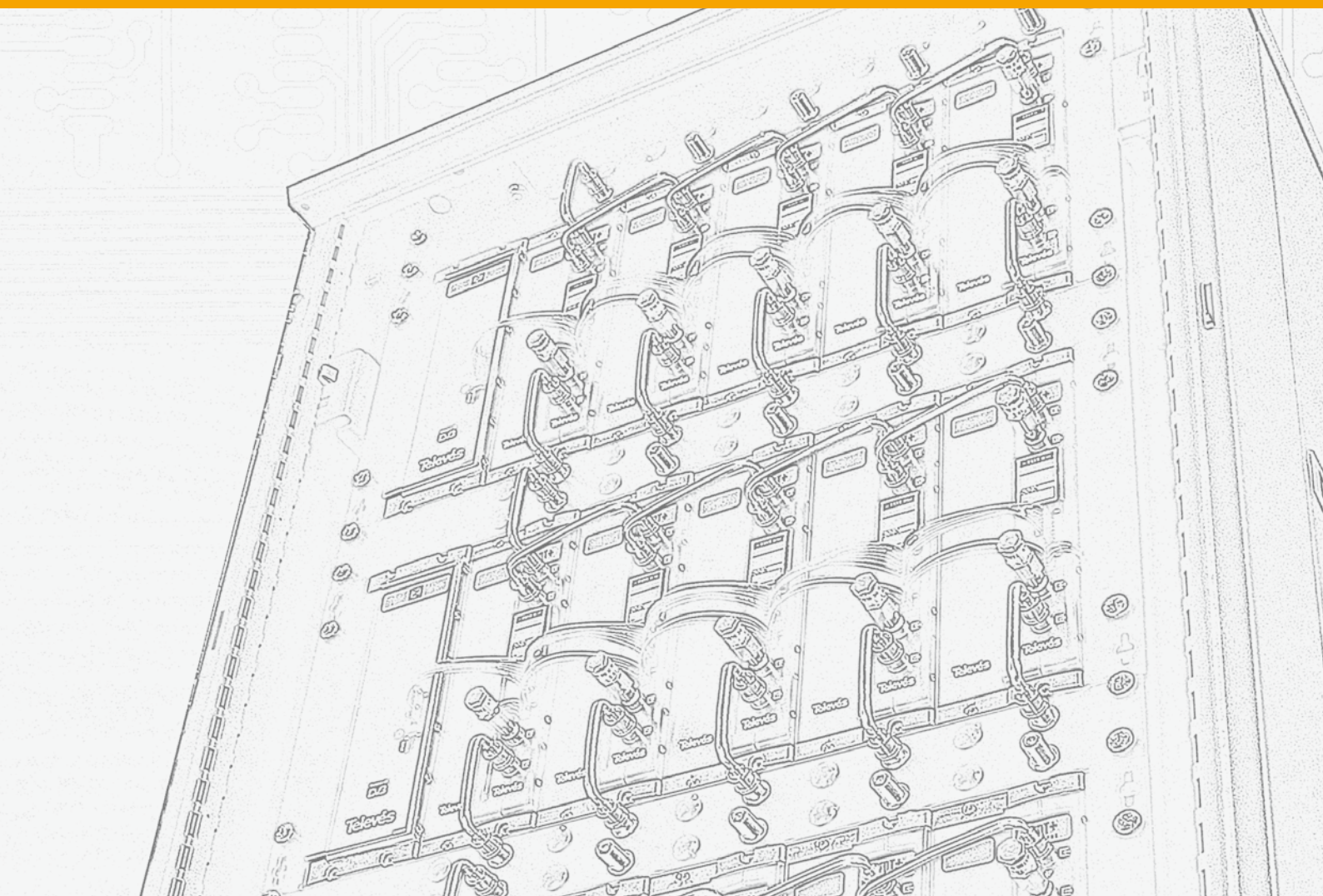
Televes

T05
HEADENDS



IF/IF Processors (single/triple)

QR-00201

These IF processors can pick one (ref. 586301) or up to 3 satellite transponders (ref. 586401) in the IF band, process them and shift them in frequency within the same band.

- **High input dynamic margin.**
- **Configurable parameters.**
- **CDC and TSuite compatible.**

▲ 586301

REF.	DESCRIPTION
586301	IF/IF Single satellite processor (1 transponder)
586401	IF/IF Triple satellite processor (3 transponders)

	CONNECTIONS
1	IF satellite input
2	IF satellite output
3	Connector for programmer or PC with TSuite SW
4	Power supply BUS connection
5	ON/OFF LED
6	Control BUS
7	Processed IF input
8	Processed IF output

Reference	586301 and 586401					586301	586401
SATELLITE Input	Input frequency ○	MHz	950 ··· 2150	Input loop through losses	dB	< 1,5	
	Frequency steps		<1,5	Typ. Return losses		> 10	
	Input level	dB	60 to 89	Impedance	ohm	75	
	Bandwidth input filter ○	MHz	10 ··· 72 (in 2 MHz steps)				
RF Output	Output frequency ○	MHz	950 ··· 2150	Through losses	dB	< 1,5	
	Frequency steps		<1,5	Typ. Return losses		> 10	
	Output level ○	dB	80 ± 5 (programmable)	Impedance	ohm	75	
	Output level attenuation ○	dB	> 15				
General	LNB powering ○	Vdc	13V/17V/ OFF - 22KHz (ON/OFF)	Max. consumption	mA	550 (5V) 50 (15V) 350* (18V)	1100 (5V) 50 (15V) 350* (18V)
	Powering	Vdc	5/15/18				
	Dimensions (W x H x D)	mm	50 x 197 x 163	Operating temperature	ºC	0 ··· +40	
				Protection Index		IP20	

(*) Maximum available current to power a LNB; Note: Remotely configurable with the CDC from version 2.12 or later; ○: Programmable

ASI - COFDM Transmodulator

QR-A00063

The ASI to COFDM transmodulator takes a TS-ASI signal (according to the EN 50083-9 standard) to convert it into COFDM format and subsequently to the preferred output channel (UHF or VHF and with a maximum bandwidth of 8 MHz) by means of an agile up-converter.

- **Low phase noise.**
- **Configurable parameters.**

▲ 5540

REF.	DESCRIPTION
5540	ASI-COFDM Transmodulator (47...862MHz)

	CONNECTIONS
1	ASI input
2	N/A
3	Connector for programmer or PC with TSuite SW
4	Power supply BUS connection
5	ON/OFF LED
6	Control BUS (by-pass only)
7	RF Input
8	RF Output + 1 COFDM channel

Reference	5540						
ASI Input	In accordance with EN 50083-9 standard						
COFDM Modulator	Modulation format			QPSK, 16QAM, 64QAM	Scrambling		DVB EN 300744
	Guard interval			1/4, 1/8, 1/16, 1/32	Interleaving		DVB EN 300744
	FEC			1/2, 2/3, 3/4, 5/6, 7/8	Cell_id ❍		Selectable
	Bandwidth		MHz	7/8	Spectral invertion ❍		normal/inverted
UP- Converter	Output frequency ❍	VHF	MHz	177,5 ··· 226,5	Adjustable output level	dB	15
		UHF		474 ··· 858	Typ. Through losses		< 1,5
	Frequency steps ❍		KHz	125 / 166,66	Input/Output connectors	type	F female
	Typ. Phase noise.		dBc/Hz	90 (10KHz)	Impedance	ohm	75
	Output level ❍		dBµV	65 ··· 85			
General	Consumption		mA	360 (5Vdc); 160 (15Vdc)	Protection index		IP20
					Dimensions (W x H x D)	mm	50 x 197 x 163

Note: Specifications valid for a maximum room temperature of 40ºC; ❍: Programmable

DIGISlot Series: Modulator + Encoders

QR-A00127

These units can generate one or two (Twin version) COFDM Multiplex from two types of signal sources: A/V, S-VIDEO, RGB and/or HDMI.

The following configurations for the inputs are possible (maximum 2 modules):

- Module for the addition of 1 A/V source (Ref.554801).
- Module for the addition of 2 A/V sources (Ref.554812).
- Module for the addition of 1 HDMI source (Ref.554813).
- Module for the addition of 2 HDMI sources (Ref.554804).

Depending on the type of installation to be done:

- Installation on the wall: Ref. 554511/554502.
- Installation in 19" rack: Ref. 554611/554610/554602.

This device could be used to distribute DTT programmes (HD or SD) in a coaxial network, overcoming typical distance limitations for A/V or HDMI signals.

- **DVB (COFDM) output.**
- **High quality modulation MER>42dB.**
- Processing and insertion of PSI/SI tables.
- **LCN** (Logical Channel Number).
- **IP output**.
- **Web server**/ Configurable from front panel.
- **Twin version (ref. 554502 / 554602):** the modulator can generate two output multiplex/channels using signals coming from two slot-in encoders. Input signals of the same encoder can be generated into different output channels.

▲ 554511

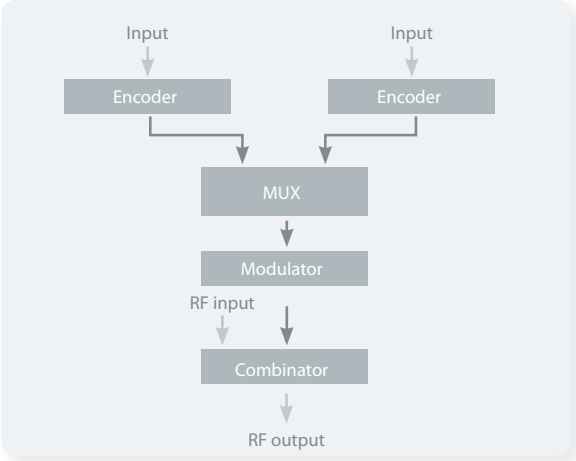
▲ 554611

	Modulators			
	1 MUX		2 MUX (TWIN)	
Encoders	554511	554611 / 564610	554502	554602
554801 - 1 A/V	✓	✓	✓	✓
554812 - 2 A/V	✓	✓	✓	✓
554813 - 1 HDMI	✓	✓	✓	✓
554804 - 2 HDMI	✓ *3 HD inputs max.*		✓	✓

Reference			554511 554502	554611 554602	554610
DVB-T	Standard		EN300744		ARIB STD-B31
	FFT modes		2K, 8K		
	Bandwidth	MHz	6, 7 and 8		6
	Constellation		QPSK, 16QAM, 64QAM		
	Guard interval	µS	1/4, 1/8, 1/16, 1/32		
	FEC		1/2, 2/3, 3/4, 5/6, 7/8		
	MER	dB	≥ 42		
	Frequency range	MHz	30 ...960		
	Output level	dBµV	81...97		
General	Mains voltage	Vac	220 ± 10%		100...240
	Power consumption	W	25		
	Dimensions (W x H x D)	mm	360x280x50	480x44x300	

REF.	DESCRIPTION
554511	COFDM modulator wall mount
554502	TWIN COFDM modulator wall mount
554611	COFDM modulator 19" rack mount
554610	ISDB-T/Tb modulator 19" rack mount
554602	TWIN COFDM modulator 19" rack mount
554801	1 input A/V CVBS - MPEG2 encoder
554812	2 inputs A/V YPbPr / S-Video / CVBS - MPEG2 encoder
554813	1 input HDMI - MPEG2/4 encoder
554804	2 inputs HDMI - MPEG4 encoder

BLOCK DIAGRAM



DIGISlot Series: Modulator + Encoders

▲ 554602

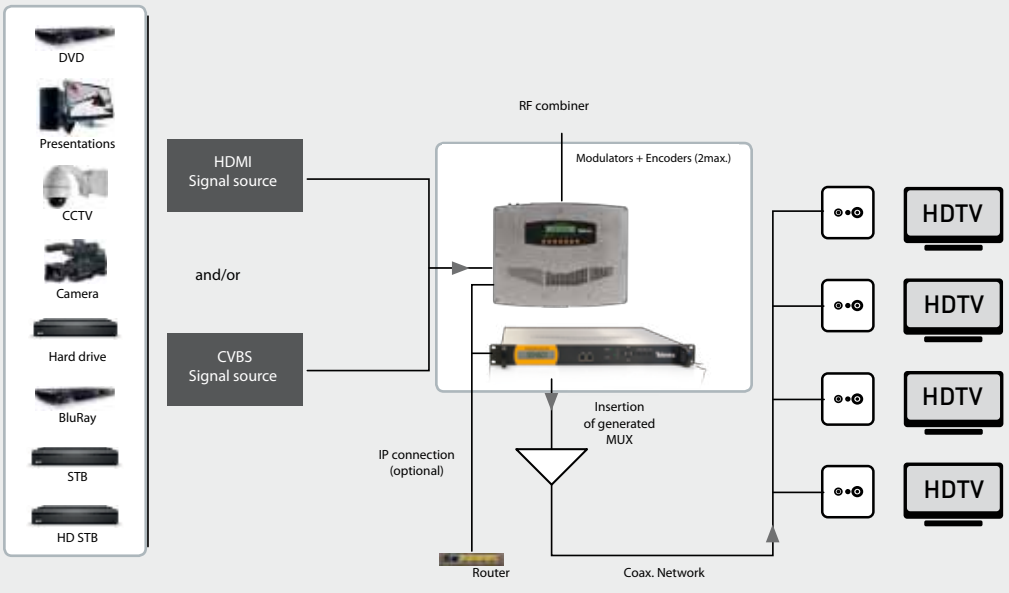
▲ 554801 ▲ 554801

▲ 554502

▲ 554813 ▲ 554804

▲ 554813

Reference			554801	554812	554813	554804
Video	Encoder		MPEG-2 MP@ML (4:2:0)		H.264/AVC High Profile Level 4.0 (HD)	
	Input sources		CVBS x 2	(CVBS / YPbPr / S-Video) x2	HDMI x 2 (1 active and the other backup)	HDMI x 2 (2 actives)
	Resolution		720 x 576 (PAL), 720 x 480 (NTSC)		1920x1080_60i, 1920x1080_50i, 1280x720_50p 1920x1080_60p, 1920x1080_50p	
Audio	Encoder		MPEG1 Layer II			
	Input sourcees		Stereo audio x 2	Stereo audio x 4	HDMI x 2	
	Sampling frequency	KHz	48			
	Binary rate	Kbps	128			



DIGIMod Series: Domestic Encoder/ Modulator

QR-A00268

554901 encoder & modulator (home use) is a consumer product which allows audio/video signal input in TV distributions with applications in home entertainment, surveillance control, hotel digital signage, shops etc.

- It is an all-in-one device integrating MPEG2 encoding and DVB-T modulating to convert video signals to DVB-T RF out for distribution network.
- The signals source could be from satellite receivers, closed-circuit TV, cameras, Blue-ray players, and antenna etc.
- Its output signal is to be received by a DVB-T standard TV, DVB-T STB etc.

▲ 554901

REF.	DESCRIPTION
554901	Encoder / Modulator DVB-T wall mount 1 input A/V CVBS - MPEG2

▲ 554901

Reference			554901
Encoding Section			
Video	Encoding		MPEG-2 MP@ML(4:2:0)
	Interface		CVBS *1
	Resolution		720x576_50i (PAL) 720x480_60i (NTSC)
	Bit rate	Mbps	1.000~19.500
Audio	Encoding		MPEG1 Layer II
	Interface		1*Stereo /mono
	Sample rate	KHz	48
	Bit rate	kbps	64, 96, 128, 192, 256, 320, 384
Modulator Section			
Standard			DVB-T COFDM
Bandwidth		MHz	6, 7, 8
Constellation			QPSK, 16QAM, 64QAM,
Code rate			1/2, 2/3, 3/4, 5/6, 7/8.
Intervalo de guarda		µS	1/32, 1/16, 1/8, 1/4.
Transmission Mode			2K, 8K
MER		dB	≥42
Transmission Mode:		MHz	30~999, step 1KHz
RF output level		dBm	-16~ -36 (81~97 dbµV), step 0.1dB
General			
Mains		Vdc	12
Dimensions (W x H x D)		mm	140 x 110 x 43
Weight		kg	< 1
Operation temperature		ºC	0 ... 45

Amplifiers

QR-A00072

- **Low second and third order distortion** that allows high output level (typical values of 120dBµV).
- **Include two inputs**, which allows the amplifier to combine channels from two different sources (two different headends).
- The ref. 5075 incorporates a **test output.**

▲ 5865

▲ 5075

REF.	DESCRIPTION
5865	IF Amplifier (SAT) (950...2150 MHz)
5075	MATV Amplifier (47...862 MHz)

	CONNECTIONS
1	RF Output
2	TEST Output (-30 dB)
3	Power supply BUS connection
4	Attenuator
5	ON/OFF LED
6	RF Input 1
7	RF Input 2

Reference			5865
IF amplifier	Frequency range	MHz	950...2150
	Gain	dB	35 ◢ 40
	Max. Output level	dBµV	123
	Typ. IF through losses	dB	< 1
	Typ. IF return losses FI I/O	dB	10
MATV through	Frequency range	MHz	47...862
	Through losses	dB	1.5
	Typ. Return losses		> 7.5
General	Powering	Vdc	15
	Consumption	mA	200
	Protection index		IP20
	Dimensions (W x H x D)	mm	50 x 197 x 163

Reference			5075
Frequency range		MHz	46...862
Gain		dB	45 ± 2
Output level attenuation		dB	0 - 20
Output level	DIN45004B	dBµV	120
	IMD3 (-60dB, 2CH)		117
	IMD2 (-60dB, 2CH)		111
	CTB (-60dB, 42CH)		105
	CSO(-60dB, 42CH)		105
	XMOD(-60dB, 42CH)		105
Noise figure		dB	< 10
Powering		Vdc	15
Consumption		mA	810
Protection index			IP20
Dimensions (W x H x D)		mm	50 x 197 x 163

POWER SUPPLY UNIT, HEADEND MANAGER

Power supply unit

QR-A00117

Switched mode power supply with high performance.

Reference		502905			
Mains voltage	Vac	230 ± 15%			
Mains frequency	Hz	50/60			
Maximum power consumption	W	134			
Output voltages	Vdc	5	15	18	24
Maximum current	A	6,6	4,2*	0,8	0,55
Maximum available power	W	33	63*	14,4	13,2
Protection index		IP20			

(*): When the 24 and 18 Vdc voltages are being used, it will become necessary to deduct the power being used from the 63W available at 15 Vdc.

▲ 502905

REF.	DESCRIPTION
502905	T05 Switched mode power supply

	CONNECTIONS
1	Output connector with three voltages (5,15, 18 Vdc)
2	ON/OFF LED
3	24Vdc output connector
4	Mains connector (196-264 Vac)

CDC headend manager

QR-A00046

The CDC headend manager allows the remote management of a T05 headend or AVANT HD, it can either be done via an external modem or a locally plugged in PC.

The purpose of the headend manager:

- **Allow to configure and monitor any of the controllable devices in the headend from one point with a SW compatible with** Windows.

The CDC system will allow you to, amongst other things, the following:

- **Monitor and/or configure remotely** any of the settings in the headend.
- **Upload of a new configuration** with the press of a button, avoiding the configuration of the modules one by one.

▲ 5059

REF.	DESCRIPTION
5059	CDC Headend manager

	CONNECTIONS
1	Dial-up modem connection
2	IP/PC modem connection
3	Power supply BUS connection
4	Status LED (ON/OFF/Quick-Slow flashing)
5	Control BUS

GSM modem for the CDC (Ref. 5059)

QR-A00069

When connected to the module CDC will allow the management of the headends via **GSM/GPRS**.

▲ 5836

Frequency bands				
Mode	Tx, Freq (MHz)	Rx, Freq (MHz)	Channels (ARFC)	Tx-Rx offset (MHz)
E-GSM-900	890,0-914,8	935,0-959,8	0-124	45
	880,2-889,8	925,2-934,8	975-1023	45
GSM-850	824,2-848,8	969,2-893,8	128-251	45
DCS-1800	1710,2-1784,8	1805,2-1879,8	512-885	95
PCS-1900	1850,2-1909,8	1930,2-1989,8	512-810	80

REF.	DESCRIPTION
5836	GSM modem for the CDC headend manager

	CONNECTIONS
1	SIM slot
2	Serial port communications connector (Tx/Rx) for the communication with the CDC (ref. 5059)
3	Power supply BUS connection
4	PWR and STATUS LEDs
5	GSM antenna

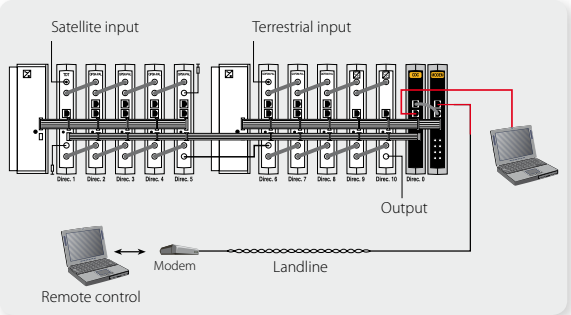
Reference				5836
GSM radio interface	Transmission power	GSM 850/9000	dBm	33
		DCS 1800/PCS 1900		30
	Sensitivity reference	GSM 850/900		- 107
		DCS 1800/PCS 1900		- 106
	GSM antenna	Potencia de entrada	W	> 2 (pico)
		ROE absoluto		≤ 10:1
		ROE recomendado		≤ 2:1
		Ganancia (ref. dipolo λ/2)	dBi	1,5 ··· 3
		Impedancia	ohm	50
	Bandwidth	EGSM	MHz	80
		GSM		150
		DCS		170
		PCS		140
Serial interface	Standard AT commands	Set of AT Hayes standard commands. ETSI GSM 07.07 specification for AT commands and specific GPRS commands. GSM 07.05 specification of AT commands for SMS and CBS (Cell Broadcast Service). Commands compatible with FAX Class 1.		
	Maximum baud rate (UART RS232 TX/RX)			CMOS levels; 115,2 Kbps
General	Power requirements		W	1,65 W (330 mA @ 5V) with active call 0,25 W (50 mA @ 5V) with the modem registered in the GSM network in standby waiting for a call
	Operating temperature (max.)		ºC	45
	Protection index			IP20
	Dimensions (W x H x D)		mm	50 x 197 x 163

REMOTE CONTROL, PROGRAMMER

IP modem for the CDC (Ref. 5059)

QR-A00070

When connected to the CDC module will allow the management of the headends via **IP.**



▲ 5837

REF.	DESCRIPTION
5837	IP modem for the CDC module

	CONNECTIONS
1	Ethernet
2	CDC connection
3	Power supply BUS connection

Reference			5837
Serial interface	Serial interface		RS232 (TX/RX) levels
	Serial port characteristics		Range 150-115200bps; Parity: None, even, odd 7 or 8 bits/byte
Routing buffers	Size		12 Kbytes × 2
EM202-00 module	Ethernet interface		10/100 Base T Ethernet, standard magnetics
	Serial interface and IN/OUT lines		CMOS-level; TX, RX, and 4 additional lines I/O with RTS,CTS,DTR and DSR implemented
	Size of the routing buffers		12 Kbytes × 2
	Max. current for IN/OUT lines	mA	10
	Current consumption (5 Vdc)		230 (in 100Base T mode)
	Opertating temperature	ºC	-10 ··· +70
Connectors	CDC interface	type	RJ45 connector (RS232, TX/RX)
	Ethernet interface		RJ45 Ethernet 10/100 BaseT
General	Max. Consumption	W	2,5
	Operating temperature	ºC	45
	Protection index		IP20
	Dimensions	mm	50 × 197 × 163

Universal programmer

QR-A00080

Programmer to allow the configuration and setting of the programmable modules (T.0X, T05, Avant...).

- **Built-in memory for the storage, upload and cloning of configurations.**
- **Adjustment of the brightness of the display** in order to suit the light conditions in the installation.
- **Easy to use and intuitive.**
- **Includes** 1m cable lead with 2 RJ45 connectors.

▲ 7234

REF.	DESCRIPTION
7234	Universal programmer

SOFTWARE, SUPORTS AND ENCLOSURES

TSuite software

QR-A00150

Software that allows the configuration and setting of any of the programmable units (except for the Avant 3).

Includes:

- **TSuite software.**
- **Cable for the connection of the** PC to the CDC unit (RS232 - RJ45).
- USB - COM (RS232) adaptor (ref. 5838)
- USB extender.

▲ 216801

REF.	DESCRIPTION
216801	TSuite software

Supports and enclosures

QR-A00142

Mounting accessories to allow the installation of T05 modules on the wall and inside cabinets or racks.

REF.	DESCRIPTION
5071	Wall mount 498 mm (1 PSU + 10 T05/T12)
5239	Wall mount 560 mm (1 PSU + 12 T05 /T12)
5301	19" rack frame 5U (1 PSU + 10 T05 /T12)
5072	Lockable cabinet 498 mm (1 PSU + 10 T05 /T12) Dimensions (W x H x D): 610 x 295 x 235
507202	Lockable cabinet with forced ventilation 498 mm (1 PSU+10 T05 /T12) Dimensions (W x H x D): 610 x 295 x 235
5069	Lockable cabinet 648 mm (1 PSU + 14 T05 /T12) Dimensions (W x H x D): 760 x 295 x 235
506901	Lockable cabinet 648 mm (2 PSU + 10 T05 /T12) Dimensions (W x H x D): 760 x 295 x 235
5334	Ventilation Unit for ref. 5069 and 506901
5235	Lockable cabinet 948 mm (1 PSU + 22 T05 /T12) Dimensions (W x H x D): 1060 x 295 x 235
5333	19" rack 15U, door, ventilation and wheels Dimensions (W x H x D): 540 x 740 x 400
5331	19" rack 28U, door, ventilation and wheels Dimensions (W x H x D): 600 x 1400 x 600
5332	19" rack 37U, door, ventilation and wheels Dimensions (W x H x D): 600 x 1800 x 600
507312	T12/T05 Blank plate 35mm-5U

The number of modules indicated it is exclusively based on the available space; but the number of modules that can be installed could be limited by other factors like power consumption or operating temperature.

▲ 5331/5332/5333

▲ 5334

▲ 5334

▲ 5069/506901/5072

▲ 5071/5239

▲ 5301

Accessories

QR-A00045

REF.	DESCRIPTION
5073	T03/T05 Blank plate 35mm-5U
507312	T12/T05 Blank plate 35mm-5U
4061	F terminal load with DC block
4071	DC F block
9924	3 RCA – RJ45 1.5m cable lead
4947	Coaxial atmospheric surge arrestor
422601	Patch cable powering T.0X → T12/T05/T03 or T12/T05/T03→ T.0X
422602	Patch cable control BUS T.0X → T05 or T05 → T.0X; 1 m

▲ 5073

▲ 507312

▲ 4061

▲ 4071

▲ 4947

▲ 422601

▲ 422602

Ref. 586301/586401/5865/5059

IF/IF single and triple processors

▶ **Processing of** 15 satellite transponders to new frequencies, in order to have all of them in one polarity. Afterwards, the output is amplified with ref.5865 (IF amplifier).