advanced configuration. The static IP address is displayed on the front screen (e.g., 192.168.1.15). Connect the device to your local network via an Ethernet cable (not explicitly shown in images but implied by "Static IP Address" on screen). Access the web interface by entering the device's IP address into a web browser on a computer connected to the same network. This interface may offer more detailed control over modulation parameters and network settings.

## 5. MAINTENANCE

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To ensure optimal performance and longevity of your SatLink ST-7000, follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the device. Avoid using liquid cleaners or abrasive materials.
- **Ventilation:** Ensure the device is placed in a well-ventilated area to prevent overheating. Do not block ventilation openings.
- **Power Supply:** Use only the original 12V DC power adapter provided with the unit.
- **Cable Connections:** Periodically check all cable connections to ensure they are secure and free from damage.

## 6. TROUBLESHOOTING

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If you encounter issues with your ST-7000, refer to the following common problems and solutions:

### 6.1 No Picture or Signal on TV

- **Check Connections:** Ensure all HDMI/AV input cables, RF output cable, and power adapter are securely connected.
- **Verify Input Source:** Confirm the correct input source (HDMI or CVBS) is selected on the ST-7000's menu.
- **TV Channel Scan:** Perform a channel scan on your television. Ensure your TV's tuner is set to "Antenna" or "Cable" depending on your setup, and not "HDMI" or "AV".
- **RF Output Level:** Adjust the RF Output Level in the ST-7000's menu. A level that is too low or too high can cause signal issues.
- **Source Device:** Ensure your HDMI/AV source device is powered on and outputting a signal.

### 6.2 Grainy or Poor Picture Quality

- **Signal Amplification:** For long cable runs or multiple splits, a signal amplifier may be necessary to maintain signal strength. Install the amplifier before your distribution switch.
- **RF Output Level:** Fine-tune the RF Output Level. Too high a level can cause interference, while too low results in a weak signal.
- **Cable Quality:** Ensure you are using high-quality coaxial cables and connectors.
- **Source Quality:** Verify the quality of the video signal from your source device.

### 6.3 Audio/Video Delay or No Audio

- **Source Audio Format:** The ST-7000 may have limitations with certain audio formats (e.g., 5.1 surround sound). If experiencing no audio, try configuring your source device to output stereo audio.
- **TV Settings:** Check your TV's audio settings for any processing that might introduce delay.
- **Power Cycle:** Power off and then power on both the ST-7000 and the connected TV/source device.

### 6.4 Device Freezing, Static, or Color Issues (e.g., Purple Screen)

- **Power Cycle:** Disconnect the power adapter, wait 10 seconds, and reconnect it. This can resolve temporary glitches.
- **Firmware:** Ensure the device is running the latest firmware. Check the manufacturer's website for updates and instructions.
- **HDMI Source Compatibility:** Some HDMI sources may have compatibility issues. Try a different HDMI source if possible.

## 7. SPECIFICATIONS

Feature	Detail
Model Number	ST-7000
Input	HDMI, Composite Video (CVBS), Stereo Audio (RCA L/R)
Output	RF Coaxial (ATSC, QAM J.83B)
Video Resolution	Up to 1080p
Product Dimensions (L x W x H)	10 x 6 x 3 inches
Item Weight	3.23 pounds
Power Supply	DC 12V (adapter included)
Manufacturer	SatLink Electronics Co., Ltd.

## 8. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation included with your purchase or visit the official SatLink website. Keep your proof of purchase for warranty claims.

If you require further assistance beyond the scope of this manual, please contact SatLink customer support.

