DT-324D

IP to ASI CONVERTER

QUICK CONFIGURATION GUIDE

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PROMAX

QUICK CONFIGURATION GUIDE

DT-324D

1 INTRODUCTION

DT-324D module is a converter from IP to ASI that allows you to link an IP network to a MPEG-2 ASI network.

Input connector must be connected to an IP network, carrying MPEG-2 transport stream packets. At the four outputs are delivered MPEG-2 packets in ASI format.

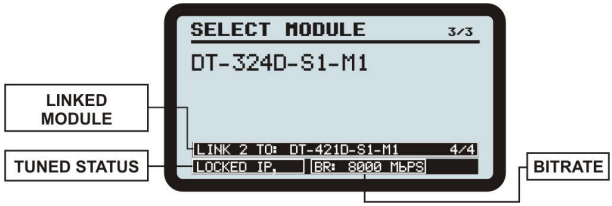
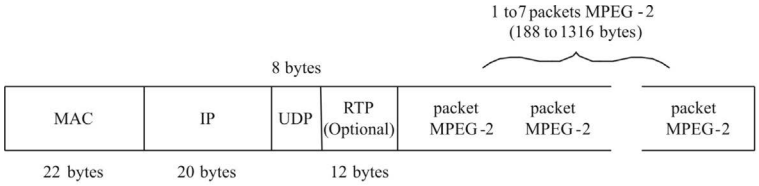


Figure 1.- DT-324D Configuration.

The 100/1000 Mbps input must be connected to an IP network carrying MPEG-2 transport stream packets. The module extracts the IP streams from four transport streams corresponding to four DVB-ASI outputs available.

The figure below shows a format of Ethernet stream accepted, where it is shown the head for each layer of the network:



User must specify IP addresses and UDP port for every TS he want to convert (IP addresses should not be repeated).

The synchronization algorithm of the module requires that each TS has been generated in a constant Packet Rate at the origin.

IMPORTANT NOTE: There are applications that generate IP streams to remove null packets from the original stream. Then the packet rate is no longer constant. In this case the module will not properly synchronize the stream.

The **DT-324D** module can be manufactured with two different configurations. Each of these allows a different number of TS IP inputs and to include some multiplexes at the outputs. By this way they can generate **MPTS** (Multiple Program Transport Stream) from **SPTS** (Single Program Transport Stream). Available configurations are:

- **SPTS Configuration**:

  In this configuration are included multiplexers inside the module that allows combining different SPTS (Single Program Transport Stream) to deliver four MPTS each output, adding PAD tables, SDT tables,... In particular, 4 input SPTS by ASI channels are supported. These are multiplexed, forming MPTS delivered at the outputs.

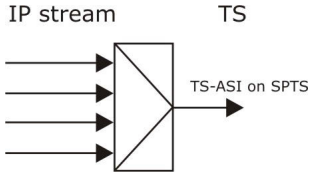


Figure 2.

This configuration requires some considerations:

- SPTS streams must contain a SPTS_PAT table (PAT with only 1 service_id, indicating 1 PMT).

- Each one of the multiplexers extracts up to 4 streams (each one identified with a different PID) from each input IP stream changing the original PIDs. Then each stream inside an ASI has its own and unique PID. PAT and PMT tables are regenerated and also added to the NIT and SDT tables (also regenerated).

- MPTS channels do not pass through multiplexes and therefore, are routed directly to the outputs with no restrictions.

- **MPTS Configuration**:

  In this configuration are caught up to 4 TS that contains MPTS (Multiple Program Transport Stream) and are extracted directly from each one of the ASI outputs.

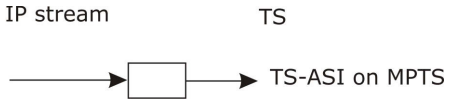


Figure 3.

1.1 SPECIFICATIONS

IP INPUT

Type	1 Ethernet Output 100/1000 Mbps.
Connector	RJ45.

TS OUTPUT

Type	4xDVB-ASI.
Connector	BNC Female, 75 Ohms.

TRANSPORT STREAM

Communication protocol	UDP or RTP/UDP.
Transmision methode	MULTICAST / IGMP Version 2.
Payload	From 1 to 7 packets MPEG-2.

Configuration: Through the **DT-800** Control Module in local (keypad) or remote mode (PC). See **DT-800** specifications.

Signaling LEDs

ON	**Green Light**:	Module in operation.
	Off:	Module stopped.
PROGRAM	**Intermittent Light**:	Module in programming mode.
	Asynchronous intermittent Light:	The **DT-800** have not received communication from the module for more than 60 seconds.
	Off:	Module in normal mode.
IP:	**Red Light:**	There is not Ethernet connection.
	Intermittent Light:	Ethernet connection established but there is not data traffic to the module.

Off: Ethernet connection established and there is data traffic to the module.

TS-OUT (1-4): Which one of the LEDs indicates a status corresponding to each ASI output.

Red Light: It is not delivering any TS at the output (probably because there is not any IP stream associated to this output).

Intermittent Light: An input IP stream associated to an output is being processed. It happens just after setting a parameter of the IP stream. The process can take some seconds.

Green Light: TS are being delivered at the output.

Power supply Via the **DT-800** Control and Power Module.
Connector JST B08P-XL-HDS (Connecting Cable supplied with the **DT-800**).

Voltage and highest Consumption +12 V, <0,2 A ;
+5 V, <1,7 A.

Operating environmental conditions

Altitude	Up to 2000 m.
Temperature range	From 5 °C to 50 °C.
Max. Relative humidity	80 % (up to 31 °C), decreasing lineally up to 20 % at 50 ºC.

Mechanical features

Dimensions	A. 50 x Al. 262 x Pr. 230 mm.
Weight	0,820 kg.

Included accessories

4 x CC024	Cable BNC/BNC 25 cm.
4 x CC027	Cable BNC/BNC 50 cm.

Minimal configuration needed

1 x DT-800	Power and Control Module.
1 x DT-900	Sub-rack framework to install in a rack or on a wall.

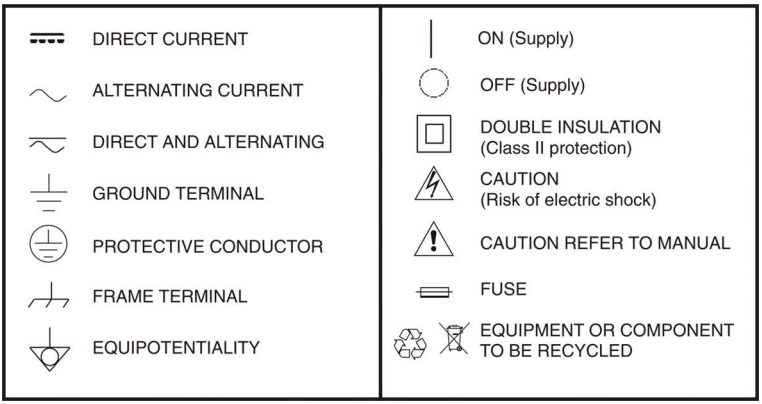
RECOMMENDATIONS ABOUT THE PACKING

It is recommended to keep all the packing material in order to return the equipment, if necessary, to the Technical Service.

2. SAFETY RULES

2.1 General

* **The safety could not be assured if the instructions for use are not closely followed.**
* Use only with other DT series modules and for power supply and Control those indicated at the Specifications.
* Remember that voltages higher than **70 V DC** or **33 V AC rms** are dangerous.
* Use this instrument under the **specified environmental conditions**.
* The user is not allowed to perform changes inside the equipment. Any change on the equipment must be done exclusively by specialized staff.
* Do not obstruct the ventilation system of the equipment.
* Use appropriate low-level radiation cables for input / output signals, especially on high level signals.
* Follow the **cleaning instructions** described in the Maintenance paragraph.
* Symbols related with safety:



2.2 Maintenance

2.2.1 Cleaning Recommendations

CAUTION

To clean the cover, take care the instrument is disconnected.

CAUTION

Do not use scented hydrocarbons or chlorized solvents. Such products may attack the plastics used in the construction of the cover.

The cover should be cleaned by means of a light solution of detergent and water applied with a soft cloth.

Dry thoroughly before using the system again.

CAUTION

Do not use for the cleaning of the front panel and particularly the viewfinders, alcohol or its derivatives, these products can attack the mechanical properties of the materials and diminish their useful time of life.

3. NAVIGATION AND EDITION OF VALUES

3.1 Control Module

The **DT-800** control module configures the **DT-324D** module:

1.- After assembling and connecting, turn on the **DT-800**. After scanning, check that appears the **DT-324D** module on the list on the screen.

2.- Press **ENTER** (ENTER) to get into the **Password** menu and enter the access password (password by default "2008"). If the password is right you will access to the configuration menu.

3.- Use **RIGHT** (▷) or **LEFT** (◁) to move among modules, until finding the **DT-324D**. The LED "**Program**" of the **DT-324D** module should be flickering when the module appears on screen.

4.- Press **ENTER** (ENTER) to get into the configuration option of the **DT-324D**.

For more information, refer to the manual supplied with the **DT-800** control module.

3.2 Navigation through the configuration menu

- Press the **LEFT** (◁) or **RIGHT** (▷) key to move among the menu options.
- To exit a menu option, press the **ENTER** (ENTER) or **DOWN** (▽) key.
- To validate a change and exit, press the **ENTER** (ENTER) key.
- To exit without validating press the **ESCAPE** (ESC) key.

3.3 Editing a numeric field

1.- Press the **ENTER** (ENTER) key to get into a menu option.

2.- Press the **RIGHT** ▷ or **LEFT** ◁ key to move the cursor between digits. At the right of the screen, a number shows in what position the cursor is (units, tens, hundreds or thousands).

3.- To change a digit press the **UP** △ or **DOWN** ▽ key.

4.- After editing the numeric field, press the **ENTER** ENTER key to confirm and exit the option.

WARNING!

To VALIDATE a change you should press the ENTER ENTER ***or UP*** △ ***key. If you press the ESCAPE*** ESC ***key, the change will not be accepted.***

3.4 Editing a text field

1.- Press the **ENTER** ENTER key to get into the menu option.

2.- At the right of the screen, there is a letter and a number. The number means the position of the character in the word you are editing. The letter next to the number means the type of character you are using ("A" for capital letters, "a" for small letters, "@" for symbols and "1" for numbers).

3.- Press the **RIGHT** ▷ or **LEFT** ◁ key to move between characters in the word. To delete a character press the **RIGHT** ▷ or **LEFT** ◁ key for one second.

4.- To change a character, press the **UP** △ or **DOWN** ▽ key. To change the type of character (capital letters, small letters, symbols or numbers) press the **UP** △ or **DOWN** ▽ key for one second.

5.- After editing the word press the **ENTER** ENTER key to validate the word and exit the menu.

4. DT-324D CONFIGURATION

The configuration menu **DT-324D** allows you to configure some parameters that affects the input signal. Menu options for the **DT-324D** module are following ones:

- **Ethernet Config**.
  It allows you to change some module parameters as a host. It contains a sub-menu with some options to define accessing parameters: IP address, mask and gateway. All these fields are numeric.

- **Config SPTS / MPTS**
  It allows the user to select between the operating mode **SPTS** or **MPTS** (read introductory chapter for details) **independently** for each ASI.

- **TS OUT ASI (1 to 4)**
  It allows the user to set various parameters of the Transport Stream - ASI at the module output:
  IP Address: It allows the user to assign an IP output to the selected service.
  Port: Destination port used to send ASI output.
  Protocol: It allows the user to choose between UDP or RTP protocol communication.
  Enable / Disable: It allows enabling / disabling, in any TS-IP, the IP address range assignment to a stream by default.
  TS ID (only for SPTS): Transport Stream Identifier.
  LCN (only for SPTS): Order index for the service in the receiver.
  Service Name (only for SPTS): It allows the user to see the name of the selected service.

- **Firmware Version.**
  It shows information about the firmware version of the module microcontroller.

- **Save**
  It saves all changes made and validated.

- **Factory Settings**
  It resets all changes made and restored the initial settings programmed at the factory.

  Press **ENTER**  to **CONFIRM** that you want to save your changes.

¡ATTENTION!
If you do not save these changes, they will be lost when you turn off the control module!

5. DT-324D STATUS MESSAGES

Status messages appear at the bottom of the screen on the control module **DT-800**.

The status messages related to the **DT-324D** are:

- **ASI x {MPTS / STREAM y}: x.xxx Mbps**
  It indicates the input bitrate for MPTS / STREAM y. This message appears when the module is working right.

- **ASI x: OVERFLOW**
  It indicates that there are too many data in the ASI stream.

- **ASI x: STREAM ERROR**
  It indicates an error in an ASI stream.

- **ASI x {MPTS / STREAM y}: INVALID STREAM**
  It indicates an error in the input stream MPTS / STREAM y.

- **ASI x {MPTS / STREAM y}: NOTHING RECEIVED**
  It indicates that is receiving no MPTS / STREAM y input stream.

- **CONVERSION ERROR: ASI**
  It indicates an error in an IP stream.

- **ETHERNET CONNECTION FAIL**
  It indicates no Ethernet connection.

- **UPDATE FIRMWARE**
  It indicates the need to update the firmware. Contact with your **PROMAX** provider.

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