T.0X

T.0X HDMI ENCODER DUAL IP   REF.563805

TWO MODULES IN ONE

CONTENT IP STREAMER OR IP/AV TO RF MODULATOR

- Two operating modes: AV to IP/RF or IP/AV to RF
- High output signal power without additional amplification
- Configurable output QAM Annex A or B and IP
- Energy efficient due to its low power consumption

HDTV	REMOTE MANAGEMENT	LOW CONSUMPTION	H.264 STANDARD	DOLBY® DIGITAL

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IP ENCODER MODULATOR

DESCRIPTION

An "Encoder / Modulator" is a device that generates a QAM channel which includes Audio / Video services from other devices like cameras, computers, TVSAT receivers, etc.

The Encoder / Modulator ref. 563805 also streams multicast IP.

The device has two operating modes:

AV - IP/RF Encoder

It transforms two Audio / Video signals into an IP stream or into a RF multiplex (QAM Annex A or Annex B). In this mode, the Audio / Video content (input from HDMI or YPbPr with CC* option) is available for a multicast stream in the IP output and also as a RF multiplex (QAM Annex A or B).

AV/IP - RF Encoder

It transforms two Audio / Video signals or IP streaming services into a RF multiplex (QAM Annex A or B). This configuration allows the creation of multiple RF (QAM Annex A or B) with content transmitted through IP multicast and Audio / VIdeo signals (cameras, STB, DVD, computers, etc.) from an HDMI connection, YPbPr or with optional CC*.
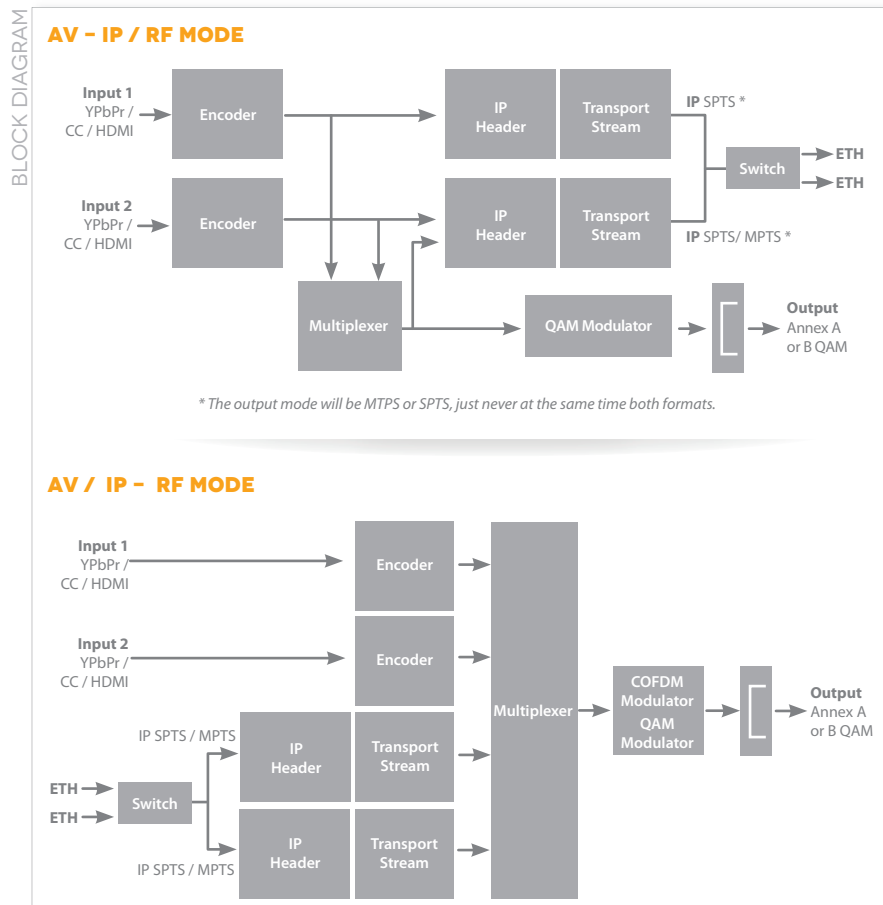
* CC: Closed Caption.

HIGHLIGHTS

■ Easy and intuitive installation thanks to the built-in web server.

■ **High output level with no need for extra amplification**.

■ Multi-standard output format.

■ Monitorisation of the device and the signal through LEDs on the unit.

■ The IP Encoder / Modulator has a MPTS mode (two input connections for the same IP) or **SPTS** (two input connections for two different IP's).
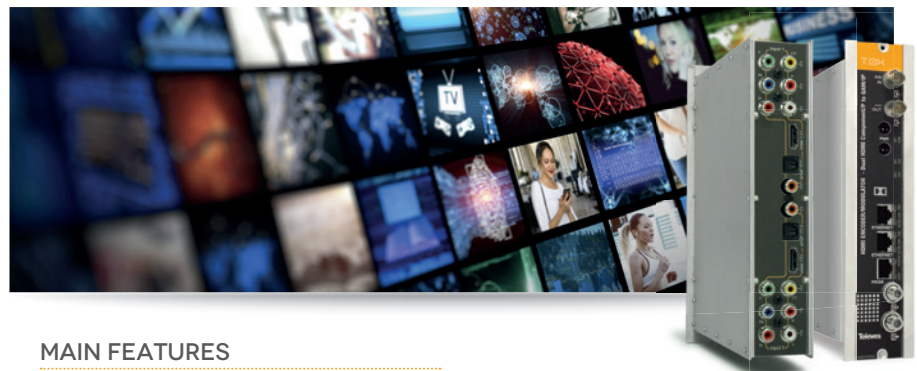
MAIN FEATURES

■ Compatible with many formats, resolutions and TV screen dimensions.

■ Different Audio/Video input types (HDMI, CC, YPbPr, audio SPdIf)

■ Multiplexing 4 sets of services at the same time (2 IP and 2 A/V)

■ Output video format: MPEG-2 or MPEG-4 (H.264)

■ Annex A or B QAM output

■ Integrated input loop through

■ Excellent quality RF signal created (MER > 40dB)

BLOCK DIAGRAM

AV – IP / RF MODE

Input 1 YPbPr / CC / HDMI → Encoder → IP Header → Transport Stream → IP SPTS *
Input 2 YPbPr / CC / HDMI → Encoder → IP Header → Transport Stream → IP SPTS / MPTS *
Switch → ETH / ETH
Multiplexer → QAM Modulator → Output Annex A or B QAM

* The output mode will be MTPS or SPTS, just never at the same time both formats.

AV / IP – RF MODE

Input 1 YPbPr / CC / HDMI → Encoder
Input 2 YPbPr / CC / HDMI → Encoder
ETH / ETH → Switch
IP SPTS / MPTS → IP Header → Transport Stream
IP SPTS / MPTS → IP Header → Transport Stream
Multiplexer → COFDM Modulator QAM Modulator → Output Annex A or B QAM

REF.	DESCRIPTION	EAN 13
563805	T.0X HDMI ENCODER/MODULATOR – DUAL HDMI COMPONENT/IP TO QAM/IP	8424450186220

APPLICATION EXAMPLE

AV / IP – RF MODE

HDMI

STB: TV SAT HD

HDMI

DVD: TV DVD HD

563805

ISP

MULTICAST STREAM:
• Service 1
• Service 2
• Service 3
• Service 4

RF

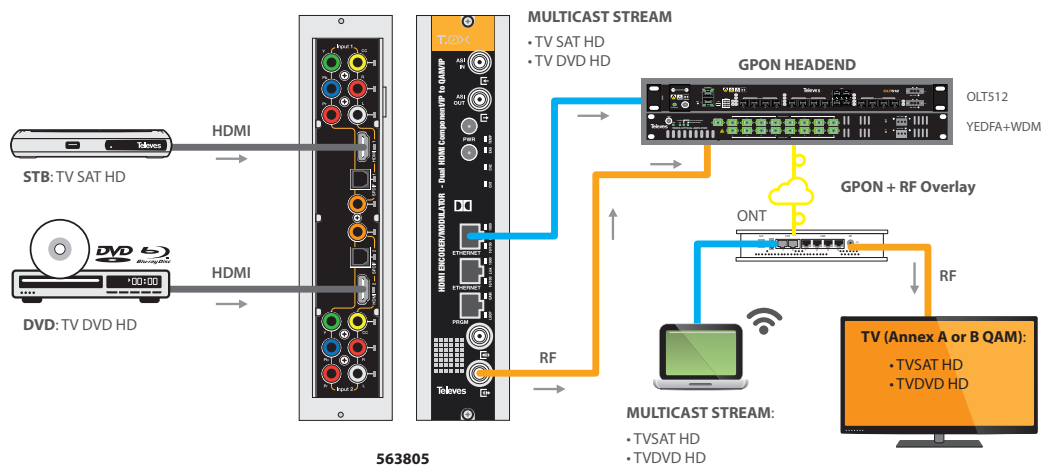**TV (Annex A or B QAM)**:
• TVSAT HD
• TVDVD HD
• Service 2
• Service 4
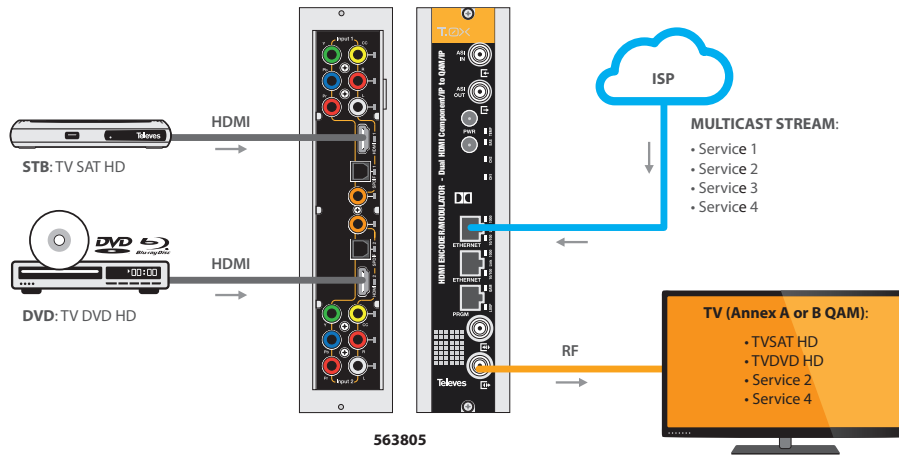
The Encoder / Modulator generates a RF Mux with services transmitted through IP Multicast, supplied by an operator and with A/V signals.

The Mux with all the services is distributed through the coaxial network and is received by the TV's.

In the example, the amount of services in the output RF MUX will vary depending on the modulator's configuration and the capacity available on the MUX.

AV – IP / RF MODE

HDMI

STB: TV SAT HD

HDMI

DVD: TV DVD HD

563805

MULTICAST STREAM
• TV SAT HD
• TV DVD HD

GPON HEADEND

OLT512

YEDFA+WDM

GPON + RF Overlay

ONT

RF

TV (Annex A or B QAM):
• TVSAT HD
• TVDVD HD

MULTICAST STREAM:
• TVSAT HD
• TVDVD HD

The Encoder / Modulator generates a RF Mux and a Multicast stream with A/V signals.

The multicast stream with A/V services are distributed through the data network and they are recceived in devices and specific applications.

The RF Mux is received by the TV's with the same content.

This application is recommended in FibreData solutions which need an optimisation of the RF Overlay bandwidth (reallocation of A/V services between the data network and the TV network).

IP ENCODER MODULATOR

INPUTS			
Video	Connectors		2 sets - 3x RCA for Video (Y, Pb, Pr)
Audio	Connectors		2 sets - 2x RCA for Analog Audio (L, R)
			2 sets - 1x RCA for Digital Audio
			2 sets - 1x Toslink for Digital Audio (Optical)
Video + Audio	Connectors		2 sets - 1xHDMI
Closed Captioning	Connectors		2 sets - 1x RCA (CC in)
ASI	Connectors		1x BNC
	Format		DVB-ASI
	Standard		ETSI EN 50083-9
IP	Connectors		2x RJ45 (Switch Gigabit)
	Formats		SPTS or MPTS (UDP/RTP)

ENCODING PROFILE			
Video	Output Format		MPEG-2 / H.264(4.0, 4.1, 4.2, 5.1, 5.2)
	Input Resolution		480i, 480p, 576i, 576p, 720p, 1080i &1080p Supports auto-scan for input resolution [1]
	Input Framerate		50Hz, 60Hz (all input Resolutions), 24Hz (only 1080p Input Resolution)
	Output Resolution		Same as input (Auto) or maximum selected output resolution
	Output Aspect Ratio		4:3, 16:9, and pass through
	Output GOP		10, 12, 15, 16, 18, 20, 24 or 30
Audio	Output format		Dolby® Digital AC-3 or MPEG1 Layer 2
	Output Sampling rate	kHz	48, 44.1
	Output bitrate		Variable
Closed Captioning	Format		EIA-608, EIA-708

OUTPUT			
QAM	Connectors		1x "F" Female
	Modulation standards		ITU-A: 16, 32, 64, 128, 256, 512, 1024 QAM
			ITU-B: 64, 256 QAM
	Frecuency Range	MHz	5 - 1002 (supports return path applications)
	Channel plans		CATV STD, T_CHANNELS, Broadcast, Frequency
	Max output level	dBmV	+55 (+43 with loop-through)
	MER	dB	>40 (typ)
	Spurious	dBc	-60
ASI	Connectors		1x BNC
	Format		DVB-ASI
IP	Connectors		2x RJ45 (Switch Gigabit)
	Format		SPTS or MPTS (UDP/RTP)

PSI PARAMETERS		
Transport Stream ID		Editable
Original Network ID		Editable
Network ID		Editable
Virtual Channel Number		Editable
NIT Version		Manual / Automatic
SDT Version		Manual / Automatic
Network Name		Editable
Service PID		Editable
Service Name		Editable
Service ID		Editable

GENERAL		
Power supply	Vdc	24
Power disipation	W	<20.4
Operating Temperature	ºF / ºC	32 to 95 / 0 to 35

[1] *The output resolution is the same as the input signal source.*

FRONT VIEW

1. ASI input
2. ASI output
3. Power connectors
4. Ethernet connector
5. Ethernet connector
6. Programmer connector
7. RF loop through input
8. RF output

REAR VIEW

1. YPbPr component input. Channel 1
2. Closed Caption (CC) input. Channel 1
3. Analog (L/R) audio input. Channel 1
4. HDMI input. Channel 1
5. SPDIF digital optical audio input. Channel 1
6. SPDIF digital coaxial audio input. Channel 1
7. SPDIF digital coaxial audio input. Channel 2
8. SPDIF digital optical audio input. Channel 2
9. HDMI input. Channel 2
10. YPbPr component input. Channel 2
11. Closed Caption (CC) input. Channel 2
12. Analog (L/R) audio input. Channel 2

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