

Semi modular headends
for MATV and SMATV systems

K SERIES

A digital headend solution



The K Series system

K Series is designed to process digital and analogue signals in SMATV systems such as:

- **MULTI DWELLING UNITS**
- **ESTATES**
- **HOTELS**

Design targets:

- Easy installation and maintenance
- Flexibility in unit/headend composition
- Solid and inexpensive without compromising performance
- Ready for future product ranges
- In compliance with all European and international regulations in force

Main features:

- Standard DIN bar fixing
- Single voltage feed (12V, negative)
- Solid mechanical structure
- "F" connectors with quick fit interconnection bridges
- Adjacent channel distribution is possible due to the channel filters selectivity together with the vestigial sideband (VSB) modulators
- Channel filters have a uniform gain (around 10dB) both in VHF and UHF and a 90dB μ V output level, guaranteeing an optimum overall picture quality even with weak signals
- New range of products for the reception of free-to-air digital channels and for the distribution of digital signals with QPSK QAM conversion
- 19 inch rack installation possible



19 inch rack installation

Single channel modules

Standard wall mount



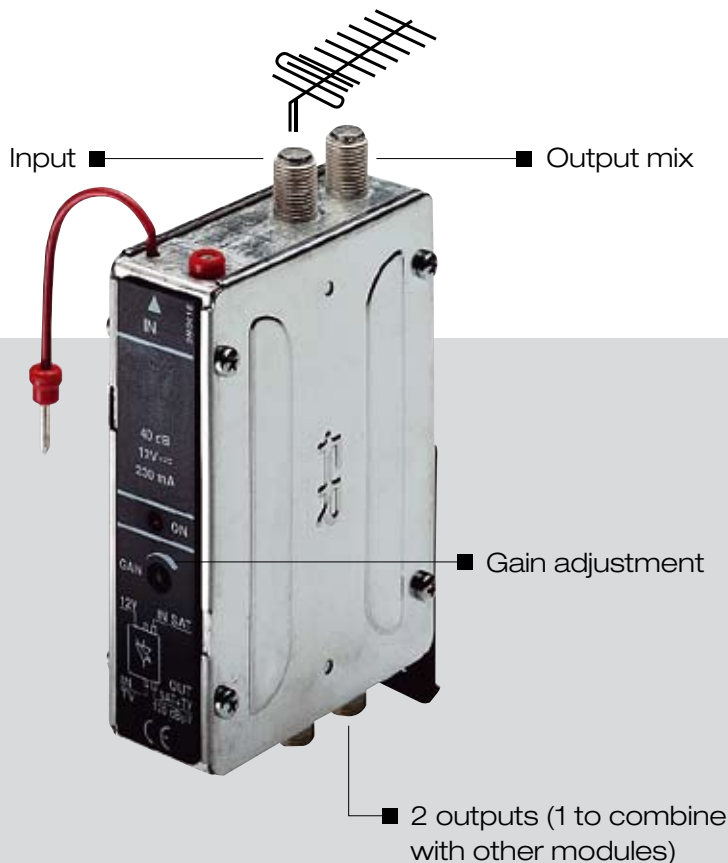
The heart of the system:
modules

TERRESTRIAL PROCESSING

KF, K120, K120A

Single channel modules which integrate a filter and amplifier to enable the user to process each channel independently.

The product channel is set in the factory to guarantee the correct specifications.

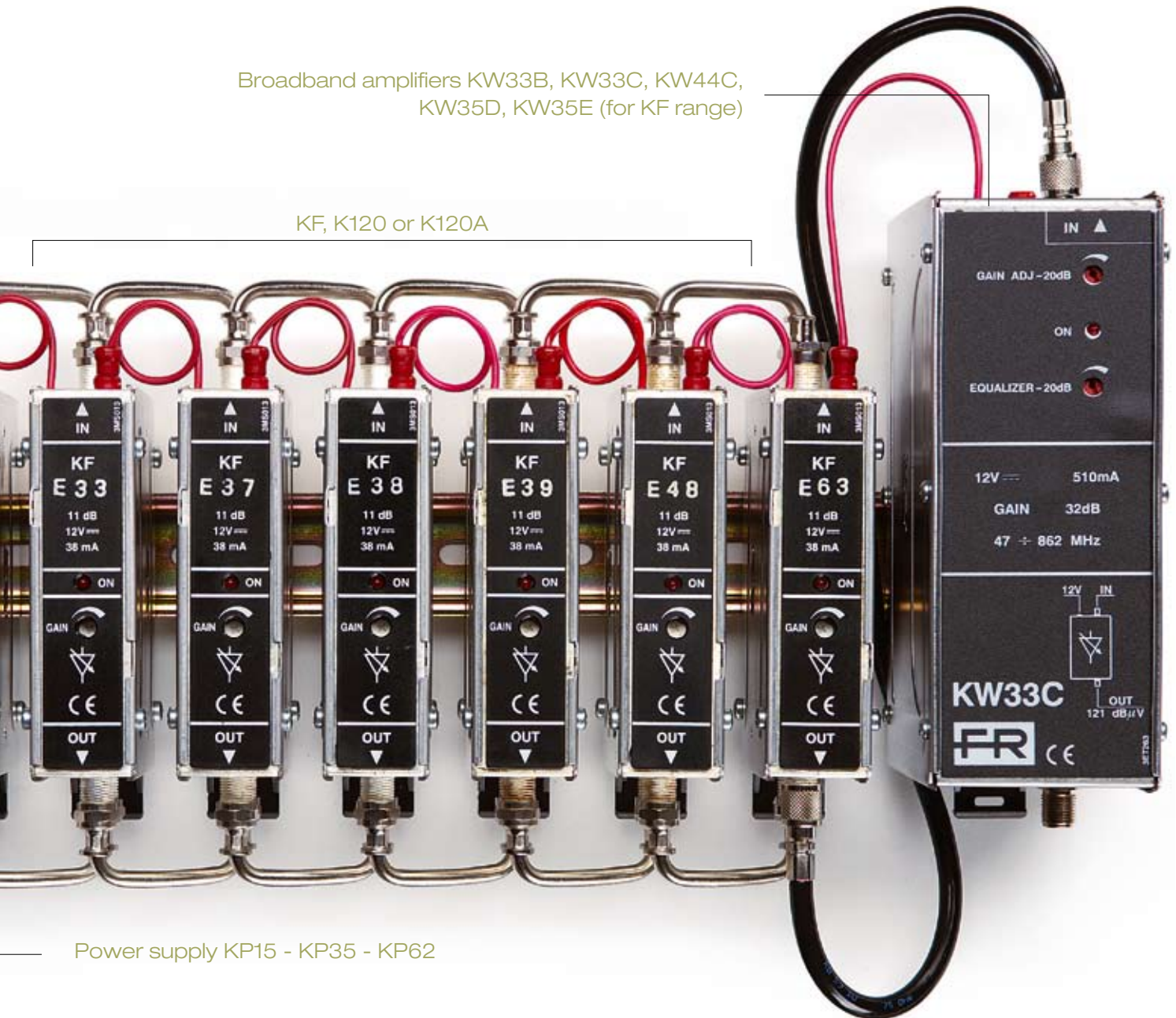


TEMPERATURE COMPENSATION SYSTEM

- KF, K120 and K120A are fitted with a temperature compensation system.
- This system enables the product to continue functioning correctly during temperature fluctuations.
- This system is beneficial in order to avoid interference when adjacent channel filters are installed. This avoids distortion of the signal.

Broadband amplifiers KW33B, KW33C, KW44C, KW35D, KW35E (for KF range)

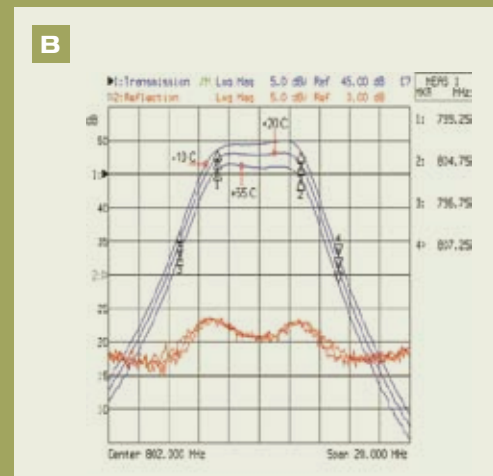
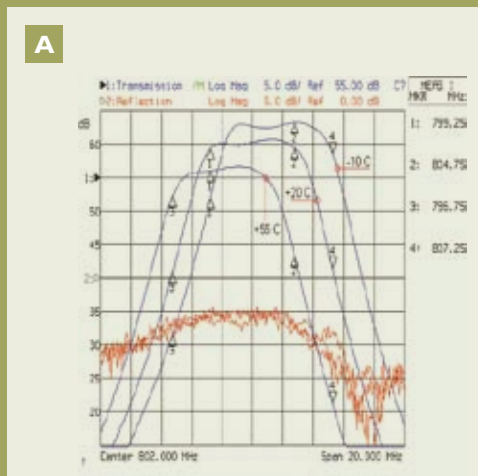
KF, K120 or K120A



Power supply KP15 - KP35 - KP62

A: Other filters without a temperature compensation system

B: Fracarro filters with a temperature compensation system



The heart of the system: general key points

Compatible with digital television

- Fully compliant with digital terrestrial television
- Designed for adjacent channel processing

Automatic gain control on K120A

- To ensure the signal output level if the off air signal fluctuates

Performance guaranteed

- Die cast housing and temperature compensation system guarantees the performance of the system up to 55°C

High output level and high gain

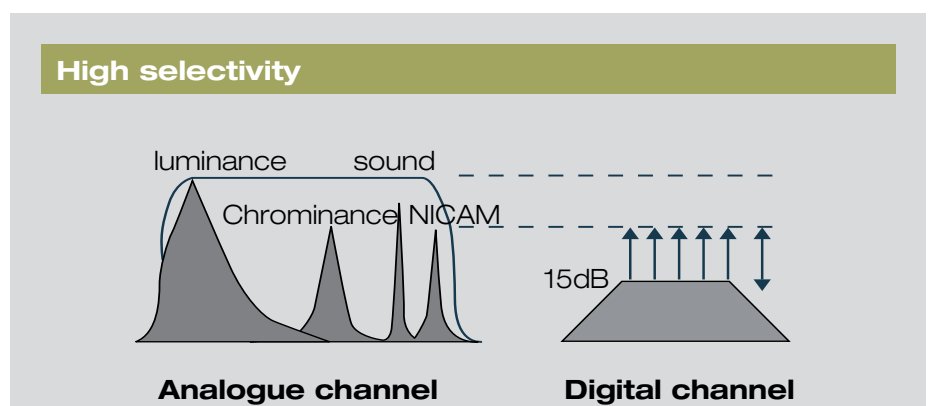
Highly flexible solution

- Interstage amplifier technology

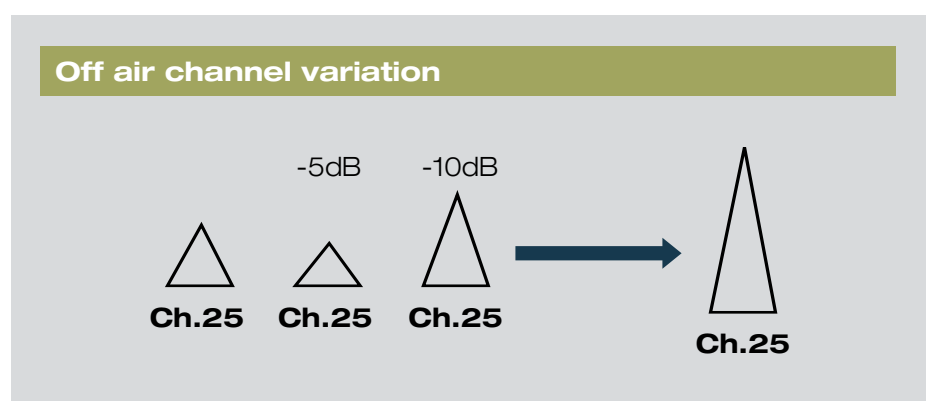
High selectivity

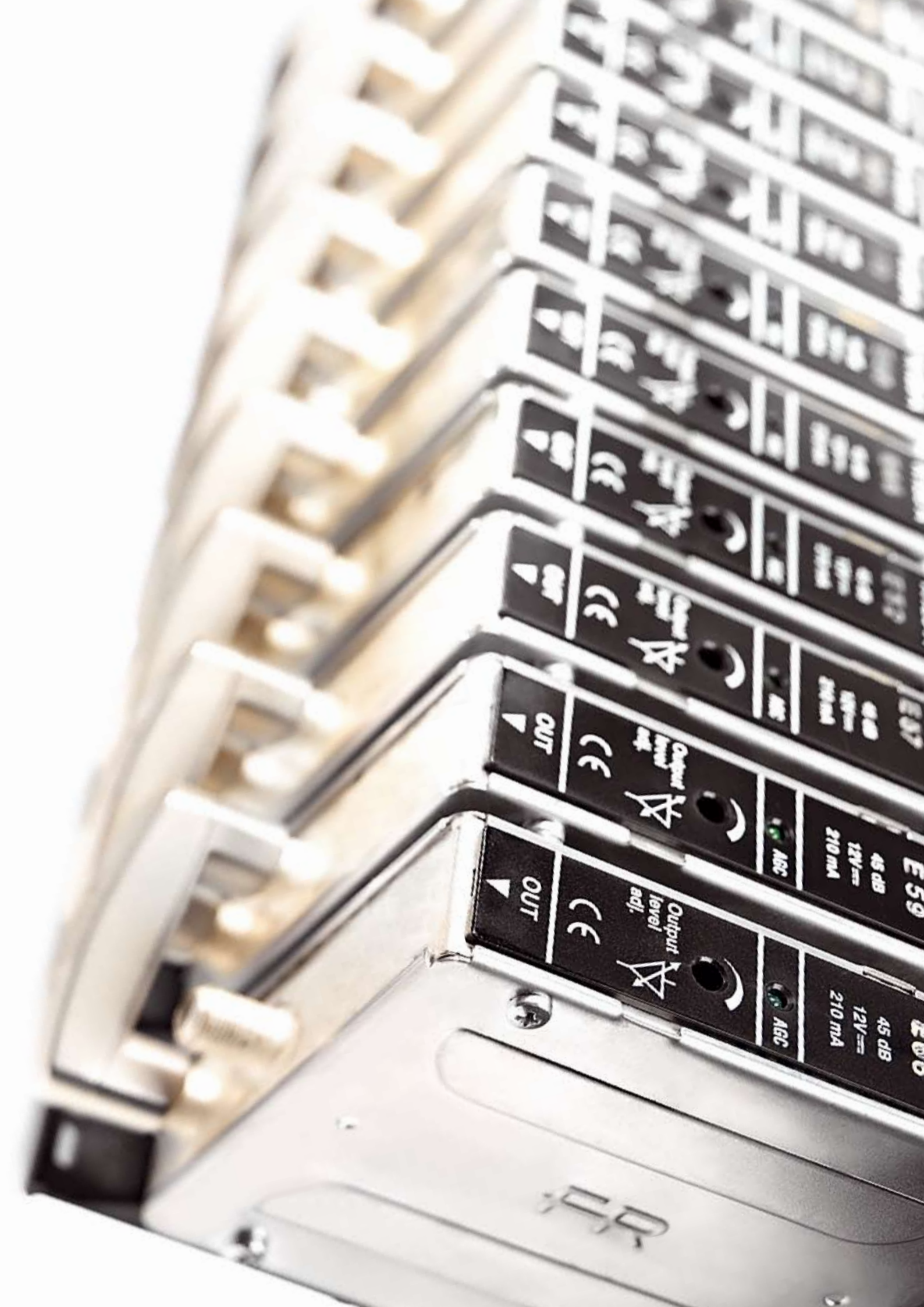
- To compensate up to 15dB between 2 adjacent channels

To compensate level differences up to 15dB between 2 adjacent channels



The output signal remains the same if the input level fluctuates





OUT

CE

Output level adj.



AGC

45 dB
12V
210 mA

E 59

OUT

CE

Output level adj.



AGC

45 dB
12V
210 mA

E 57

OUT

CE

Output level adj.



AGC

45 dB
12V
210 mA

E 57

OUT

CE

Output level adj.



AGC

45 dB
12V
210 mA

E 57

OUT

CE

Output level adj.



AGC

45 dB
12V
210 mA

E 57

OUT

CE

Output level adj.



AGC

45 dB
12V
210 mA

E 57

OUT

CE

Output level adj.



AGC

45 dB
12V
210 mA

E 57

Digital solution **KCP** **TERRESTRIAL DIGITAL PROCESSOR**

To convert digital or analogue channels. This product can also be used as a filter with the same channel at the input and output

KEY POINTS

Highly flexible

- This product has a VHF and UHF input and a full band agile output

Digitally compliant

- Enables the conversion of digital channels over the whole bandwidth



Power supply
KP15 - KP35 - KP62



KDTR **DTT PROCESSOR**

To receive free-to-air programs transmitted with COFDM modulation. It receives a DTT multiplex and from that extracts the audio and video signals of the selected program. An analogue RF channel is then created and distributed to all the TV sets throughout the TV distribution network.

KEY POINTS

- Full band modulator distributes signals from 47-862MHz
- Vestigial side band modulator allows adjacent channel distribution
- Software easily upgraded
- Suitable for the reception of hierarchy and non hierarchy COFDM multiplex
- RCA connectors with audio/video signal available on all versions

Broadband amplifiers KW33B, KW33C, KW44C, KW35D, KW35E



KDSR
DIGITAL PROCESSOR

To receive free-to-air programs transmitted with QPSK modulation. It receives a QPSK transponder and from that extracts the audio and video signals of the selected program. An analogue RF channel is then created and distributed to all the TV sets throughout the TV distribution network.

KEY POINTS

- Full band modulator distributes signals from 47-862MHz
- Vestigial side band modulator allows adjacent channel distriution
- Software easily upgraded
- LNB power supply, 14/18V 0/22KHz, DiSEqC 1.0
- RCA connectors with audio/video signal available on all versions

The brain of the headend

KTLC

KTLC monitors the headend and sends an alarm via the telecom network in case of failure

KEY POINTS

Improved service for your customer

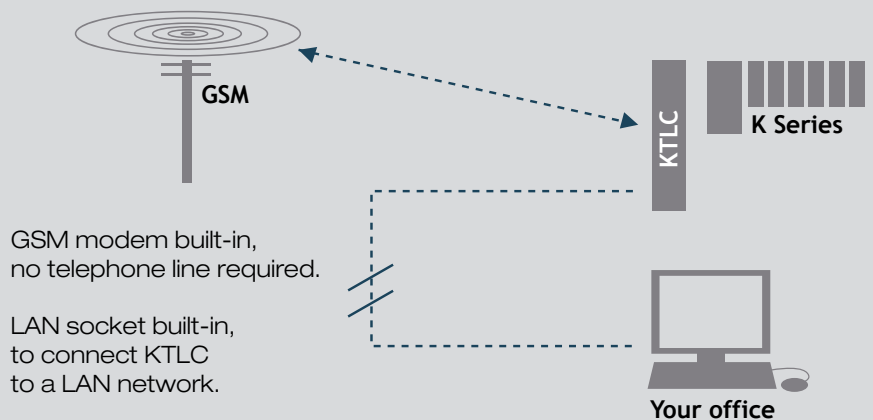
- KTLC device simulates the headend within your office

Reduced maintenance costs

- No more wasted site visits as the KTLC helps you determine the failure from your office



Off air channel variation



KTLC

K SERIES



Around the system: modules

KDFV - KDFU



KDFV - KDFU

QPSK DIGITAL RECEIVERS

QPSK digital satellite PAL receivers to receive all free-to-air satellite channels. Available in three different versions:

- KDFU satellite receiver with built in UHF modulator.
- KDFV satellite receiver with built in VHF modulator.
- KDFAV satellite receiver without a modulator. A/V output to connect external modulators. Stereo audio available.

It is possible to receive SCPC programmes. Automatic PID updating.

KDTS



KDTS

TERRESTRIAL DIGITAL TRANSMODULATOR

KDTS is a QPSK-QAM transmodulator. The QAM channels are available for customers via QAM set top boxes.

KEY POINTS

Up to 6 services from one channel:

- QAM transmodulator able to process up to 6 services coming from one satellite.

Compatible with all European multiplex standards:

- KDTS is compliant with all data rates from 16 to 256QAM.

KCMV - KCMU



KCMV - KCMU

MODULATORS

To modulate any audio-video channel into VHF or UHF. Sources can be CCTV, DVD, VCR, etc. Mono, stereo and multistandard versions available.

KEY POINTS

Extra programs without disrupting the existing system:

- Saw filter + tracking filter: high quality modulation with a spurious >65dB.

KIF



KIF

SATELLITE DIGITAL CONVERSION, MAKE YOUR OWN BOUQUET

Single IF channel converter. For headends up to 30 channels.

KEY POINTS

Easy to install and maintain:

- One converter per channel. Add/replace modules quickly.

High picture quality guaranteed:

- KIF has an excellent conversion phase noise for high BER.

Available now for the biggest SMATV systems:

- High output level per channel up to 95dB μ V. High gain and high output level launch amplifier (95dB μ V).

Around the system: accessories

CABINETS



KA600 - KA800

K SERIES CABINETS

Cabinets specially designed for easy installation and maintenance of the MATV/SMATV headend.

It has a perforated back for fastening the DIN bar.

Thickness: 1.5mm

Single structure (sides plus back) to be fixed at the back; door with lock.

PROGRAMMING UNIT



TPE

PROGRAMMING UNIT FOR KDSR AND KDTR

Programming unit with numeric keypad and graphic display.

The TPE automatically recognises whether the user is programming an earlier K series module and then automatically emulates the KTP programmer.

BRIDGES

KRF



KPN



KPR



KRF - KPN - KPR

PLUG-IN "F" BRIDGES

These are shielded quick snap-in connectors.

For connections between an active splitter and receiver modules as well as between the active splitter and the self-mixing line of the output signal.

Item code	Dimensions
KPR37	length 37mm
KPN42	length 42mm
KPN51	length 51mm
KPR41	length 41mm
KPR52	length 52mm

PRE-AMPLIFIERS



MP SERIES

MP.. AF SERIES BROADBAND PRE-AMPLIFIERS, "F" CONNECTOR

Metal housing. 1 transistor. V.S.W.R. <2.

With socket, plug and 30cm cable with D.C. plug. Input R.F. only.

Powered via output connector or D.C. plug. 1 female input - 1 male output.

Item code	Band	Gain dB
MP04AF	4	17
MP05AF	5	14
MP45AF	UHF	15
MP13AF	VHF	20

Single channel amplifier

Item code	Gain (adj.) dB	Selectivity				Max. output level dB μ V	Noise figure dB	Channels	Max. power consumption mA
		PAn-1	PAn-2	PVn+2	PVn+2				
KF/...	9 (45)	35	5	9	35	93	7	E2 to E4	20 @ 12V
	9 (45)	-	-	-	-	90	4	FM	20 @ 12V
	9 (45)	45	5	10	42	95	9	E5 to E12	20 @ 12V
	7 (30)	40	5	10	42	95	10	S11 to S20	20 @ 12V
	11 (35)	42	10	16	46	95	10	S21 to S38	38 @ 12V
	11 (35)	42	10	16	46	95	10	E21 to E69	38 @ 12V

Item code	Gain (adj.) dB	Selectivity				Max. output level dB μ V	Noise figure dB	Channels	Max. power consumption mA
		PAn-1	PAn-2	PVn+2	PVn+2				
K120/...	45 (40)	35	5	9	35	121	8	E2 to E4	180 @ 12V
	40 (40)	-	-	-	-	112	5	FM	200 @ 12V
	45 (40)	40	5	10	44	120	9	S1 to S10	180 @ 12V
	45 (40)	40	5	10	44	120	9	E5 to E12	180 @ 12V
	45 (30)	35	5	10	40	120	10	S11 to S20	200 @ 12V
	45 (30)	42	10	16	46	120	9	S21 to S38	200 @ 12V
	45 (30)	42	10	16	46	120	9	S39 to S41	200 @ 12V
	45 (30)	42	10	16	46	120	9	E21 to E69	200 @ 12V

Item code	Max. input level dB μ V	Selectivity Standard B/G Italia (1)		Output level adj. dB μ V	ACC dynamics (Max.) dB	Noise figure dB	Channels	Max. power consumption mA
		PAn-1	PVn+1					
K120A/...	90	5	9	110 to 120	25	8	E2 to E4	210 @ 12V
	95	5	10	110 to 120	30	9	E5 to E12	210 @ 12V
	95	12	18	110 to 120	30	10	E21 to E69	210 @ 12V

DAB amplifiers

Item code	Gain (adj.) dB	Input return loss dB	Output return loss dB	Max. output level dB μ V	Bandwidth MHz	Max. power consumption mA
KF/DAB	14 (45)	10	10	100	217 to 230	20 @ 12V
KF/DAB1	12 (45)	10	10	100	195 to 223	20 @ 12V

Amplifiers

Item code	Input frequency MHz	Gain (adj.) dB	Max. output level dB μ V	Noise figure dB	Max. power consumption mA
KW33B	47 to 862	34 (20)	116	8	300 @ 12V
KW33C	47 to 862	32 (20)	120	9	510 @ 12V
KW44C	47 to 862	44 (20)	120	8	550 @ 12V
KW35D	47 to 862	35 (20)	125	5	640 @ 12V
KW35E	5 to 30 47 to 862	35 (20)	129	9	830 @ 12V

(1) Possible to adjust the amplifiers to a different standard on request.

Power supplies

Item code	Mains Vac	Power consumption W	Output voltage V	Max. current A
KP15	187 to 264Vac, 50-60Hz	23	12	1.5
KP35	187 to 264Vac, 50-60Hz	55	12	3.5
KP62	187 to 264Vac, 50-60Hz	88	12	6.2

Band amplifiers

Item code	Bandwidth MHz	Gain (adj.) dB	Return loss input dB	Return loss output dB	Max. output level dB μ V	Noise figure dB	Max. power consumption mA
KFB3	174-240	30 (20)	10	10	100	5	100 @ 12V
KFB4	470-590	13 (20)	10	15	100	4	130 @ 12V
KFB5	606-862	11 (20)	10	15	100	4	130 @ 12V
KFB5/...	start channel on request	11 (20)	10	15	100	4	130 @ 12V
KFBU	470-862	30 (20)	10	10	104	5	101 @ 12V

QPSK receivers with DSB modulation

Item code	Input frequency MHz	LNB power supply	Audio	Output frequency MHz	Max. output level dB μ V	Standard	Modulation	Max. power consumption mA
KDFV	950-2150	0/14V	mono	170-300	90	PAL B/IDK, SECAM L	DSB	660
KDFU	950-2150	0/14V	mono	470-862	90	PAL G/IDK, SECAM L	DSB	660
KDFAV	950-2150	0/14V	A/V outputs					660

QPSK receivers with VSB modulation

Item code	Input frequency MHz	LNB power supply	Audio	Output frequency MHz	Max. output level dB μ V	Standard	Modulation	Max. power consumption mA
KDSR	950-2150	0/14/18V 0/22KHZ DiSEqC	mono	47-862	90	PAL B/G	VSB	1010
KDSR-S			stereo	47-862	90	PAL B/G	VSB	1060
KDSR-M			mono	47-862	90	Multistandard	VSB	1010
KDSR-AV			A/V outputs					670

COFDM receivers with VSB modulation

Item code	Input frequency MHz	Input DTT mode	Audio	Output frequency MHz	Max. output level dB μ V	Standard	Modulation	Max. power consumption mA
KDTR	174-230 470-862	2K, 8K Hierarchy, not Hierarchy	mono	47-862	90	PAL B/G	VSB	670
KDTR-S			stereo	47-862	90	PAL B/G	VSB	700
KDTR-M			mono	47-862	90	Multistandard	VSB	670
KDTR-AV			A/V outputs					330

KIF Single IF channel convertor

Item code	Input frequency MHz	Output frequency MHz	Input level dB μ V	Max. output level dB μ V	Max. power consumption mA
KIF	950 to 2150	950 to 2150	47 to 77	80 to 95	280 @ 12V

KCP digital channel processor

Item code	Input frequency MHz	Input signal	Processing	Output frequency MHz	Max. output level dB μ V	Modulation	Max. power consumption mA
KCP	174-230, 470-862	digital or analogue	Double IF conversion	118-862	85	VSB	430

KTLC headend remote control

Item code	Input GSM frequency MHz	Output protocol	Output connector	Control of the KTLC	Microprocessor and memory	Operating system	Max. power consumption mA
KTLC	900/1800	RS232	6 x RJ45 connectors to plug in up to 12 devices	interactive menu built-in	ARM7 Ram: 32 Mbyte Flash memory: 8 Megabyte	Linux	950

KDTS QAM transmodulator

Item code	Input frequency MHz	Input symbol rate Mbaud	Output frequency MHz	Output standard	Max. output level dB μ V	Modulation	Max. power consumption mA
KDTS/ VL-C2	950-2150	1 to 6.9	246 - 446	QAM 16 to QAM 128 according to input standard	90	VSB	550

KCMX modulator

Item code	Standard	Audio input	Video input	Output frequency MHz	Output channels	Max. output level dB μ V	C/N channel N%:2dB	Max. power consumption mA
KCMV	PAL B/G mono	500mVrms/10k	1Vpp/75 Ohm	174-382	E5-S30	90	66	350 @ 12V
KCMV/S	PAL B/G stereo	500mVrms/10k	1Vpp/75 Ohm	174-382	E5-S30	90	66	450 @ 12V
KCMV/M	Multistandard NHIDKL	500mVrms/10k	1Vpp/75 Ohm	174-382	E5-S30	90	66	350 @ 12V
KCMU	PAL B/G mono	500mVrms/10k	1Vpp/75 Ohm	470-862	E21-E69	90	65	330 @ 12V
KCMU/S	PAL B/G stereo	500mVrms/10k	1Vpp/75 Ohm	470-862	E21-E69	90	65	440 @ 12V
KCMU/M	Multistandard NHIDKL	500mVrms/10k	1Vpp/75 Ohm	470-862	E21-E69	90	65	330 @ 12V

SAT amplifier + TV mixer

Item code	Input frequency MHz	Gain (adj.) dB		Max. output level dB μ V	Noise figure	Max. power consumption mA
		950MHz	2150MHz			
KX125	950-2150	38 (20)	44 (20)	125	6	310 @ 12V
	47-862	-1	-1	-	-	
KX125NT	950-2150	35 (20)	35 (20)	125	6	280 @ 12V
	47-862	-1	-1	-	-	
KX125E	950-2150	38 (20)	44 (20)	125	6	310 @ 12V
	47-862	-1	-1	-	-	

With 12V available in the SAT input to feed an LNB

Transponder amplified selective filter

Item code	Input frequency MHz	Gain (adj.) dB	Bandwidth MHz	Output level dB μ V	Max. power consumption mA
KFT/...	950 - 2150	18 (20)	33	100	105 @ 12V

