DATA-TRONIX®

USER GUIDE & INSTALLATION MANUAL

DT-ATSC-IP-8

8 Input ATSC/QAM to IP Processor

Table of Contents

Safety Precautions

The presence of this symbol is to alert the installer and user to the presence of uninsulated dangerous voltages within the product's enclosure that may be of sufficient magnitude to produce a risk of electric shock.

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS DEVICE TO RAIN OR MOISTURE. DO NOT OPEN THE UNIT. REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

> ➢ DO NOT apply power to the unit until all connections have been made, all components have been installed and all wiring has been properly terminated.
> ➢ DO NOT terminate, change or uninstall any wiring without first disconnecting the unit's power adapter from the device.
> ➢ This device is supplied with the appropriately rated power supply. The use of any other power supply could cause damage and invalidate the manufacturer's warranty.
> ➢ DO NOT connect the power cord to the device if the power cord is damaged.
> ➢ DO NOT cut the power cord.
> ➢ DO NOT plug the power cord into an AC outlet until all cables and connections to the device have been properly connected.
> ➢ The device should be installed in an environment consistent with its operating temperature specifications. Placement next to heating devices and ducts is to be avoided as doing so may cause damage. The device should not be placed in areas of high humidity.
> ➢ DO NOT cover any of the device's ventilation openings.
> ➢ DO NOT cover or obstruct the device's fan or fan openings.
> ➢ If the device has been in a cold environment allow it to warm to room temperature for at least 2 hours before connecting to an AC outlet.

Package Contents

This package contains:
> ➢ One DT-ATSC-IP-8
> ➢ One power cable
> ➢ One installation / configuration manual (An eManual will be supplied)

Unpacking and Inspection

Each unit is shipped factory tested. Ensure all items are removed from the container prior to discarding any packing material.

Thoroughly inspect the unit for shipping damage with particular attention to connectors and controls. If there is any sign of damage to the unit or damaged or loose connectors contact your distributor right away.

Product Description

The Data-Tronix DT-ATSC-IP-8 allows the operator to create a custom IPTV distribution system output from ATSC off-air and/or QAM input sources. This unit accepts eight 8VSB Off-Air or clear QAM sources and outputs these in IP. The outputs can be mapped to a desired unicast or multicast IP address. The DT-ATSC-IP-8 unit will also process most major local networks broadcast that have a second or third local channel which can contain important weather related content, local sports, and secondary programming. Integrators who are concerned with reliability will find this unit to be the perfect solution for adding external Off-Air or clear QAM content to their IP distribution system whether it is distributed through an existing internal network or a dedicated IP video distribution network. Additionally it's flexibility provides a convenient, reliable, inexpensive secondary source for local broadcast sources when the primary source (satellite, CATV etc.) is not available.

Key Features

- 8 Independent ATSC:8VSB/J.83b (QAM-B) Inputs

- Up to 32 Independent SPTS IP Output Streams

- Graphical User Interface for configuration

- Sources can be mapped to Unicast or Multicast IP outputs

Images of Front and Rear Panels of DT-ATSC-IP-8

SPECIFICATIONS:

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Terrestrial/ Cable	**Input**	**F connector**	Number	8
	Loop Through			8
	Required Input Levels			-6dBmV to +15dBmV
	Channel Type			ATSC:8VSB, J.83B: STD / HRC / IRC
	Frequency		MHz	ATSC: 177- 803, J.83B: 177~861 (STD)/ 175.7587 to 859.7929 (HRC)/ 177.0125 to 861.0125 (IRC)
IP	**Connector**	**RJ45 1000Base-T Ethernet**		1 Utility Port (Management)
				1 IP Out Port (Data)
	Streaming Protocols			Unicast UDP/RTP
				Multicast UDP/RTP
	SPTS Streaming		Number of Streams	32
LED	**Power LED**			1x Green (ON)
	Indicator LEDs			8x Green (Input Signal Locked) OFF (Input Signal Unlocked)
General	**Configuration**	**RJ45 100Base-T Ethernet**		Web GUI
	Control Protocols			HTTP/Restful API
	Power		Watt	35
	Input Line Voltage		VAC/Hz	95 - 264 / 50 - 60
	Dimensions		Inches/mm W x D x H	19.00" x 9.37" x 1.70" 482.7 mm X 238 mm X 43.2 mm (Excluding Connectors)
	Weight		lbs./kg	8 lbs 13.01 oz, 4 kg

*Subject to change without notifications
*Manufactured under License of Dolby Laboratories

Installation

System Installer must adhere to Article 820-40 of the NEC that provides guidelines for proper grounding and specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as possible.

System/Site Requirements

1. It is highly recommended that the hardware be housed /placed in a well-ventilated area with temperatures not to exceed between 0C to 45C.

2. RF Antennas must be properly installed and verified for proper signal reception and signal levels.

3. IGMP Capable (and enabled) Network switches **ARE REQUIRED** for IP Output systems. It is highly recommended that a professional IT contractor or staff member properly sets up and configures the IGMP Switch.

Hardware Installations and Connections

It is highly recommended that quality cables and connectors be used for all video and audio source connections.

1. The unit is designed to be rack mounted in a standard EIA 19" rack.

2. Connect the video source to the unit's Tuner Input jack. Use a quality 75Ω coaxial cable with "F" connectors to ensure the quality.

   Repeat this step for each video source connection required.

   Be sure the connections for each source are consistent with the unit's inputs (Input 1…Input 8).

3. Connect an ethernet cable from IP OUT Port on the destination.

4. Connect an ethernet cable from UTILITY Port on the DT-ATSC-IP-8 to a PC/MAC for setting.

5. Connect the included power cord to the unit's **POWER** plug.

6. Connect the power cord to an appropriately rated AC power outlet.

Reset to Default

1. *With the unit's power cord disconnected, press and hold reset button.*
2. *Reconnect power to the unit while holding the reset button, the PWR LED will automatically flash on and off once, then release the reset button to reset to default.*
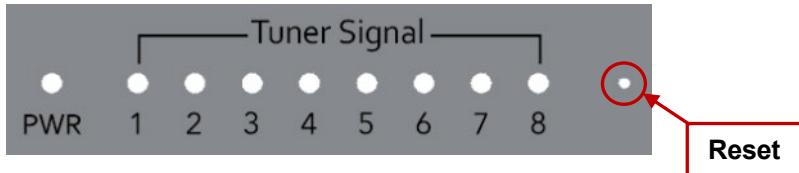
Warning!

"Reset to Default" will automatically reset all saved settings back to factory default settings. All saved settings will be lost!

Device Programming and Setup via GUI Interface

Connecting to the GUI Interface

Factory Default IP: 192.168.1.9

◊ Connect an Ethernet cable directly (**no Cross Over cable required**) to the UTILITY Port on the rear panel of the encoder or connect the Ethernet cable to an Ethernet switch. Connect an Ethernet Cable to your PC/Laptop.

◊ Modify your PC/Laptop IP address to 192.168.1.11.

◊ Enter '192.168.1.9' into your web browser.

◊ Enter GUI and make required device changes.

◊ Save all changes as required, upload and reboot changes.

◊ Verify parameters then end web session.

Overview Page

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Overview	RF Setup	Streaming Setup	Network Setup	Administration

Device Name	Model Number	Serial Number	MAC Address	Firmware Version	Net Version
DT-000000	DT-ATSC-IP-8	1940 173819	F8:0D:EA:92:A6:FB	20190923_1020	20190923_1001

RF	Signal Strength		Signal Quality	
RF 1		88.0%		97.0%
RF 2		88.0%		97.0%
RF 3		85.0%		97.0%
RF 4		89.0%		97.0%
RF 5		96.0%		90.0%
RF 6		92.0%		90.0%
RF 7		90.0%		90.0%
RF 8		88.0%		90.0%

Total Output Bitrate	189.660 Mbps
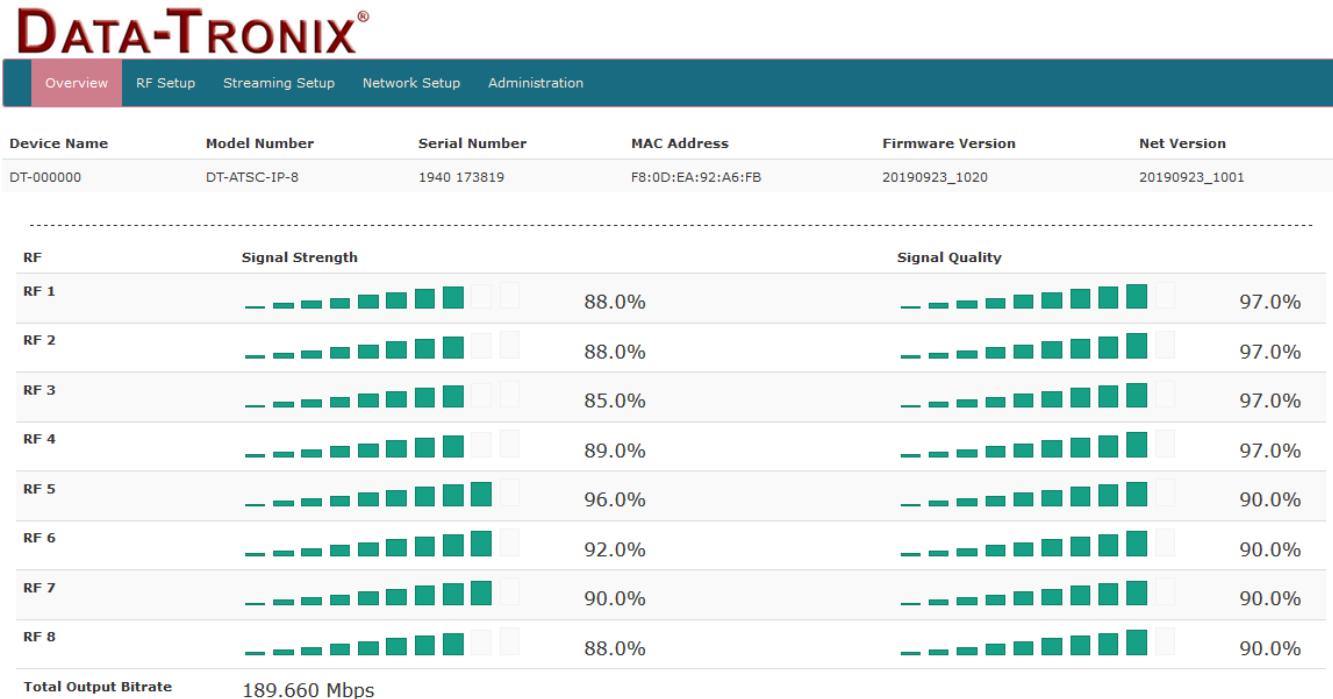
System Parsing / Response Time:
The initial System Parsing time will range from 4-6 minutes on average as the system identifies and populates the required parameters.
As the user navigates the device's menu note that a small delay may occur in populating the data on the screen as the system is constantly performing system parsing and system house keeping functions.

Overview Page will provide an overall system status of the DT-ATSC-IP-8 Converter state: Signal Strength and Signal Quality.

System Parsing / Response Time:
The initial System Parsing time will range from 3-4 minutes on average as the system identifies and populates the required parameters.

As the user navigates the device's menu note that a small delay may occur in populating the data on the screen as the system is constantly performing system parsing and system housekeeping functions.

Login

Once the Encoder Setup Tab is selected you will be prompted to enter the user name and password for device.

GUI Login Password:

Default User Name: **admin**

Default Password: **Admin123**

> To view this page, you must log in to area "Protected" on 169.254.141.27:80.
> Your password will be sent unencrypted.
>
> Name: |
> Password:
> ☐ Remember this password in my keychain
>
> Cancel   Log In
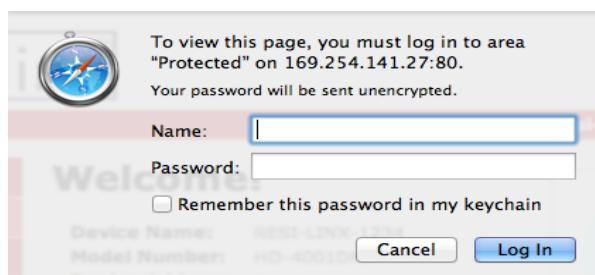
Note: To change the Password for the GUI go to the Administration Tab

2. RF Setup

Use the RF Setup Tab to configure each RF Input.

Up to eight (8) RF signals can be assigned.

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Overview | RF Setup | Streaming Setup | Network Setup | Administration

RF Setup

This page allows the user to configure the parameters of each rf. After changes are made, use the `Save and Confirm` button. The demodulators will apply the new settings.

	Mode	Standard	Constellation	Channel Type	Frequency(MHz)
1	Manual	J.83B (QAM-B)	256-QAM	STD	7 (177.000 MHz)
2	Manual	J.83B (QAM-B)	256-QAM	STD	8 (183.000 MHz)
3	Manual	J.83B (QAM-B)	256-QAM	STD	9 (189.000 MHz)
4	Manual	J.83B (QAM-B)	256-QAM	STD	10 (195.000 MHz)
5	Manual	ATSC	8VSB	N/A	66 (785.000 MHz)
6	Manual	ATSC	8VSB	N/A	67 (791.000 MHz)
7	Manual	ATSC	8VSB	N/A	68 (797.000 MHz)
8	Manual	ATSC	8VSB	N/A	69 (803.000 MHz)

Save and Confirm   Cancel

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◊ **Select** RF Setup Tab.

◊ **Enter** the appropriate RF parameters for each RF signal.

○ **Mode:** Manual/Disabled (Default Setting: Manual).

○ **Standard: Select** ATSC / J.83B (QAM-B).

○ **Constellation: Select** and Set the appropriate Constellation.

(256-QAM/64-QAM for J.83B (QAM-B) & 8VSB for ATSC)

○ **Channel Type: Select** and Set the appropriate Channel Type, STD/HRC/IRC.

○ **Frequency (MHz): Select** and Set the desire Frequency (MHz) from the drop down list.

◊ **Save and Confirm** all parameters set.

3. Streaming Setup

The Streaming Setup page allows the user to configure up to 32 Independent SPTS Output Streams. The user can select which columns will display on the Streaming Setup page for a better analysis of the configured parameters. Move the cursor to the "Select Columns" icon and press the icon to set. After selecting the columns, press the "Apply" button at the bottom to apply the changes.

Once the Streaming Setup is completed the system will parse and populate the Streaming Setup page.

1. **Enable** each stream by checking the check box.
   - To Disable the stream- uncheck the check box.
2. **Enter** output Streaming Destination address into Streaming Destination field.
3. **Enter** TTL value as required.
4. **Save and Confirm** all changes.
5. **Select** RF Tab 2 thru RF Tab 8 and enter stream Destination and TTL on each RF tab.
6. **Save and Confirm** all changes on each tab.

4. Network Setup

Management / GUI IP Address Setup

Management IP Setup

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| Overview | RF Setup | Streaming Setup | Network Setup | Administration |

Network Setup

This page allows the user to configure the device's network settings.

CAUTION: Incorrect settings may cause the device to lose network connectivity. Recovery options will be provided on the next page.

| Management IP | Streaming IP |

Management IP

Hostname: DT-000000

MAC Address: F8:0D:EA:92:A6:FB

IP Address Mode: ○ DHCP ● Static IP

IP Address: 192.168.8.60

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.8.254

[Save and Confirm] [Cancel]

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1. **Select** Network Setup tab to manage the IP Address of the device.
2. **Modify** Hostname as required.
3. **Select** DHCP or Static IP.
4. **For Static IP: Select Static IP** and enter Static IP address for device. (record New IP address).
5. **Enter** Subnet Mask.
6. **Enter** Default Gateway.
7. **Save and Confirm** all changes.

5. Administration

Streaming IP

Streaming IP

IP Address Mode:	○ DHCP ● Static IP
IP Address:	192.168.1.10
Subnet Mask:	255.255.255.0
Default Gateway:	0.0.0.0

1. **Select** Network Setup.

2. **Select** Streaming IP Tab.

3. **Select** DHCP or Static IP.

4. **For Static IP: Select Static IP** and enter Static IP address for device. (record New IP address).

5. **Enter** Subnet Mask.

6. **Enter** Default Gateway.

7. **Save and Confirm** all changes.

Administration

Reboot Device

Reset to default

Backup and Restore Configuration

Configurations:	Backup	Backup and download current configuration settings to a local file.
Restore:	📁 Choose file	
	Upload settings	Upload the pre-saved configuration settings to device.

Reboot

Use the Reboot command button to reboot the device.

Reset to Default

Use the Reset to Default button to reset all parameters to original factory settings.

****Caution****

Selecting "Reset to Default" will automatically reset all saved settings back to factory default settings. All saved settings will be lost.

Backup

We highly recommend saving your device's setting.

1. Select Administration tab.
2. Select backup from the menu.
3. Locate and name file for future use.

Restore

1. Select Administration tab.
2. Select "Choose file" menu.
3. Locate the required file to be imported.
4. Select "Upload settings" to import the selected file into the device.
   Note: backup can be imported to assist in setting up new or multiple devices onsite.
   Remember to save and backup any and all changes.

Firmware Upgrade

Model Number:	DT-ATSC-IP-8
Serial No.:	1940 173819
Firmware Ver.:	20190923_1020
Firmware Image:	📁 Choose file

📁 Upload image   To upgrade the device's firmware, select the required firmware image file then upload it to the device.

Firmware Update

Use the Firmware upgrade section to import new FW versions.

1. Select Administration tab.
2. Select "Choose file" menu.
3. Locate the required image file to be imported.
4. Select "Upload image" to import the selected file into the device.
   Note: backup can be imported to assist in setting up new or multiple devices onsite.
   Remember to save and backup any and all changes.

Change Password

Use the Change Password section to change or modify the device's password as desired.

Change Password

CAUTION: The new password must contain:

- 6~8 characters
- At least one digit
- At least one uppercase character
- At least one lowercase character

Old Password:	
New Password:	
Retype New Password:	

Save and Confirm

After changing the password use the Save and Confirm button. The browser will redirect to the Overview page allowing the user to use the new password.

Satellite Setup Table

RF 1	
Mode	
Standard	
Frequency (MHz)	
Constellation	
Code Rate	
Guard Interval	
Transmission Mode	

RF 2	
Mode	
Standard	
Frequency (MHz)	
Constellation	
Code Rate	
Guard Interval	
Transmission Mode	

RF 3	
Mode	
Standard	
Frequency (MHz)	
Constellation	
Code Rate	
Guard Interval	
Transmission Mode	

RF 4	
Mode	
Standard	
Frequency (MHz)	
Constellation	
Code Rate	
Guard Interval	
Transmission Mode	

RF 5	
Mode	
Standard	
Frequency (MHz)	
Constellation	
Code Rate	
Guard Interval	
Transmission Mode	

RF 6	
Mode	
Standard	
Frequency (MHz)	
Constellation	
Code Rate	
Guard Interval	
Transmission Mode	

RF 7	
Mode	
Standard	
Frequency (MHz)	
Constellation	
Code Rate	
Guard Interval	
Transmission Mode	

RF 8	
Mode	
Standard	
Frequency (MHz)	
Constellation	
Code Rate	
Guard Interval	
Transmission Mode	

System Questionnaire / Recommendations

1. A complete and accurate site survey must be completed by a Satellite System Integrator prior to the purchase or installation of any satellite reception hardware.

2. A complete and accurate list of desired satellite orbit spots and transponders must be obtained.