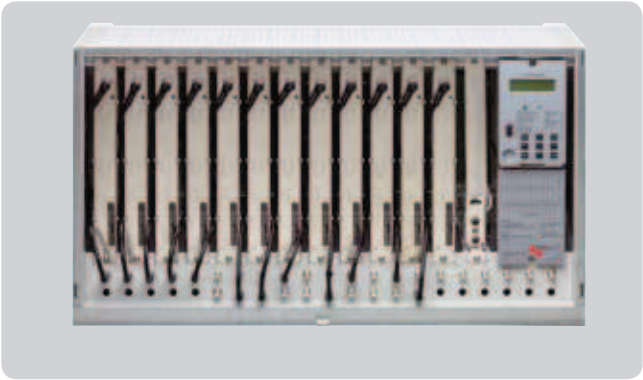
CSE 3300 digital main unit



CSE 3300 Base unit

CSE 3300 Headend system

- Headend station suitable for adjacent channels for master antenna systems
- Slots for 8 or 12 cassettes (up to 16 or 24 channels)
- Suitable for all analogue, digital TV and radio cassettes
- Max. output level 106 dBµV
- Simple software adaption for control unit (BE-REMOTE) possible via RS-232 socket
- Electronical software supported level adjustment via the control unit

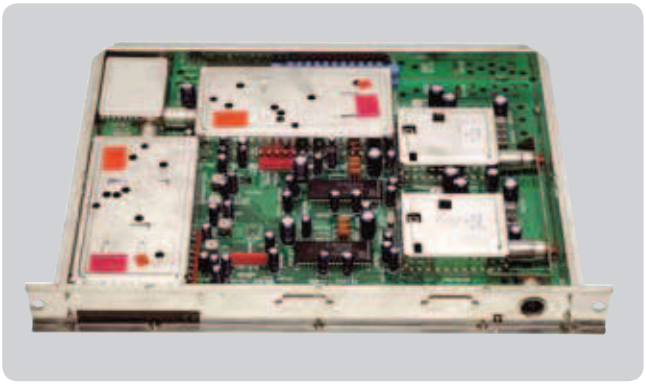
Technical data

TYPE **Art. No.**		**CSE 3312** **Main unit** **325100**	**CSE 3308** **Main unit** **325101**	**CSE 3319** **Main unit** **325102**
No. of slots for cassettes 12	Pcs	**12**	**8**	**8**
Delivery status unloaded		Unloaded	Unloaded	Unloaded
Fit for adjacent channels		Yes	Yes	Yes
Input/output impedance/ Programming		Integrated Control Unit 75Ω - BE-REMOTE	Integrated Control Unit 75Ω - BE-REMOTE	Integrated Control Unit 75Ω - BE-REMOTE
S/N weighted	dB	55	55	55
Input data				
Input frequency range	MHz	47 – 862, 950 – 2150	47 – 862, 950 – 2150	47 – 862, 950 – 2150
Input distributor		3 pieces each with 4 and 6 outputs	2 pieces with 9 outputs	2 pieces with 9 outputs
Power feed for LNB	V/mA	18 /1000	18 /1000	18 /1000
Output data				
HF output level/HF level adjusting	dBµV	max. 106 / -31dB	max. 106 / -20dB	max. 106 / -20dB
Output frequency range - dependent upon cassettes	MHz	47 – 862	47 – 862	47 – 862
Power supply				
Mains voltage/Frequency	Hz/V	50-60 / 195 – 260	50-60 / 195 – 260	50-60 / 195 – 260
Power consumption (fully loaded)	W	max. 210	max. 150	max. 150
Weight (fully loaded) approx.	kg	30	21	20
Dimensions (H x D x W)	mm	700 x 383 x 315	535 x 350 x 310	482 x 350 x 254 (19” x 8 HU)
Remarks				

CSE 3300 SAT & TER converter (Analogue)

Stereo Satellite Double Reception Cassette in CCIR standard

Each double cassette converts two SAT IF signals in one polarization plane into two selectable channels in the VHF/UHF band. A descrambler retrofit kit DNS universal can be retrofitted for each output channel.
Both output channels can be blanked (black picture – e.g. for hotel systems).



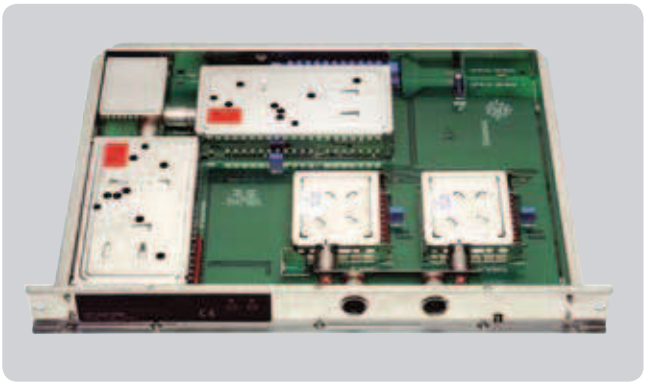
CSE 123x modules

Technical data

TYPE Art. No.		CCS 1231 Twin 325110	CCS 1233 Twin 325111	CCS 1234 Twin 325112	CCS 1235 Twin 325113
No. of inputs	Pcs	1	1	1	1
No. of converted channels	Pcs	2	2	2	2
Input frequency range	MHz	950 - 2150	950 - 2150	950 - 2150	950 - 2150
Output channels		A: C 02 - C 04 B: S 03 - S 24 incl. C 05 - C 12	S 03 - S 24 incl. C 05 - C 12	S 21 - S 41	C 21 - C 69

Stereo Terrestrial Double Reception Cassette in CCIR standard

Terrestrial cassettes for conversion of two analogue terrestrial signals into two selectable channels in the VHF/UHF band.



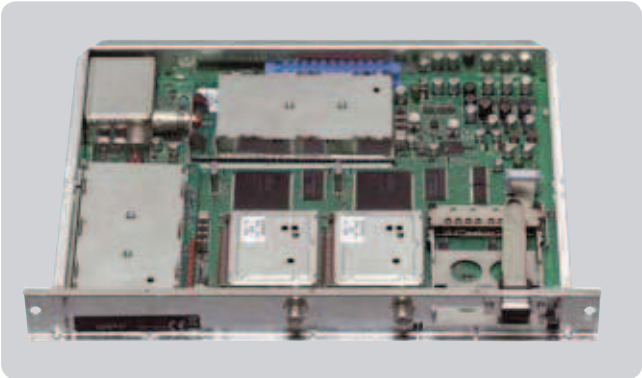
CSE 39x modules

Technical data

TYPE Art. No.		CCT 391 Twin 325115	CCT 393 Twin 325116	CCT 394 Twin 325117	CCT 395 Twin 325118
No. of inputs	Pcs	2	2	2	2
No. of converted channels	Pcs	2	2	2	2
Input frequency range	MHz	48.25 - 855.25	48.25 - 855.25	48.25 - 855.25	48.25 - 855.25
Output channels		A: C 02 - C 04 B: S 03 - S 24 incl. C 05 - C 12	S 03 - S 24 incl. C 05 - C 12	S 21 - S 41	C 21 - C 69

Stereo Satellite Double Reception Cassette from Digital SAT to PAL in CCIR standard (QPSK – PAL)

This double cassette transcodes two QPSK signals (SCPC or MCPC) to two selectable PAL channels in the frequency range 45 – 862 MHz.
Up to two encrypted TV programs can also be converted with the appropriate CA module via the channel A common interface. The WSS setting allows 16:9 channels to be viewed with the correct picture format. VPS and PDC signals and teletext information are also converted. DVB and teletext subtitles can be displayed. When radio stations are converted, the name of the radio station as well as the now and next information are displayed on the screen.



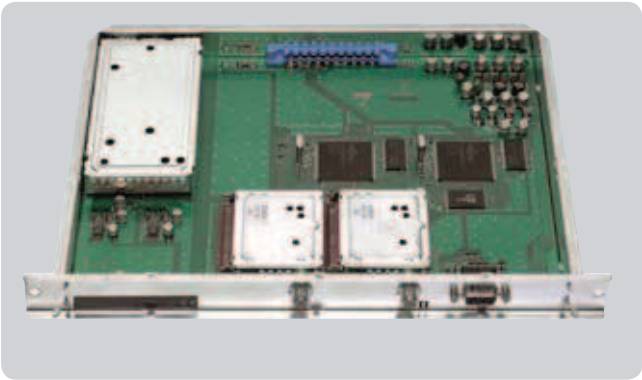
CCS 2370 modules

Technical data

TYPE Art. No.		CCS 2370 Twin QPSK to PAL 325130	CCS 2380 Twin QPSK to PAL 325131
No. of inputs	Pcs	2	2
No. of converted channels	Pcs	2	2
Input frequency range	MHz	950 - 2150	950 - 2150
Input symbol rate	Msymb/s	1 - 45	1 - 45
Software download	via	RS 232	RS 232
Output channels		C 02 - C 04 C 05 - C 12 S 03 - S 41 C 21 - C 69	C 02 - C 69

Stereo Satellite Double Reception Cassette from Digital SAT to FM (QPSK – FM)

This twin cassette converts two QPSK signals (SCPC or MCPC) into two selectable FM radio stations.



CSE 39x modules

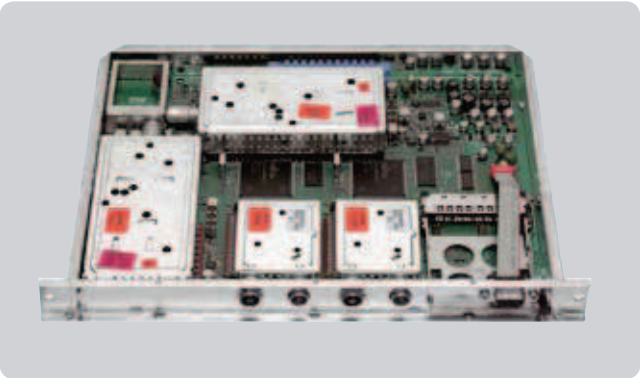
Technical data

TYPE Art. No.		CCSF 2360 QPSK to FM 325175
No. of inputs	Pcs	2
No. of converted channels	Pcs	2
Input frequency range	MHz	950 - 2150
Input symbol rate	Msymb/s	1 - 45
Software download	via	RS 232
Output channels	MHz	87.5 - 107.9

CSE 3300 Terrestrial transcoding (Digital)

Stereo terrestrial double reception cassette from digital terrestrial to PAL in CCIR standard (COFDM - PAL)

These double cassettes transcode two COFDM signals into two selectable PAL channels in the VHF/UHF band. Encrypted TV channels can also be converted with the appropriate CA module via the common interface. The WSS setting allows 16:9 channels to be viewed with the correct picture format. VPS and PDC signals and teletext information are also converted. DVB and teletext subtitles can be displayed. When radio stations are converted, the name of the radio station as well as the now and next information are displayed on the screen.



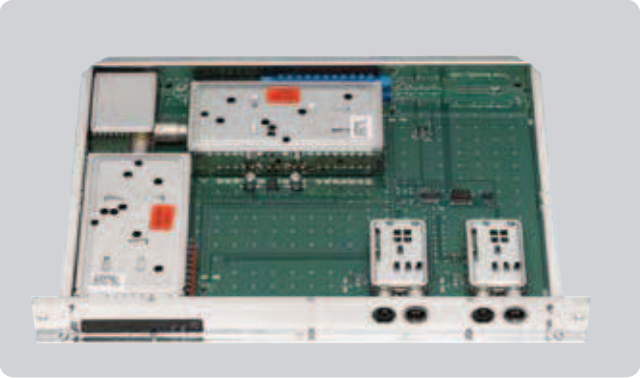
CCDT 2161 modules

Technical data

TYPE		CCDT 2161 Twin COFDM-PAL	CCDT 2163 Twin COFDM-PAL	CCDT 2164 Twin COFDM-PAL	CCDT 2165 Twin COFDM-PAL
Art. No.		**325132**	**325133**	**325134**	**325135**
No. of inputs	Pcs	2	2	2	2
No. of loop-through outputs	Pcs	2	2	2	2
No. of converted channels	Pcs	2	2	2	2
Input frequency range (VHF) (UHF)	MHz MHz	177.5 - 226.5 474.0 - 858.0	177.5 - 226.5 474.0 - 858.0	177.5 - 226.5 474.0 - 858.0	177.5 - 226.5 474.0 - 858.0
No. of carriers		2 k and 8 k	2 k and 8 k	2 k and 8 k	2 k and 8 k
Input symbol rate	norm	EN 300 744	EN 300 744	EN 300 744	EN 300 744
Output channels		A: C 02 - C 04 B: S 03 - S 24 incl. C 05 - C 12	S 03 - S 24 incl. C 05 - C 12	S 21 - S 41	C 21 - C 69

Conversion from Digital Terrestrial to Digital Terrestrial (COFDM – COFDM)

Terrestrial cassettes for conversion of two terrestrial digital signals into two freely selectable channels in the VHF/UHF band. Bandwidth 7/8 MHz switchable.



CCMT 1295 modules

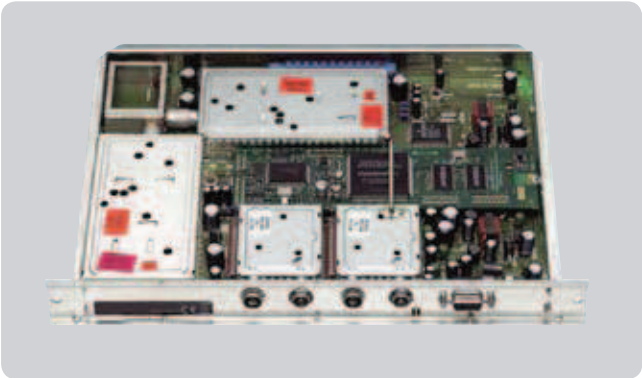
Technical data

TYPE		CCMT 1293 Twin	CCMT 1295 Twin
Art. No.		**325136**	**325137**
No. of inputs	Pcs	2	2
No. of loop-through outputs	Pcs	2	2
No. of converted channels	Pcs	2	2
Input frequency range	MHz	146.0 - 862.0	146.0 - 862.0
Output channels		C 05 - C 12 S 09 - S 16	C 21 - C 69

CSE 3300 Satellite transcoding (Digital)

Transmodulation from Digital SAT to Digital Cable (QPSK – QAM)

These cassettes transmodulate two different QPSK- modulated data streams (SCPC or MCPC) to two QAM modulated data streams. The output level can be set with an analogue antenna measuring instrument. The integrated TPS module serves for data processing of the demodulated transport stream.
This allows service information to be changed (NIT – Network Information Table), data rates increased (stuffing) and individual programs to be deleted from the transport stream, whereby the remaining channels can then be transmitted with bandwidth optimization. Moreover, the Operator ID can be set.



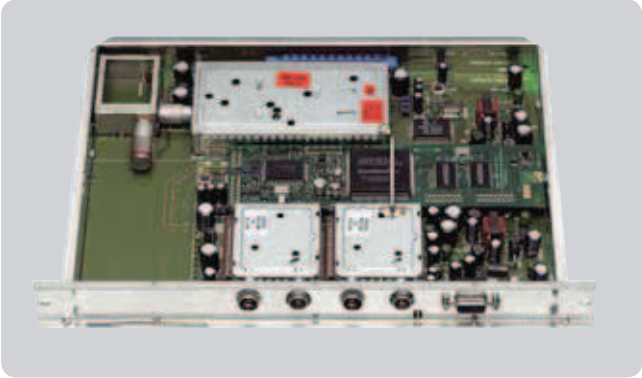
CCS 485 modules

Technical data

TYPE		**CCS 483** QPSK-QAM	**CCS 484** QPSK-QAM	**CCS 485** QPSK-QAM	**CCSM 500** QPSK-QAM	**CCS 510 CI** QPSK-QAM
Art. No.		**325148**	**325149**	**325150**	**325140**	**325151**
No. of inputs	Pcs	2	2	2	2	2
No. of converted channels	Pcs	2	2	2	2	2
Input frequency range	MHz	950 - 2150	950 - 2150	950 - 2150	950 - 2150	950 - 2150
Input symbol rate	Msymb/s	1 - 30	1 - 30	1 - 30	1 - 30	1 - 30
Output symbol rate	MBaud	1 - 7	1 - 7	1 - 7	1 - 7	1 - 7
Modulation schema		QAM 4, 16, 32, 64,128, 256			QAM 4, 16, 32, 64,128, 256	
Software download	via	RS 232	RS 232	RS 232	RS 232	RS 232
Output frequency range	MHz	112 - 306	303 - 466	474 - 858	42 - 860	42 - 860

Multiplexing from Digital SAT to Digital Cable (QPSK – QAM)

Two QPSK modulated free to air satellite signals can be converted in parallel and a new individual QAM transport stream can be generated out of it with these multiplex cassettes.



CSE 39x modules

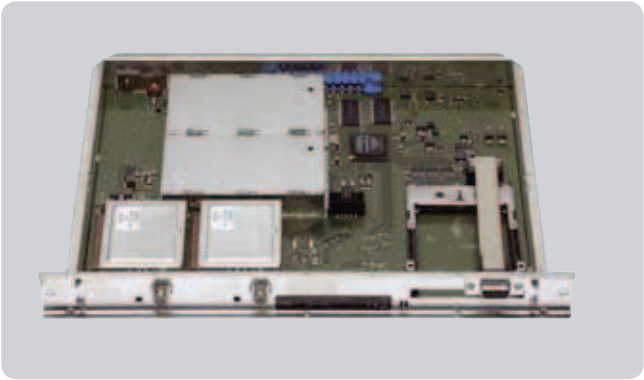
Technical data

TYPE		**CCS 473 MX** QPSK-QAM	**CCS 474 MX** QPSK-QAM	**CCS 475 MX** QPSK-QAM
Art. No.		**325145**	**325146**	**325147**
No. of inputs	Pcs	2	2	2
No. of converted transponders	Pcs	1	1	1
Input frequency range	MHz	950 - 2150	950 - 2150	950 - 2150
Input symbol rate	Msymb/s	1 - 30	1 - 30	1 - 30
Output symbol rate	MBaud	1 - 7	1 - 7	1 - 7
Modulation schema			QAM 4, 16, 32, 64,128, 256	
Software download	via	RS 232	RS 232	RS 232
Output channels	MHz	112 - 306	306 - 466	474 - 858

CSE 3300 Satellite transcoding (HDTV)

Conversion from HDTV Digital to HDTV Digital Cable (DVB-S2 – QAM & DVB-S2 - COFDM)

The cassette mainly converts two digital HDTV satellite signals (DVB-S2) to two digital HDTV cable signals (QAM/COFDM). Moreover these are the interfaces which make this new cassette multifunctional and universal in a complete digital cable network. It commands an ASI input and an ASI output (ASI = Asynchronous serial interface acc. EN 50083-9) as well as a 100 MBit LAN interface (Ethernet). Therewith data streams of the digital signals can be collected or can be fed from external sources for supplying of cable networks.
Additional there is a Common Interface (CI). With it encrypted signals (e.g. Pay TV) can be decoded. Up to 12 channels can be decoded with the smartcard of the provider depending on the Conditional Access Module (CAM). The integrated TPS module serves for data processing of the demodulated transport stream. This allows service information to be changed (NIT – Network Information Table) data rates increased (stuffing) and individual programs to be deleted from the transport stream. Moreover, the Operator ID can be set.

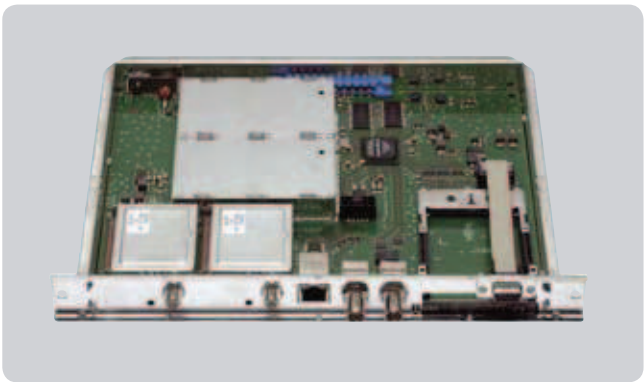


CCS-2 610 module

Technical data

TYPE **Art. No.**		**CCS-2 610 CI** HDTV DVB-S2 - QAM **325152**	**CCS-2 1000** HDTV DVB-S2 - QAM **325153**	**CCS-2 1001** HDTV QPSK-COFDM **325154**
No. of inputs	Pcs	2	2	2
No. of converted transponders	Pcs	2	2	2
Input frequency range	MHz	950 - 2150	950 - 2150	950 - 2150
DVB-S modes	QPSK	1/2, 2/3, 3/4, 5/6, 7/8		
DVB-S2 modes	QPSK	1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10		
DVB-S2 modes	8PSK	3/5, 2/3, 3/4, 5/6, 8/9, 9/10		
Symbol rate DVB-S	QPSK	2 – 45	2 – 45	2 – 45
Symbol rate DVB-S2	QPSK	10 – 30	10 – 30	10 – 30
Symbol rate DVB-S2	8PSK	10 – 31	10 – 31	10 – 31
Output symbol rate	MBuad	1 – 7.5	1 – 7.5	1 – 7.5
Modulation scheme		QAM 4, 16, 32, 64,128, 256		
ASI in/ASI out interface		•	•	•
Ethernet interface		•	•	•
Common Interface		•	•	•
TPS module		•	•	•
Software download	via	RS-232	RS-232	RS-232
Output frequency range/ Channel infrequency	MHz	45 - 862	45 - 862	45 - 862

HDTV



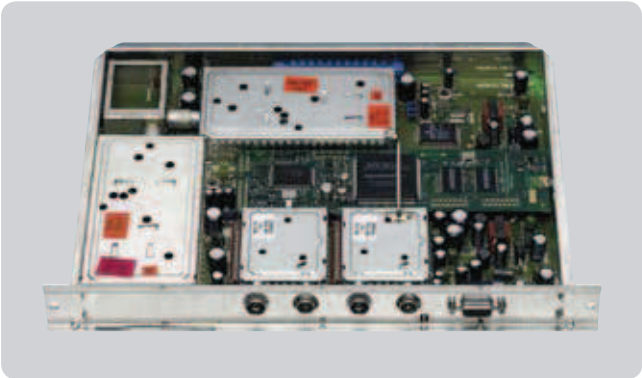
CCS-2 1000 module

Terrestrial conversion (COFDM - QAM)

Conversion from Digital Terrestrial to Digital Cable (COFDM – QAM)

These cassettes transmodulate two different COFDM modulated data streams into two QAM modulated data streams. The output level can be set with an analogue antenna measuring instrument.

The TP module serves for data processing of the demodulated transport stream. This allows service information to be changed (NIT – Network Information Table) data rates increased (Stuffing) and individual programs to be deleted from the transport stream, wherby the remaining channels can then be transmitted with bandwidth optimization. Moreover, the Operator ID (e.g. required for VisAvision) can be set.



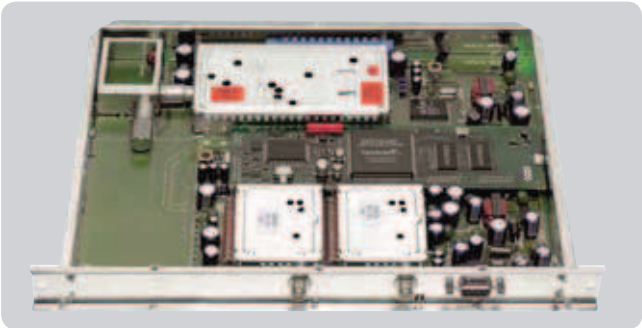
CCT 485 module

Technical data

TYPE		**CCT 485** COFDM-QAM
Art. No.		**325155**
No. of inputs	Pcs	2
No. of converted channels	Pcs	2
Input frequency range (VHF) (UHF)	MHz MHz	177.5 - 226.5 474.0 - 858.0
No. of carriers		2 k and 8 k
Input symbol rate	Msymb/s	acc. to EN 300 744
Output symbol rate	MBaud	1 - 7
Modulation schema		QAM 4, 16, 32, 64,128, 256
Software download	via	RS 232
Output channels	MHz	S 21 - S 41

Multiplexing from Digital Terrestrial to Digital Cable (COFDM – QAM)

Two COFDM modulated free to air terrestrial signals can be converted in parallel and a new individual transport stream can be generated out of it with these multiplex cassettes.



CCT 47x modules

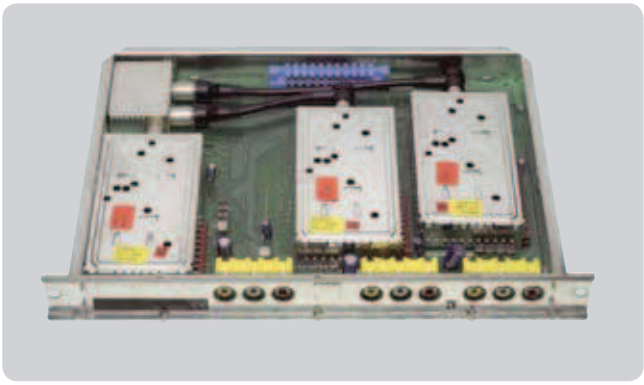
Technical data

TYPE		**CCT 473** COFDM-QAM	**CCT 474** COFDM-QAM	**CCT 475** COFDM-QAM
Art. No.		**325160**	**325161**	**325162**
No. of inputs	Pcs	2	2	2
No. of converted channels	Pcs	2	2	2
No. of multiplexes	Pcs	2	2	2
Input frequency range (VHF) (UHF)	MHz MHz	177.5 - 226.5 474.0 - 858.0	177.5 - 226.5 474.0 - 858.0	177.5 - 226.5 474.0 - 858.0
No. of carriers		2 k and 8 k	2 k and 8 k	2 k and 8 k
Input symbol rate	Msymb/s	acc. to EN 300 744	acc. to EN 300 744	acc. to EN 300 744
Output symbol rate	MBaud	1 - 7	1 - 7	1 - 7
Modulation schema		QAM 4, 16, 32, 64,128, 256	QAM 4, 16, 32, 64,128, 256	QAM 4, 16, 32, 64,128, 256
Software download	via	RS 232	RS 232	RS 232
Output channels	MHz	S 02 - S 21 incl. C 05 - C 12	S 21 - S 41	C 21 - C 69

CSE 3300 AV signal conversion

AV Cassette

AV cassettes for input of AV signals via cinch sockets (e.g. video recorder, camera, DVD player).
Up to three modulators can be installed.



CCAV 30x module

Technical data

TYPE Art. No.		CCAV 310 AV 3 channel mono 325120	CCRM 312 AV 3 channel mono 325125	CCAV 300 AV 3 channel mono 325129
No. of inputs	Pcs	3 (per input) 1 x video, 2 x audio	3 (per input) 1 x video, 2 x audio	3 (per input) 1 x video, 2 x audio
Sound output		mono	mono	mono
Input frequency range	Hz/MHz	20 - 5	20 - 5	20 - 5
Output channels		S 03 - S 24 incl. C 05 - C12 (with CCM 313 modulator) S 21 - S 24 (with CCM 314 modulator) C21 - C69 (with CCM 315 modulator)		
Delivery status		- without modulators		

Modulator modules convert an audio/video signal to a TV channel in the VHF/UHF band for distribution in a community cable system.

- Full-band high-quality modulator
- Adjacent channel operation
- Multi standard
- Mono sound / A2 stereo / Nicam available
- Multi language menu

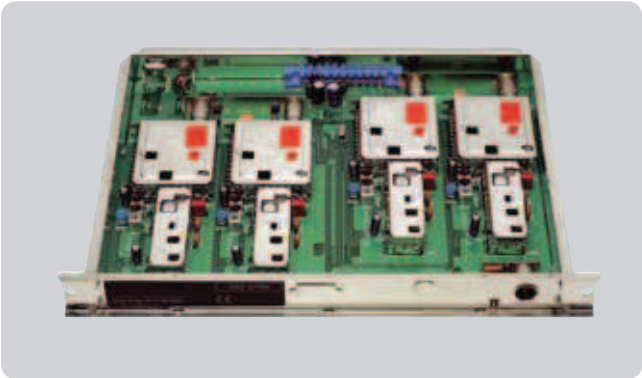
CCM 31x and CCM 32x module

Technical data

TYPE Art. No.		CCM 313 mono 325121	CCM 314 mono 325122	CCM 315 mono 325123	CCM 323 stereo 325126	CCM 324 stereo 325127	CCM 325 stereo 325128
Modulator type							
No. of inputs	Pcs						
No. of converted channels	Pcs						
Output channels		S 03 - S 24 incl. C 05 - C 12	S 21 - S 41	C 21 - C 69	S 03 - S 24 incl. C 05 - C 12	S 21 - S 41	C 21 - C 69
Remarks		- for use together with CCAV 310 AV			- for use together with CCAV 312 AV		

Terrestrial FM Cassette

Terrestrial FM cassette for conversion of four freely selectable FM stations to the 87.5 – 108 MHz frequency range.



CCTF 326 module

Technical data

TYPE		CCTF 326
Art. No.		**325176**
No. of inputs	Pcs	1
No. of FM converter	Pcs	4
Input level range	dBµV	10 - 95
Input frequency range	MHz	87.5 - 108
Output frequency range	MHz	87.5 - 108
Min. channel grid between converted FM stations	kHz	300

Terrestrial FM Amplifier

FM amplifier for wideband amplification of 87.5 – 108 MHz FM range. Six manually adjustable attenuator filters provide for attenuation of strong FM stations.

CSE 325 module

Technical data

TYPE		CCA 325
Art. No.		**325177**
No. of inputs	Pcs	1
Frequency range	MHz	87.5 - 108
Gain	dB	43
Noise figure	dB	6 - 9
No. of adjustable filters		6
FM transmitter reduction per filter	dB	14 - 17

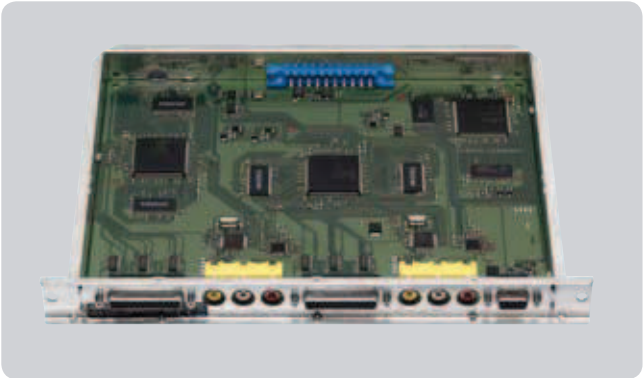
CSE 3300 AV conversion analogue to digital

Conversion from AV analogue to an MPEG transport stream

The twin encoder cassette CCE 200 converts two analogue audio video signals into two elementary transport streams. The cassette supports the format D1 (720 x 576 pixels) with data rates of 1.5 Mbit/s to 6 Mbit/s. A 16-bit stereo sound channel is already included in this data rate.
The audio encoder works with MPEG1 Layer II. The audio bit rates (256fs, 320fs and 384fs) and the AUDIO ES Modes Stereo, Joint Stereo Dual and Mono are adjustable.
The audio input signal of the stereo A/D converter can be adapted to the particular situation with an adjustable amplifier. The audio sample rate (fs) is 48 kHz.

The transport stream according to ISO/IEC 13818 is at the output via SPI interface with an8-bit TS interface with clock and frame-sync signal.

The HDE 200 cassette can be combined with the quadruple converters HDM 203/204/205 QMX.



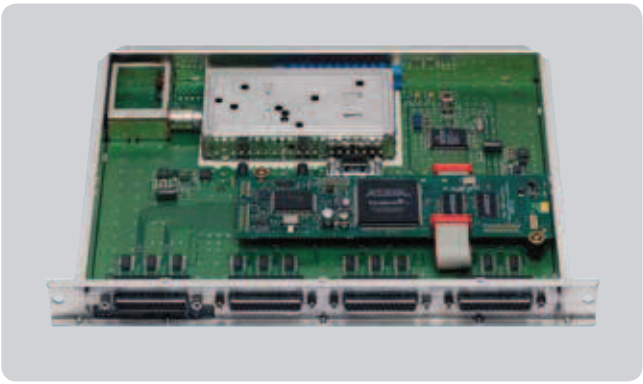
CCE 200 module

Technical data

TYPE	CCE 200
Art. No.	**325165**

Quadruple conversion from an MPEG transport stream to Digital Cable (QAM)

The cassette merges four parallel elementary data streams to one elementary data stream and converts it to a QAM modulated carrier. In this connection it is about a static multiplexing of DVB data streams.
Channels can be deleted from the data stream at data input A. Channels which are fed at the inputs B, C and D can be selected and added from the data streams. The available information in the data stream (e.g. time information TDT, event information EIT) are passed unmodified from input A to the output.



CCQM 20x modules

Technical data

TYPE		CCQM 203 Quad multiplex	CCQM 204 Quad multiplex	CCQM 205 Quad multiplex	CCSF 2360 QPSK to FM
Art. No.		**325170**	**325171**	**325172**	**325175**
No. of transport stream inputs via SPI	Pcs	4	4	4	
Modulation scheme			QAM 4, 16, 32, 64, 128, 256		
Output symbol rate	Msymb/s	1 - 7	1 - 7	1 - 7	
Output channels		S 02 - S 21 incl. C 05 - C 12	S 21 - S 41	C 21 - C 69	87.5 - 108

Monitoring Cassette CCMC 6000

The frequency range from 47 – 862 MHz can be monitored in the wideband system with the CCMC 6000 monitoring cassette. The following parameters are checked: Analogue TV video carrier (AM), analogue TV audio carrier (FM), analogue radio audio carrier (FM) as well as the digital QAM signal. The level as well as the synchronising pulse is evaluated for the analogue TV video carrier; the station idents. can be read out via the VPS signal. Stations without Idents. can be edited subsequently on a PC. This also applies for corresponding radio stations. The analogue TV video carrier is checked continuously by means of level evaluation. In the radio range, in addition to level monitoring, the station names can also be evaluated using the RDS Ident. Stations without RDS Ident. can also be edited subsequently. The level, as well the bit rate error, is measured for digital TV output signals in order to obtain error-free indication of a signal failure. All DC voltages from the power supply are also measured and evaluated. A search function also allows access to all station parameters for every TV viewer via an info channel. This can also be fed into the system over an integrated FM modulator.

CCMC 6000 module

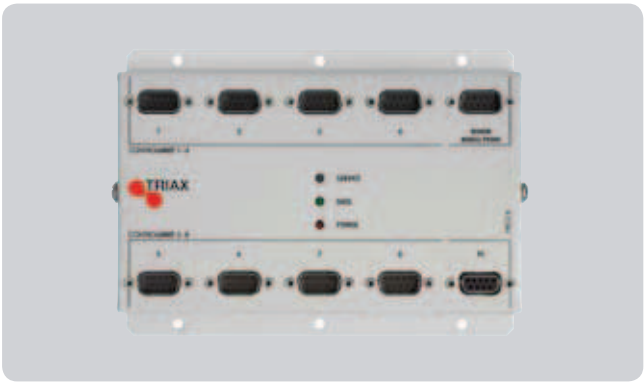
The CCMC 6000 has the following interfaces: Signal input, measuring output for connection of a measuring instrument, emergency power supply input, RS-232 interface as well as one audio and video output.

Technical data

TYPE	CCMC 6000
Art. No.	325178

Management Unit CCRC 8 incl. PC Software PSW 1000

The CCRC 8 allows connection of 1 PC, 1 analogue or GSM modem as well as 8 head-end station systems or 7 headend station systems and 1 monitoring cassette CCMC 6000.
The system allows remote configuration via the analogue or GSM modem. The service data reported in combination with the CCMC 6000 monitoring unit is provided automatically by the RCU 8 management unit as SMS or facsimile.
The PSW 1000 software also supplied requires the following system conditions for the PC: 486, 5 MB capacity on hard disk, operating system Windows 95/98/ME/XP/2000. With this software, the headend station systems CSE 3312, CSE 3308 and CSE 3319 can be preprogrammed using the RS-232 interface contained in the control unit. This can also be accomplished from a remote location using an analogue or GSM modem. Moreover, errors reported by the CCMC 6000 monitoring cassette are displayed.



CCRC 8 module

Technical data

TYPE	CCRC 8
Art. No.	325179

CSE 3300 accessories

CCRS 1000 Remote and control software

Art. No. 325182

This software allows the head-end station systems STC 332, STC 316, STC 1200 and STR 19-8 to be pre-programmed via the RS-232 interface contained in the control stage. This can also be accomplished from another location with an analogue or GSM modem. The set also includes a special control unit required for operation of the software.

System conditions PC: 486, 5 MB space on hard disk, operating system Windows 95/98/ME/XP/2000.

Remote and control software

CCLA adaptor for CCRC 8 to LAN

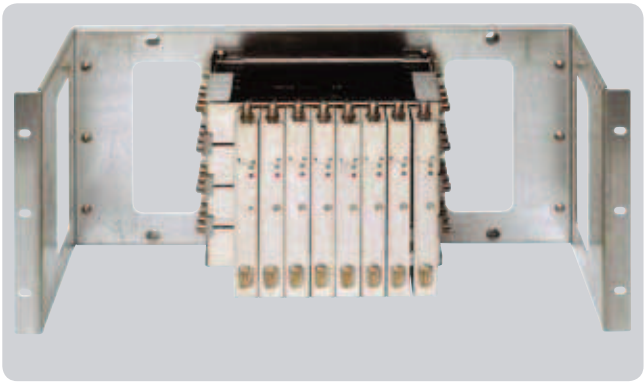
Art. No. 325180

CCLA adaptor unit

Backup System CCB 16/8

Art. No. 325181

The backup system is suitable for control of backup cassettes, which can be switched on in the system. With the backup system, up to 16 different satellite levels can be switched on, on up to 8 different backup cassettes.
This is required when a cassette in use fails and requires temporary replacement by a backup cassette. With this system, only one backup cassette is required per type.



CCB 16/8 backup system

This system is controlled by the PRCU 8 remote control unit. The system includes one mounting bracket suitable for 19” rack as well as wall installation, one data cable for connection to the PRCU 8 and the backup system with 16 inputs with 16 loop outputs for transfer of the signals to the headend station systems and 8 switchable outputs to the backup cassettes. The CCB 16/8 is 4 HU high.