



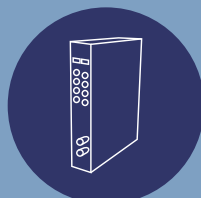
EKSELANS BY ITS

CM HEADEND 2022

FLEXIBLE AND
INTELLIGENT
MODULATION



ENTER THE EK WORLD



COMPACT RANGE



SATELLITE INPUT - PROGRAMMABLE DVB-T / DVB-C OUTPUT

REFERENCE	CM COMPACT 8S4	
Code	085001	
Input		
Number of tuners	8	
Input connectors	4	
Input frequency	MHz	950 - 2150
Input level	dB μ V	40 - 79
Channel bandwidth	MHz	36
Symbol rate	MSps	1 - 45
Modulation type	QPSK / 8PSK / 16APSK / 32APSK	
LNB power supply	V / KHz	13/18 - 0/22 (400mA max.)
DiSEqC	A / B / C / D	
Output		
Number of outputs	1	
MIX Port	dB	<1,5
Output frequencies	MHz	170 - 862
Maximum output level	dB μ V	95
Output regulation	dB	20
DVB-T Modulation		
Number of channels	4 adjacents	
Output frequency	MHz	170 - 862
Constellation - Mode	QPSK, 16QAM, 64QAM - 2K	
FEC	1/2, 2/3, 3/4, 5/6, 7/8	
Guard Interval	1/4, 1/8, 1/16, 1/32	
MER	dB	>35
DVB-C Modulation		
Number of channels	4 adjacents	
Output frequency	MHz	50 - 862
Constellation	16, 32, 64, 128, 256QAM	
Symbol rate	Mbps	4 ... 6,96
MER	dB	>40
GENERAL		
Local Programming	Cable USB (included)	
Power supply	Vdc	5 (power supply included)
Consumption (Without LNB)	mA	1800
LNB consumption	mA	250 a 13V
Operating temperature	°C	0 - 40
Dimensions (including connectors)	mm	160 x 55 x 200

CM COMPACT 8S4

NEW

- OCTO module with 4 satellite inputs and 8 tuners (DVB-S / S2 / S2X). Supports multistream
- Independent control of each tuner 13V/18V – 22 KHz – DiSEqC (A/B/C/D)
- Flexible service remultiplexing on each output MUX
- NIT tables editing, SID remapping, sending or deleting EMM messages and CAT tables
- Output of up to 4 channels (CM COMPACT 8S4) or 8 channels in 2 groups of 4+4 (CM COMPACT 8S8)
- COFDM / QAM programmable output
- High output level
- Excellent quality output signal. High MER
- LCN / LCN HD Insertion
- Programming through "CM Management" PC software
- Power supply and USB-USB cable included



CH3 COMPACT

NEW

- 3-unit wall chassis COMPACT series

SATELLITE INPUT - PROGRAMMABLE DVB-T / DVB-C OUTPUT

CM COMPACT 8S8

NEW

- OCTO module with 4 satellite inputs and 8 tuners (DVB-S / S2 / S2X). Supports multistream
- Independent control of each tuner 13V/18V – 22 KHz – DiSEqC (A/B/C/D)
- Flexible service remultiplexing on each output MUX
- NIT tables editing, SID remapping, sending or deleting EMM messages and CAT tables
- Output of up to 4 channels (CM COMPACT 8S4) or 8 channels in 2 groups of 4+4 (CM COMPACT 8S8)
- COFDM / QAM programmable output
- High output level
- Excellent quality output signal. High MER
- LCN / LCN HD Insertion
- Programming through "CM Management" PC software
- Power supply and USB-USB cable included



CM COMPACT
8S8



CH3
COMPACT

REFERENCE		CM COMPACT 8S8
Code		085002
Input		
Number of tuners		8
Input connectors		4
Input frequency	MHz	950 - 2150
Input level	dBμV	40 - 79
Channel bandwidth	MHz	36
Symbol rate	MSps	1 - 45
Modulation type		QPSK / 8PSK / 16APSK / 32APSK
LNB power supply	V / KHz	13/18 - 0/22 (400mA max.)
DiSEqC		A / B / C / D
Output		
Number of outputs		1
MIX Port	dB	<1.5
Output frequencies	MHz	170 - 862
Maximum output level	dBμV	95
Output regulation	dB	20
DVB-T Modulation		
Number of channels		8 (4+4 adjacents)
Output frequency	MHz	170 - 862
Constellation - Mode		QPSK, 16QAM, 64QAM - 2K
FEC		1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval		1/4, 1/8, 1/16, 1/32
MER	dB	>35
DVB-C Modulation		
Number of channels		8 in two adjacent 4 + 4 groups
Output frequency	MHz	50 - 862
Constellation		16, 32, 64, 128, 256QAM
Symbol rate	Mbps	4 ... 6.96
MER	dB	>40
GENERAL		
Local Programming		Cable USB (included)
Power supply	Vdc	5 (power supply included)
Consumption (Without LNB)	mA	2300
LNB consumption	mA	250 a 13V
Operating temperature	°C	0 - 40
Dimensions (including connectors)	mm	160 x 55 x 200

CM RANGE

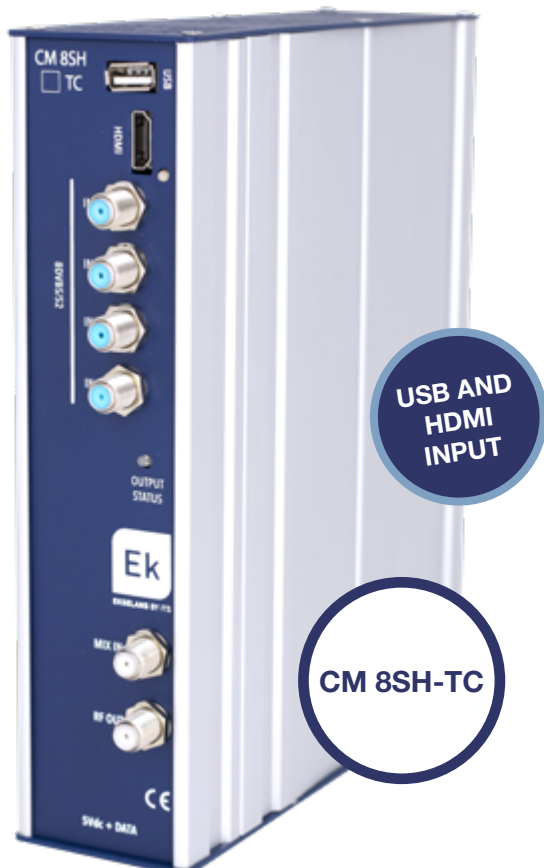


SATELLITE + HDMI INPUT FLEXIBLE DVB-T / DVB-C OUTPUT

CM 8SH-TC

NEW

- OCTO module with 4 SAT inputs and 8 tuners
- 1 HDMI input
- 1 USB 2.0 input
- Independent control of each input 13 / 18V - 22KHz - DiSEqC (A / B / C / D)
- Flexible remultiplexing of services on any output channel
- NIT tables editing, SID remapping, sending or deleting EMM messages and CAT tables
- Flexible QAM / COFDM output
- Output of up to 4 channels COFDM / 4 flexible QAM channels
- High output level
- Excellent output signal quality with a high MER
- LCN / LCN HD insert
- Programming through "CM Management" PC software
- Configuration cloning, Status and configuration report
- On-site management (FA 510 / CM PR) or remote (FA 524)



REFERENCE		CM 8SH-TC
Code		082255
INPUT		
Number of inputs		4x RF + 1x HDMI + 1x USB
RF INPUT		
Number of tuners		8
Input frequency	MHz	950 - 2150
Input level	dBμV	40 - 79
Symbol rate	Mbps	1 - 45
Modulation type		QPSK / 8PSK / 16APSK / 32APSK
LNB power supply	V / KHz	13/18 - 0/22
DiSEqC		A / B / C / D
USB		
Priority		1
Version		2.0
File System		FAT32 / NTFS
Reproduction		Autoplay, List, Time schedule
File format		.TS (Transport Stream)
HDMI		
Priority		2
Video / Bitrate	- / Mbps	H.264 / 5 - 15
Audio / Bitrate	- / Kbps	AAC-LC, MPEG1-L2 / 128 - 384
Max resolution		1080p
OUTPUT		
Number of outputs		1
Mixing port	dB	<1.5
Output frequencies	MHz	170 - 862
Maximum output level	dBμV	95
Output regulation	dB	20
DVB-T modulation		
Number of channels		4 flexible
Output frequency	MHz	170 - 230 / 470 - 862
Constellation - Mode		QPSK, 16QAM, 64QAM - 2K
Bandwidth	MHz	7 or 8
FEC		1/2, 2/3, 3/4, 5/6, 7/8
Guard interval		1/4, 1/8, 1/16, 1/32
MER	dB	>32
DVB-C modulation		
Number of channels		4 flexible
Output frequency	MHz	170 - 230 / 470 - 862
Constellation		16, 32, 64, 128, 256QAM
Bandwidth	MHz	7 y 8
Symbol rate	MSps	4 - 6.96
MER	dB	>32
GENERAL		
Local programming		By USB / RJ45 cable (LAN) with FA 524 or CM PR
Remote programming		By RJ45 (Internet) (CM Key)
Power supply	Vdc	5
Consumption (No LNB, no USB, no CAM, no HDMI)	mA	4100
Operating temperature	°C	0 - 40

SATELLITE + HDMI INPUT FLEXIBLE DVB-T / DVB-C OUTPUT

REFERENCE		CM 8SH CI-TC
Code		082256
INPUT		
Number of inputs		4x RF + 1x HDMI + 1x USB
Number of tuners		8
Input frequency	MHz	950 - 2150
Input level	dBμV	40 - 79
Symbol rate	Mbps	1 - 45
Modulation type		QPSK / 8PSK / 16APSK / 32APSK
LNB power supply	V / KHz	13/18 - 0/22
Common interface		2 x CI
DiSEqC		A / B / C / D
USB		
Priority		1
Version		2.0
File System		FAT32 / NTFS
Reproduction		Autoplay, List, Time schedule
File format		.TS (Transport Stream)
HDMI		
Priority		2
Video / Bitrate	- / Mbps	H.264 / 5 - 15
Audio / Bitrate	- / Kbps	AAC-LC, MPEG1-L2 / 128 - 384
Max resolution		1080p
OUTPUT		
Number of outputs		1
Mixing port	dB	<1.5
Output frequencies	MHz	170 - 862
Maximum output level	dBμV	95
Output regulation	dB	20
DVB-T modulation		
Number of channels		4 flexible
Output frequency	MHz	170 - 230 / 470 - 862
Constellation - Mode		QPSK, 16QAM, 64QAM - 2K
Bandwidth	MHz	7 or 8
FEC		1/2, 2/3, 3/4, 5/6, 7/8
Guard interval		1/4, 1/8, 1/16, 1/32
MER	dB	>32
DVB-C modulation		
Number of channels		4 flexible
Output frequency	MHz	170 - 230 / 470 - 862
Constellation		16, 32, 64, 128, 256QAM
Bandwidth	MHz	7 or 8
Symbol rate	MSps	4 ... 6.96
MER	dB	>32
GENERAL		
Local programming		By USB / RJ45 cable (LAN) with FA 524 or CM PR
Remote programming		By RJ45 (Internet) (CM Key)
Power supply	Vdc	5
Consumption (No LNB, no USB, no CAM, no HDMI)	mA	4300
Operating temperature	°C	0 - 40

CM 8SH CI-TC

NEW

- OCTO module with 4 SAT inputs and 8 tuners
- 1 HDMI input
- 1 USB 2.0 input
- Independent control of each input 13 / 18V - 22KHz - DiSEqC (A / B / C / D)
- Flexible remultiplexing of services on any output channel
- NIT tables editing, SID remapping, sending or deleting EMM messages and CAT tables
- Programmable QAM / COFDM output
- Output of up to 4 channels COFDM / 4 flexible QAM channels
- High output level
- Excellent output signal quality with a high MER
- LCN / LCN HD insert
- Programming through "CM Management" PC software
- Configuration cloning, Status and configuration report
- On-site management (FA 510 / CM PR) or remote (FA 524)
- 2 common interface slots

COMMON
INTERFACEUSB AND
HDMI
INPUTCM 8SH
CI-TC

SATELLITE + HDMI INPUT FLEXIBLE DVB-T / DVB-C + IP OUTPUT

CM 8SH TC/IP

NEW

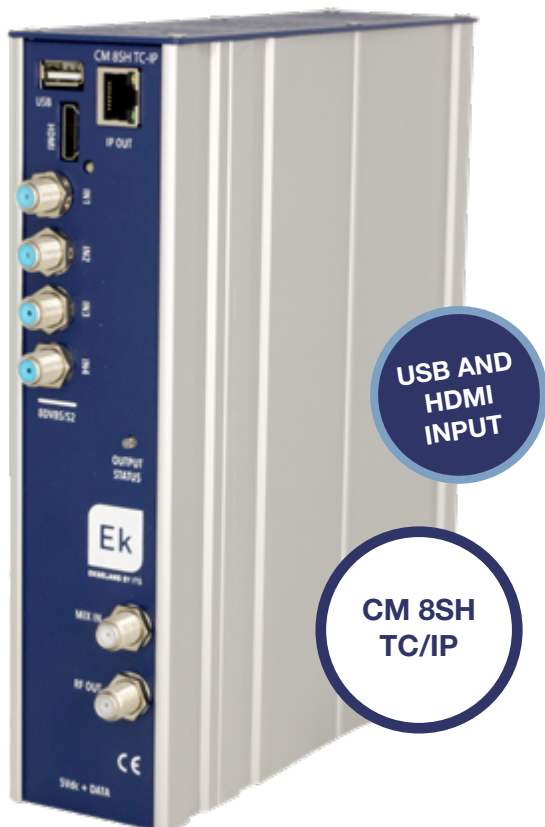
- OCTO module with 4 SAT inputs and 8 tuners
- 1 HDMI input
- 1 USB 2.0 input
- Independent control of each input 13 / 18V - 22KHz - DiSEqC (A / B / C / D)
- Programming through "CM Management" PC software
- Configuration cloning and reporting
- On-site management (FA 510 / CM PR) or remote (FA 524)

TC output

- Flexible remultiplexing of services on any output channel
- Editing NIT tables, SID remapping and passing or deleting EMM messages and CAT tables
- Flexible QAM / COFDM output
- Output of up to 4 channels COFDM / 4 flexible QAM channels
- High output level
- Excellent output signal quality with a high MER
- LCN / LCN HD insert

IP output

- IP output 100Mbps SPTS / MPTS in UDP / RTP format
- Up to 16 output streams
- SAP function
- IGMP Query and IGMP Auto-Joint



REFERENCE		CM 8SH TC-IP
Code		082257
INPUT		
Number of inputs		4x RF + 1x HDMI + 1x USB
RF INPUT		
Number of tuners		8
Input frequency	MHz	950 - 2150
Input level	dBμV	40 - 79
Symbol rate	Mbps	1 - 45
Modulation type		QPSK / 8PSK / 16APSK / 32APSK
Telepower	V / KHz	13/18 - 0/22
DiSEqC		A / B / C / D
USB		
Priority		1
Version		2.0
File System		FAT32 / NTFS
Reproduction		Autoplay, List, Time schedule
File format		.TS (Transport Stream)
HDMI		
Priority		2
Video / Bitrate	- / Mbps	H.264 / 5 - 15
Audio / Bitrate	- / Kbps	AAC-LC, MPEG1-L2 / 128 - 384
Max resolution		1080p
TC OUTPUT		
Number of outputs		1
Mixing port	dB	<1.5
Output frequencies	MHz	170 - 862
Maximum output level	dBμV	95
Output regulation	dB	20
DVB-T modulation		
Number of channels		4 flexible
Output frequency	MHz	170 - 230 / 470 - 862
Constellation - Mode		QPSK, 16QAM, 64QAM - 2K
Bandwidth	MHz	7 y 8
FEC		1/2, 2/3, 3/4, 5/6, 7/8
Guard interval		1/4, 1/8, 1/16, 1/32
MER	dB	>32
DVB-C modulation		
Number of channels		4 flexible
Output frequency	MHz	170 - 230 / 470 - 862
Constellation		16, 32, 64, 128, 256QAM
Bandwidth	MHz	7 or 8
Symbol rate	MSps	4 ... 6,96
MER	dB	>32
IP OUTPUT		
Connector		RJ45 - Fast Ethernet
Routing scheme		Unicast / Multicast
Maximum services		16 (SPTS / MPTS)
Protocols		UDP / RTP / QoS / SAP
Features		IGMP Query and IGMP Auto-Joint
GENERAL		
Local programming		By USB / RJ45 cable (LAN) with FA 524 or CM PR
Remote programming		By RJ45 (Internet) (CM Key)
Power supply	Vdc	5
Consumption (No LNB, no USB, no CAM, no HDMI)	mA	4600
Operating temperature	°C	0 - 40

DVB-T/T2 INPUT FLEXIBLE DVB-T / DVB-C OUTPUT

REFERENCE		CM 4T-TC
Code		082258
INPUT		
Number of inputs		1x RF
Number of tuners		4
DVB-T / T2 reception		
Input frequency	MHz	110 - 862
Input level	dBμV	33-88
Constellation - Mode		QPSK, 16, 64, 256QAM 1K, 2K, 4K, 8K, 16K, 32K
DVB-C reception		
Input frequency	MHz	110 - 862
Input level	dBμV	46 - 88
Constellation - Mode	- / MHz	QPSK, 16, 32, 64, 128, 256 QAM / 6, 7, 8
Symbol rate	MSps	0,2 - 7,7
OUTPUT		
Number of outputs		1
Mixing port	dB	<1,5
Output frequencies	MHz	170 - 862
Maximum output level	dBμV	95
Output regulation	dB	20
DVB-T modulation		
Number of channels		4 flexible
Output frequency	MHz	170 - 230 / 470 - 862
Constellation - Mode		QPSK, 16QAM, 64QAM - 2K
Bandwidth	MHz	7 or 8
FEC		1/2, 2/3, 3/4, 5/6, 7/8
Guard interval		1/4, 1/8, 1/16, 1/32
MER	dB	>32
DVB-C modulation		
Number of channels		4 flexible
Output frequency	MHz	170 - 230 / 470 - 862
Constellation		16, 32, 64, 128, 256QAM
Bandwidth	MHz	7 or 8
Symbol rate	MSps	4 .. 6,96
MER	dB	>32
GENERAL		
Local programming		By USB / RJ45 cable (LAN) with FA 524 or CM PR
Remote programming		By RJ45 (Internet) (CM Key)
Power supply	Vdc	5
Consumption	mA	2300
Operating temperature	°C	0 - 40

CM 4T-TC

NEW

- QUAD terrestrial and cable module (DVB-T / T2 / C)
- 1 input / 4 independent tuners
- Input LOOP
- Flexible remultiplexing of services on any output channel
- NIT tables editing, SID remapping, sending or deleting EMM messages and CAT tables
- Programmable QAM / COFDM output
- Output of up to 4 channels COFDM / 4 flexible QAM channels
- High output level
- Excellent output signal quality with high MER
- LCN / LCN HD insert
- Programming through "CM Management" PC software
- Configuration cloning, Status and configuration report
- On-site management (FA 510 / CM PR) or remote (FA 524)



DVB-T/T2 INPUT FLEXIBLE DVB-T / DVB-C OUTPUT

CM 4T CI-TC

NEW

- QUAD terrestrial and cable module (DVB-T / T2 / C)
- 1 input / 4 independent tuners
- Input LOOP
- Flexible remultiplexing of services on any output channel
- NIT tables editing, SID remapping, sending or deleting EMM messages and CAT tables
- Programmable QAM / COFDM output
- Output of up to 4 channels COFDM / 4 flexible QAM channels
- High output level
- Excellent output signal quality with high MER
- LCN / LCN HD insert
- Programming through "CM Management" PC software
- Configuration cloning, Status and configuration report
- On-site management (FA 510 / CM PR) or remote (FA 524)
- 2 common interface slots



REFERENCE		CM 4T CI-TC
Code		082259
INPUT		
Number of inputs		1x RF
Number of tuners		4
DVB-T / T2 reception		
Input frequency	MHz	110 - 862
Input level	dBuV	33-88
Constellation - Mode		QPSK, 16, 64, 256QAM 1K, 2K, 4K, 8K, 16K, 32K
DVB-C reception		
Input frequency	MHz	110 - 862
Input level	dBuV	46 - 88
Constellation - Mode	- / MHz	QPSK, 16, 32, 64, 128, 256 QAM / 6, 7, 8
Symbol rate	MSps	0.2 - 7.7
Common interface		2 x CI
OUTPUT		
Number of outputs		1
Mixing port	dB	<1.5
Output frequencies	MHz	170 - 862
Maximum output level	dBuV	95
Output regulation	dB	20
DVB-T modulation		
Number of channels		4 flexible
Output frequency	MHz	170 - 230 / 470 - 862
Constellation - Mode		QPSK, 16QAM, 64QAM - 2K
Bandwidth	MHz	7 or 8
FEC		1/2, 2/3, 3/4, 5/6, 7/8
Guard interval		1/4, 1/8, 1/16, 1/32
MER	dB	>32
DVB-C modulation		
Number of channels		4 flexible
Output frequency	MHz	170 - 230 / 470 - 862
Constellation		16, 32, 64, 128, 256QAM
Bandwidth	MHz	7 or 8
Symbol rate	MSps	4 .. 6,96
MER	dB	>32
GENERAL		
Local programming		By USB / RJ45 cable (LAN) with FA 524 or CM PR
Remote programming		By RJ45 (Internet) (CM Key)
Power supply	Vdc	5
Consumption (no CAM)	mA	2500
Operating temperature	°C	0 - 40

MULTI-INPUT MODULATORS PROGRAMMABLE DVB-T / DVB-C OUTPUT

REFERENCE		CM 4HD-TC
Code		082004
INPUT		
Number of inputs		4 (A1, B1, A2, B2)
A/V		
HDMI		
Video / Bitrate	- / Mbps	H.264 / 5 - 15
Audio / Bitrate	- / Kbps	AAC-LC, MPEG1-L2 / 128 - 384
Maximum resolution		1080p
OUTPUT		
Number of outputs		1
Mixing port	dB	<1,5
Output frequencies	MHz	170 - 862
Maximum output level	dBμV	95
Output regulation	dB	20
DVB-T modulation		
Number of channels		2
Output frequencies	MHz	170 - 862
Constellation - Modo		QPSK, 16QAM, 64QAM - 2K
FEC		1/2, 2/3, 3/4, 5/6, 7/8
Guard interval		1/4, 1/8, 1/16, 1/32
MER	dB	>35
DVB-C modulation		
Number of channels		2
Output frequencies	MHz	50 - 862
Constellation		16, 32, 64, 128, 256QAM
Symbol rate	Mbps	4 .. 6,96
MER	dB	>40
GENERAL		
Local programming		By USB / RJ45 cable (LAN) with FA 524 or CM PR
Remote programming		By RJ45 (Internet) (CM Key)
Power supply	Vdc	5
Consumption	mA	3000
Working temperature	°C	0 - 40

CM 4HD-TC

- 4 HDMI (HD) inputs
- Resolution of each input up to 1080p
- Programmable COFDM / QAM output
- Programming through "CM Management" PC software
- Remote management from FA 524 or CM PR



MULTI-INPUT MODULATORS PROGRAMMABLE DVB-T / DVB-C OUTPUT

CM 2AV-T

- Multifunction headers series CM Encoder 2 A / V to COFDM / DTT
- 2 audio / video inputs (CVBS)
- Flexible COFDM output
- Programming through "CM Management" PC software
- Remote management from FA 524 or CM PR



REFERENCE	CM 2AV-T
Code	082025
INPUT	
Number of video inputs	2 x CVBS
Video resolution mode	PAL (720x576) / NTSC (720x480)
Video compression	MPEG 2
Number of audio inputs	2 x audio stereo / 0.5-2.5 Vpp
Sample rate	48 KHz
Compression audio	MPEG1, LAYER II
DVB processing	Table insertion PAT, PNT, SDT, NIT
Configuration	NOMBRE DE PROGRAMA, SID, LCN, NETWORK NAME, TSD, ONID, NID, VERSION NIT, LCN, PMT
OUTPUT	
Number of outputs	1 + loop-through (-1.5 dB)
Maximum output level	95 dB μ V
Output regulation	20 dB (por software)
Output frequency	170-230 MHz + 470-862 MHz
Output MUXES	1 COFDM
Channel width	7 MHz (VHF) / 8 MHz (UHF)
COFDM modulation mode	2K / 8K
Constellation - FEC COFDM	QPSK/16QAM/64QAM 1/2, 2/3, 3/4, 5/6, 7/8
Guard interval	1/4, 1/8, 1/16, 1/32
MER	> 32dB
VARIOS	
Programming	PC software "CM management" via USB connected to the FA 524 / CM PR source
Power supply	5 Vdc
Consumption	1.2 A
Working temperature	0 - 40°

MULTI-INPUT MODULATOR FLEXIBLE DVB-T OUTPUT

REFERENCE	CM 4AV-TC
Code	082003
Inputs	
Number of video inputs	4 x CVBS
Video resolution mode	PAL (720x576) / NTSC (720X480)
Video compression	MPEG 2
Number of audio inputs	4 x audio stereo / 0.5-2.5 Vpp
Sample rate	48 KHz
Audio compression	MPEG1, LAYER II
DVB processing	Insertion of table PAT, PNT, SDT, NIT
Configuration	Program name, SID, LCN, NETWORK NAME, TSD, ONID, NID, VERSION NIT, LCN, PID, PMT, PID VIDEO, PID AUDIO
Output	
Number of outputs	1 + loop-through (-1.5 dB)
Maximum output level	95 dBuV
Output regulation	20 dB (by software)
Output frequency	170-230 MHz + 470-862 MHz
Output MUXES	1 COFDM or 1 QAM
Channel bandwidth	7 MHz (VHF) / 8 MHz (UHF)
COFDM modulation mode	2K / 8K
Constellation - FEC COFDM	QPSK/16QAM/64QAM - 1/2, 2/3, 3/4, 5/6, 7/8
Guard interval	1/4, 1/8, 1/16, 1/32
Constellation- S/R QAM	16, 32, 64, 128, 256 QAM (EN 300 429) - 4,00 - 6,96 Msps
MER	> 35dB
Various	
Programming system	PC software "CM management" through USB cable connected to power supply FA 524
Working voltage	5 Vdc
Current consumption	2 A
Temperature margin	0 - 40°

CM 4AV-TC

- 4 audio/video inputs (CVBS)
- Flexible COFDM output
- Programming through "CM Management" PC software
- Remote management from FA 524 or CM PR



MULTI-INPUT MODULATOR FLEXIBLE DVB-T OUTPUT

CM 4HD-T

- 4 HDMI (HD) inputs
- Resolution of each input up to 1080p
- Flexible COFDM output
- Programming through "CM Management" PC software
- Remote management from FA 524 or CM PR



REFERENCE	CM 4HD-T
Code	082022
Input	
Number of inputs	4 x HDMI
Video resolution mode	720 p - 1080p
Video compression	H.264 - BIRATE 5-15 Mb/s
Audio sample rate	HDMI (32 kHz / 44.1 kHz / 48 kHz)
Audio compression	AAC-LC - bitrate 128-384 Kb/s
DVB processing	PAT, PMT, SDT, NIT, EIT
Configuration	NOMBRE DE PROGRAMA Y RED , SID, LCN, TSID, ONID, NID, EIT, versiones, audio, video PIDs...
Output	
Number of outputs	1 + loop-through (-1.5 dB)
Maximum output level	95 dB μ V
Output regulation	20 dB (por software)
Output frequency	170-230 MHz + 470-862 MHz
Output MUXES	2 COFDM
Channel width	7 MHz (VHF) / 8 MHz (UHF)
COFDM modulation mode	2K / 8K
Constellation - FEC COFDM	QPSK/16QAM/64QAM - 1/2, 2/3, 3/4, 5/6, 7/8
Guard interval	1/4, 1/8, 1/16, 1/32
MER	> 32dB
Various	
Programming	PC software "CM management" via USB connected to the FA 524 / CM PR source
Power supply	5 Vdc
Consumption	3 A
Working temperature	0 - 40°

SATELLITE + HDMI INPUT IP OUTPUT

REFERENCE		CM 8SH-IP
Code		082262
INPUT		
Number of inputs		4x RF + 1x HDMI + 1x USB
RF INPUT		
Number of tuners		8
Input frequency	MHz	950 - 2150
Input level	dBμV	40 - 79
Symbol rate	Mbps	1 - 45
Modulation type		QPSK / 8PSK / 16APSK / 32APSK
Telepower	V / KHz	13/18 - 0/22
DiSEqC		A / B / C / D
USB		
Priority		1
Version		2.0
File System		FAT32 / NTFS
Reproduction		Autoplay, List, Time schedule
File format		.TS (Transport Stream)
HDMI		
Priority		2
Video / Bitrate	- / Mbps	H.264 / 5 - 15
Audio / Bitrate	- / Kbps	AAC-LC, MPEG1-L2 / 128 - 384
Max resolution		1080p
OUTPUT		
Connector		RJ45 - Fast Ethernet
Routing scheme		Unicast / Multicast
Maximum services		16 (SPTS / MPTS)
Protocols		UDP / RTP / QoS / SAP
Features		IGMP Query and IGMP Auto-Joint
GENERAL		
Local programming		By USB / RJ45 cable (LAN) with FA 524 or CM PR
Remote programming		By RJ45 (Internet) (CM Key)
Power supply	Vdc	5
Consumption (No LNB, no USB, no CAM, no HDMI)	mA	3500
Operating temperature	°C	0 - 40

CM 8SH IP

NEW

- OCTO module with 4 SAT inputs and 8 tuners
- 1 HDMI input
- 1 USB 2.0 input
- Independent control of each input 13 / 18V - 22KHz - DiSEqC (A / B / C / D)
- IP output 100Mbps SPTS / MPTS in UDP / RTP format
- Up to 16 output streams
- SAP function
- IGMP Query and IGMP Auto-Joint
- Programming through "CM Management" PC software
- Configuration cloning, Status and configuration report
- On-site management (FA 510 / CM PR) or remote (FA 524)



USB AND
HDMI
INPUT

CM 8SH-IP

SATELLITE + HDMI INPUT IP OUTPUT

Ek

CM 8SH-CI IP

NEW

- OCTO module with 4 SAT inputs and 8 tuners
- 1 HDMI input
- 1 USB 2.0 input
- Independent control of each input 13 / 18V - 22KHz - DiSEqC (A / B / C / D)
- IP output 100Mbps SPTS / MPTS in UDP / RTP format
- Up to 16 output streams
- SAP function
- IGMP Query and IGMP Auto-Joint
- Programming through "CM Management" PC software
- Configuration cloning, Status and configuration report
- On-site management (FA 510 / CM PR) or remote (FA 524)
- 2 common interface slots



COMMON
INTERFACE

USB AND
HDMI
INPUT

CM 8SH CI-IP

REFERENCE		CM 8SH-CI-IP
Code		082263
INPUT		
Number of inputs		4x RF + 1x HDMI + 1x USB
RF INPUT		
Number of tuners		8
Input frequency	MHz	950 - 2150
Input level	dBμV	40 - 79
Symbol rate	Mbps	1 - 45
Modulation type		QPSK / 8PSK / 16APSK / 32APSK
Telepower	V / KHz	13/18 - 0/22
DiSEqC		A / B / C / D
USB		
Priority		1
Version		2.0
File System		FAT32 / NTFS
Reproduction		Autoplay, List, Time schedule
File format		.TS (Transport Stream)
HDMI		
Priority		2
Video / Bitrate	- / Mbps	H.264 / 5 - 15
Audio / Bitrate	- / Kbps	AAC-LC, MPEG1-L2 / 128 - 384
Max resolution		1080p
COMMON INTERFACE		
Slots		2
OUTPUT		
Connector		RJ45 - Fast Ethernet
Routing scheme		Unicast / Multicast
Maximum services		16 (SPTS / MPTS)
Protocols		UDP / RTP / QoS / SAP
Features		IGMP Query and IGMP Auto-Joint
GENERAL		
Local programming		By USB / RJ45 cable (LAN) with FA 524 or CM PR
Remote programming		By RJ45 (Internet) (CM Key)
Power supply	Vdc	5
Consumption (No LNB, no USB, no CAM, no HDMI)	mA	3700
Operating temperature	°C	0 - 40

DVB-T/T₂/C INPUT IP OUTPUT

REFERENCE		CM 4T-IP
Code		082260
INPUT		
Number of inputs		1x RF
Number of tuners		4
DVB-T / T ₂ reception		
Input frequency	MHz	110 - 862
Input level	dBμV	33-88
Constellation - Mode		QPSK, 16, 64, 256QAM 1K, 2K, 4K, 8K, 16K, 32K
DVB-C reception		
Input frequency	MHz	110 - 862
Input level	dBμV	46 - 88
Constellation - Mode	- / MHz	QPSK, 16, 32, 64, 128, 256 QAM / 6, 7, 8
Symbol rate	MSps	0,2 - 7,7
OUTPUT		
Connector		RJ45 - Fast Ethernet
Routing scheme		Unicast / Multicast
Maximum services		16 (SPTS / MPTS)
Protocols		UDP / RTP / QoS / SAP
Features		IGMP Query and IGMP Auto-Joint
GENERAL		
Local programming		By USB / RJ45 cable (LAN) with FA 524 or CM PR
Remote programming		By RJ45 (Internet) (CM Key)
Power supply	Vdc	5
Consumption	mA	1700
Operating temperature	°C	0 - 40

CM 4T-IP

NEW

- QUAD terrestrial and cable module (DVB-T / T₂ / C)
- 1 input / 4 independent tuners
- Input LOOP
- IP output 100Mbps SPTS / MPTS in UDP / RTP format
- Up to 16 output streams
- SAP function
- IGMP Query and IGMP Auto-Joint
- Programming through "CM Management" PC software
- Configuration cloning, Status and configuration report
- On-site management (FA 510 / CM PR) or remote (FA 524)



CM 4T-IP

DVB-T/T2/C INPUT IP OUTPUT

CM 4T CI-IP

NEW

- QUAD terrestrial and cable module (DVB-T / T2 / C)
- 1 input / 4 independent tuners
- Input LOOP
- IP output 100Mbps SPTS / MPTS in UDP / RTP format
- Up to 16 output streams
- SAP function
- IGMP Query and IGMP Auto-Joint
- Programming through "CM Management" PC software
- Configuration cloning. Status and configuration report
- On-site management (FA 510 / CM PR) or remote (FA 524)
- 2 common interface slots



REFERENCE		CM 4T-CI-IP
Code		082261
INPUT		
Number of inputs		1x RF
Number of tuners		4
DVB-T / T2 reception		
Input frequency	MHz	110 - 862
Input level	dBμV	33-88
Constellation - Mode		QPSK, 16, 64, 256QAM 1K, 2K, 4K, 8K, 16K, 32K
DVB-C reception		
Input frequency	MHz	110 - 862
Input level	dBμV	46 - 88
Constellation - Mode	- / MHz	QPSK, 16, 32, 64, 128, 256 QAM / 6, 7, 8
Symbol rate	MSps	0,2 - 7,7
Common interface		2 x CI
OUPUT		
Connector		RJ45 - Fast Ethernet
Routing scheme		Unicast / Multicast
Maximum services		16 (SPTS / MPTS)
Protocols		UDP / RTP / QoS / SAP
Features		IGMP Query and IGMP Auto-Joint
GENERAL		
Local programming		By USB / RJ45 cable (LAN) with FA 524 or CM PR
Remote programming		By RJ45 (Internet) (CM Key)
Power supply	Vdc	5
Consumption (no CAM)	mA	1900
Operating temperature	°C	0 - 40

MULTI-INPUT MODULATOR IP OUTPUT

REFERENCE	CM 4AV-IP	
Code	082007	
INPUT		
Number of inputs	4 (A1, B1, A2, B2)	
A/V		
Video	CVBS	
Input level	Vpp	0,7 - 1,4
Impedance	Ω	75
Video compression	MPEG2	
Video bitrate	Mbps	4 - 12
Audio compression	MPEG1 Layer 2	
Audio bitrate	Kbps	128 - 384
HDMI		
Video / Bitrate	- / Mbps	-
Audio / Bitrate	- / Kbps	-
Max resolution		
OUTPUT		
Connector	RJ45 - Fast Ethernet	
Routing scheme	Unicast / Multicast	
Maximum services	16 (SPTS / MPTS)	
Protocols	UDP / RTP / QoS / SAP	
GENERAL		
Local programming	By USB / RJ45 cable (LAN)	
Remote programming	By RJ45 (Internet) (CM Key)	
Power supply	Vdc	5
Consumption	mA	2000
Working temperature	$^{\circ}\text{C}$	0 - 40

CM 4AV-IP

- 4 audio/video inputs (CVBS) to IP multicast modulators
- Encoding parameters setting
- IP output 100Mbps SPTS / MPTS in UDP / RTP format
- Flexible remultiplexing of services on IP egress
- SAP function
- Up to 16 output streams
- Programming through "CM Management" PC software
- Configuration cloning. Status and configuration report
- Remote management from FA 524 using CM KEY



MULTI-INPUT MODULATOR IP OUTPUT

CM 4HD-IP

- 4 HDMI (HD) inputs to IP multicast modulators
- Encoding parameters setting
- IP output 100Mbps SPTS / MPTS in UDP / RTP format
- Flexible remultiplexing of services on IP output
- SAP function
- Up to 16 output streams
- Programming through "CM Management" PC software
- Configuration cloning. Status and configuration report
- Remote management from FA 524 using CM KEY



REFERENCE		CM 4HD-IP
Code		082008
INPUT		
Number of inputs		4 (A, B, C, D)
A/V		
HDMI		
Video / Bitrate	- / Mbps	H.264 / 5 - 15
Audio / Bitrate	- / Kbps	AAC-LC, MPEG1-L2 / 128 - 384
Max resolution		1080p
OUTPUT		
Connector		RJ45 - Fast Ethernet
Routing scheme		Unicast / Multicast
Maximum services		16 (SPTS / MPTS)
Protocols		UDP / RTP / QoS / SAP
GENERAL		
Local programming		By USB / RJ45 cable (LAN)
Remote programming		By RJ45 (Internet) (CM Key)
Power supply	Vdc	5
Consumption	mA	2400
Working temperature	°C	0 - 40

IP INPUT PROGRAMMABLE DVB-T/C OUTPUT

REFERENCE		CM IP-TC
Code		082018
INPUT		
Connector		RJ45 - Fast Ethernet
Routing scheme		Unicast / Multicast
Maximum services		15 (SPTS / MPTS)
Supported protocols		IEEE 802.3, SPTS / MPTS, UDP, RTP, QoS
Local IP assignment		DHCP / Static
PCR (Program Clock Reference)		According to ETSI TR 101 290
COMMON INTERFACE		
Slots		-
OUTPUT		
Number of outputs		1
Mixing port	dB	<1,5
Output frequency	MHz	170 - 862
Maximum output level	dBμV	95
Output regulation	dB	20
DVB-T modulation		
Number of channels		3
Output frequency	MHz	170 - 862
Constellation - Mode		QPSK, 16QAM, 64QAM - 2K
FEC		1/2, 2/3, 3/4, 5/6, 7/8
Guard interval		1/4, 1/8, 1/16, 1/32
MER	dB	>35
DVB-C modulation		
Number of channels		4
Output frequency	MHz	50 - 862
Constellation		16, 32, 64, 128, 256QAM
Symbol rate	Mbps	4 .. 6,96
MER	dB	>40
GENERAL		
Local programming		By USB / RJ45 cable (LAN) with FA 524 or CM PR
Remote programming		By RJ45 (Internet) (CM Key)
Power supply	Vdc	5
Consumption (without CAM)	mA	1800
Working temperature	°C	0 - 40

CM IP-TC

- Input up to 15 IP Unicast / Multicast services
- Supported protocols: SPTS / MPTS, UDP / RTP, SIP, QoS
- Support services with different input bit rates
- Programmable QAM / COFDM output
- Flexible remultiplexing of services on IP output
- NIT tables editing, SID remapping, sending or deleting EMM messages and CAT tables
- LCN / LCN HD insert
- Output connector or input connector for mixing
- High output level
- Excellent output signal quality with a high MER
- Programming through "CM Management" PC software
- Configuration cloning. Status and configuration report
- Remote management from FA 524 using CM KEY



IP INPUT PROGRAMMABLE DVB-T/C OUTPUT

CM IP CI-TC

- Input up to 15 IP Unicast / Multicast services
- Supported protocols: SPTS / MPTS, UDP / RTP, SIP, QoS
- Support services with different input bit rates
- Programmable QAM / COFDM output
- Flexible remultiplexing of services on IP output
- NIT tables editing, SID remapping, sending or deleting EMM messages and CAT tables
- LCN / LCN HD insert
- Output connector or input connector for mixing
- High output level
- Excellent output signal quality with a high MER
- Programming through "CM Management" PC software
- Configuration cloning, Status and configuration report
- Remote management from FA 524 using CM KEY



Reference		CM IP CI-TC
Code		082019
INPUT		
Connector		RJ45 - Fast Ethernet
Routing scheme		Unicast / Multicast
Maximum services		15 (SPTS / MPTS)
Supported protocols		IEEE 802.3, SPTS/ MPTS, UDP, RTP, QoS
Local IP assignment		DHCP / Static
PCR (Program Clock Reference)		According to ETSI TR 101 290
COMMON INTERFACE		
Slots		2
OUTPUT		
Number of outputs		1
Mixing port	dB	<1,5
Output frequency	MHz	170 - 862
Maximum output level	dB μ V	95
Output regulation	dB	20
DVB-T modulation		
Number of channels		4
Output frequency	MHz	170 - 862
Constellation - Mode		QPSK, 16QAM, 64QAM - 2K
FEC		1/2, 2/3, 3/4, 5/6, 7/8
Guard interval		1/4, 1/8, 1/16, 1/32
MER	dB	>35
DVB-C modulation		
Number of channels		4
Output frequency	MHz	50 - 862
Constellation		16, 32, 64, 128, 256QAM
Symbol rate	Mbps	4 ... 6,96
MER	dB	>40
GENERAL		
Local programming		By USB / RJ45 cable (LAN) with FA 524 or CM PR
Remote programming		By RJ45 (Internet) (CM Key)
Power supply	Vdc	5
Consumption (without CAM)	mA	1500
Working temperature	$^{\circ}$ C	0 - 40

IP INPUT IP OUTPUT

REFERENCE		CM IP CI-IP
Code		082037
INPUT		
Connector		RJ45 - Fast Ethernet
Routing scheme		Unicast / Multicast
Maximum services		15 (SPTS / MPTS)
Supported protocols		IEEE 802.3, SPTS/ MPTS, UDP, RTP, QoS
Local IP assignment		DHCP / Static
PCR (Program Clock Reference)		According to ETSI TR 101 290
COMMON INTERFACE		
Slots		2
OUTPUT		
Connector		RJ45 - Fast Ethernet
Routing scheme		Unicast / Multicast
Maximum services		16 (SPTS / MPTS)
Local IP assignment		DHCP / Static
Supported protocols		UDP / RTP / QoS / SAP
GENERAL		
Local programming		USB / RJ45 (LAN)
Remote programming		RJ45 (Internet) + CM Key
Power supply	Vdc	5
Consumption (without CAM)	mA	1000
Working temperature	°C	0 - 40

CM IP CI-IP

- Input up to 15 IP Unicast / Multicast services
- Supports services with different input bit rates
- Passing or deleting EMM messages and CAT tables
- 100Mbps SPTS / MPTS IP output in UDP / RTP format
- Flexible remultiplexing of services on IP output
- SAP function
- Up to 16 output streams
- Programming through "CM Management" PC software
- Configuration cloning, Status and configuration report
- Remote control built into the FA 524 source using CM KEY



1GHz OPTICAL TRANSMITTER

Ek

CM TO 3 1310

- They allow the distribution of radio frequency signal over long distances taking advantage of fiber optics
- Optical output level indicator LED
- Input level regulation



CM TO3 1310

REFERENCE		CM TO 3-1310
Code		274101
RF Input		
Frequency	MHz	47 - 1000
Flatness	dB	±0,75
TV input level	dBμV	70-80*
Input level SAT	dBμV	-
TV + SAT input level	dBμV	-
Input regulation	dBμV	20
Return losses	dB	≥14
Input impedance	Ω	75
Connector		F type
Optical output		
Wavelength	nm	1310
Optical power output	dBm	3
Laser type		DFB
Optical adaptation	dB	>45
Optical connector		SC / APC
Input voltage	Vac	88 - 264
Input frequency	Hz	47 - 63
Peak current	mA	-
LNB Power supply	Vdc KHz	-
Operating temperature	°C	-20...+55

(*) 59 Ch PAL-I analog channels

(**)

(***)

2,6GHz OPTICAL TRANSMITTER

CM TO 3 FI-1310

- They allow the distribution of radio frequency signal over long distances taking advantage of fiber optics
- Optical output level indicator LED
- Allows selection of satellite band and polarity
- Input level regulation

REFERENCE		CM TO 3 FI-1310
Code		274100
RF Input		
Frequency	MHz	47 - 2150
Flatness	dB	±0,75
TV input level	dBμV	70-80*
Input level SAT	dBμV	58-78**
TV + SAT input level	dBμV	72-84***
Input regulation	dBμV	20
Return losses	dB	≥14
Input impedance	Ω	75
Connector		F type
Optical output		
Wavelength	nm	1310
Optical power output	dBm	3
Laser type		DFB
Optical adaptation	dB	>45
Optical connector		SC / APC
Input voltage	Vac	88 - 264
Input frequency	Hz	47 - 63
Peak current	mA	500
LNB Power supply	Vdc KHz	13 - 18 0 - 22
Operating temperature	°C	-20...+55

(*) 59 Ch PAL-I analog channels

(**)

(***)



CM TO3 FI
1310

2,6GHz OPTICAL TRANSMITTER

Ek

CM TO 10 FI-1550

- Allows the distribution of radio frequency signal over long distances taking advantage of fiber optics
- Optical output level indicator LED
- Allows selection of satellite band and polarity
- Input level regulation



REFERENCE		CM TO 10 FI-1550
Code		274102
RF Input		
Frequency	MHz	47 - 2150
Flatness	dB	±0.75
TV input level	dBμV	70-80*
Input level SAT	dBμV	58-78**
TV + SAT input level	dBμV	72-84***
Input regulation	dBμV	20
Return losses	dB	≥14
Input impedance	Ω	75
Connector		F type
Optical output		
Wavelength	nm	1550
Optical power output	dBm	10
Laser type		DFB
Optical adaptation	dB	>45
Optical connector		SC / APC
Input voltage	Vac	88 - 264
Input frequency	Hz	47 - 63
Peak current	mA	500
LNB Power supply	Vdc KHz	13 - 18 0 - 22
Operating temperature	°C	-20...+55

(*) 59 Ch PAL-I analog channels

(**)

(***)

OPTICAL SPLITTERS

CM RF 2 · CM RF 4 · CM RF 8

- Optical splitter with 2, 4 or 8 outputs. CM Headend Compatible



ACCESSORIES



FA 524

- High-efficiency power supply
- With protection fuses against electrical current overload
- It allows the programming and remote management of complete headend



REFERENCE	FA 524
Code	080003
Input voltage	90-253 Vcc
Input frequency	50-60 Hz
Output voltage	24 Vdc
Peak current	5A
Maximum power	120W
Type	Modular
Working temperature	0-45°
Programming mode	USB Connector
Programming	Via PC
Remote management	RJ45 Connector

REFERENCE		FA 510
Code		082036
Input voltage	Vac	88 - 264
Input frequency	Hz	47 - 63
Output voltage	Vdc	5
Peak current	A	10
Maximum power	W	50
Type		Modular
Working temperature	°C	0-45

FA 510

- High efficiency switching source
- With protection fuses against electrical current overload



CM PR / FA 55

- It allows the programming of CM Headend modules.
- Programming via CM Management (USB port).
- Programming via CM Management in remote (LAN / Internet).
- Feeding from CM module already fed via FA 55 PSU



REFERENCE		CM PR
Code	-	082014
Ports	-	Ethernet, USB (Tipo B)
Feeding	-	14 PIN HE bus.
Dimensions	mm	115x28x48

REFERENCE		FA 55
Code	-	082010
Feeding	Vac / Hz	100-240 / 46-63
Output voltage	Vdc	5
Max. output current	mA	5000



CM HEADEND

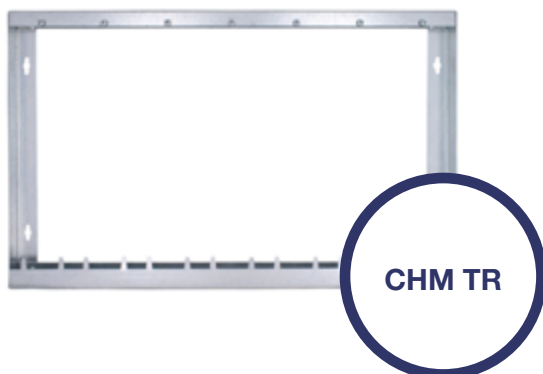
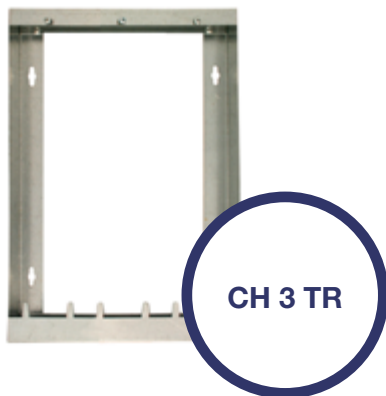
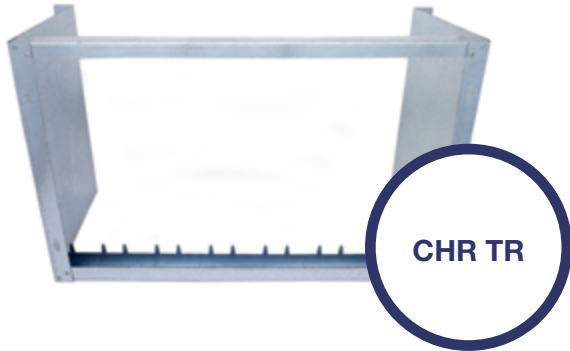
CM KEY

Remote
management
key

CM KEY

- CM Key allows the remote connection to the power supply FA 524 through the CM Management software (PC Software that allows the programming of the CM Headend via USB cable or remotely). As it is linked to the power supply, it's possible to have access to all the modules connected to the power supply only if connected to the internet. It's needed a user key and a password to identify it on the remote server.

CH 3 TR / CHR TR / CHM TR



REFERENCE	CH3 TR	CHM TR	CHR TR
Code	220005	080005	080006
Description	Wall-mount 3 CM modules	Wall-mount 6 CM modules	19" rack 6 CM modules
Number of modules	2 + Power supply	6 + Power supply	6 + Power supply
Mounting	Wall	Wall	Rack 19"
Height in rack units	-	-	6 U
Measures	187x265x26 mm	427x265x26 mm	475x265x200 mm
Material	Galvanized steel	Galvanized steel	Galvanized steel



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