johansson

since 1962

UNITRON GROUP

CATALOGUE 2018-2019

English version

In today's fast changing market, you need an **experienced** and **flexible** partner to make it all happen.

The technology market keeps moving forward. So does Unitron, with a range of over 250 telecommunication, multimedia and IoT solutions. Currently selling in more than 70 countries, we reach tens of millions of TV viewers on a daily basis. Perhaps even you?

In this **Johansson** catalogue, we present you our new Digital Modular Headend, Profiler Revolution range, digital SCR Multiswitches and LTE(5G)-protected TV accessories. With this broad range, we are highly motivated to provide supreme TV-experiences all over the world. 100% of our customers* agree with the high quality level of our products, that's why they deserve our quality label.

Elisabeth Lamaire & Philippe Lamaire
Managing Directors

UNITRON GROUP

EXCELLENT PRODUCT RATING

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*According to satisfaction survey conducted with Johansson customers in 2017, 2016, 2015 and 2014.

All specifications in this catalogue are subject to change without notice.

Digital Modular Headends

Unitron is proud to present you the newest Johansson range of Digital Modular Headends. You can use them in all your projects, thanks to their flexible configuration. They are compatible with all platforms: satellite, cable, terrestrial, IP and HDMI. With the new Remote Management Unit, control, monitoring and alarming (e-mail notifications) is possible. Our newest Digital Modular Headend consists of multiple rack-mountable modules and accessories.

- Satellite module - ProFlex (ref. 5500)
- HDMI module - ProHDMI (ref. 5520-5530-5531)
- Cable and Terrestrial module - ProCAT (ref. 5510)
- Remote Management Unit - RMU (ref. 5951)
- AV-modules
- Accessories

Our professional Digital Modular Headends have already been sold in more than 50 countries worldwide. 100% of our customers agree on the high quality level of our products. This Headend will make your hospitality solutions more successful. Our plug-and-play Headends distribute signals, in all types of buildings, over RF and IP networks.

We offer a complete range of products: ProFlex, ProHDMI, ProCAT, Remote Management Unit, Headend Accessories,.... This means that our Headends are tailored to satisfy all your project needs!

DVB S | DVB S2 | DVB T | DVB C

DVB T2 | ISDB T | HDMI

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DIGITAL MODULATOR HEADENDS

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Digital Modular Headends

NEW

5500 - 5501 ProFlex Versatile Modular Headend

The new satellite modules has 4 inputs allowing the reception of 4 different satellite bands per module. Because the module has 8 satellite tuners and a built-in multiswitch, reception of 8 different transponders coming from any of the 4 input satellite bands is possible.

Depending on the type of configuration, up to 8 DVB-T/C multiplexes, 4 MPTS or 64 STPS streams can be distributed per module, offering you one of the most flexible and cost-efficient solutions available on the market!

5500 I 5501

- versatile: one module for multiple applications
- flexible: tailor-made configuration
- future proof: confuguration upgradable
- scalable: feature upgradable
- feature activation can be time based
- 5501: module with up to 4 CAM slots and 8 Muxes
- configure remotely with uCloud via RMU (ref. 5951)

uCloud
Tools to configure your multimedia devices

		5500 I 5501
Input:		
Inputs	-	4 x satellite (4 satellite bands per module) 1 IP Gigabit input (4 MPTS transport streams per module)
Integrated multiswitch	-	Yes, allows flexible routing of satellite programs to multiplexes (QAM or QOFDM)
Configuration	-	Built-in webserver or with uCloud via RMU (ref. 5951)
Remote access	-	via RMU ref. 5951
Encoded programs	-	From all 8 tuners. Can be routed through 1 to 4 CAMs and can be decoded using multi-service CAMs
Output:		
DVB-T output	Mbps	Up to 31.7 / multiplex
DVB-C output	Mbps	Up to 51.3 / multiplex
IP output	-	Up to 4-MPTS transport streams in Unicast
IPTV output	-	Up to 64-SPTS channels in Multicast
General		
Dimensions	-	5 RU x 8 TE x 367 mm

Configuration possibilities	
1	DVB-S/S2 to DVB-C
2	DVB-S/S2 to DVB-T
3	DVB-S/S2 to IPTV
4	DVB-S/S2 to IP
5	IP to DVB-C
6	IP to DVB-T

Features possibilities		
1	#Tuners	1 to 8
2	#Mux	1 to 8
3	#CAM	0,1,2,3,4
4	#SPTS	16, 32, 48, 64
5	#MPTS	1 to 4

Digital Modular Headends

NEW

5510 ProCAT Cable and Terrestrial module

The 5510 is the professional digital modular headend for cable and terrestrial signals.
Perfect picture quality of demodulated transponders on IP or coax.

5510

- receives 1 DVB-T or DVB-C transponder
- decrypts the PayTV channels, when a professional CAM is inserted
- compatible with SD and HD, with MPEG2 and MPEG4
- configure remotely with uCloud via RMU (ref. 5951)

uCloud
Tools to configure your multimedia devices

		5510
Input:		
Number of inputs	-	1 with passive loop-through (-2dB)
Tuner	-	1
Frequency range	MHz	47 - 1002
Input level	dBµV	44 to 89
Standard	-	DVB-T/T2 DVB-C
DC remote power for LNA	V mA	12 or 24 350
Loop-through loss	dB	1.5
Return loss	dB	8
Bandwidth	MHz	8, 7, 6 switchable
Output:		
Number of outputs	-	1 RF with passive loop-through (-2 dB) + 1 IP
Multiplex	-	1
Frequency range	MHz	174 - 862
Output level	dBµV	69 to 84 (adjustable)
Standard	-	DVB-T ISDB-T
Modulation Error Rate (MER)	dB	40
General		
CI slot	-	1
Input voltage	VDC	15
Power consumption	W	6
Operating temperature	°C	0 to +40
Dimensions	mm	5 RU x 8 TE x 367 mm
Weight	kg	1.1
Accessories	-	2 x RF bridge, 2 x DC bridge

Digital Modular Headends

NEW

5520 ProHDMI Streamer

The 5520 is a ProHDMI Streamer with 4 HDMI inputs and 1 ethernet streaming port. Stream high quality video and optimize video experience with the ProHDMI streamers. The HDMI to IP is a professional headend encoder with 4 HDMI inputs. By changing the bitrate via the easy-to-use built-in webserver, you can optimize the video experience of your audience.

5520

- 4 HDMI inputs per module
- 1 ethernet IP streaming port
- 1 ethernet management port for system control and configuration
- configure remotely with uCloud via RMU (ref. 5951)

uCloud
Tools to configure your multimedia devices

		5520
Input:		
Number of inputs	-	4 x HDMI 1.3
Video resolution	-	576i up to 1080p
Video encoding	-	H264/AVC
Audio encoding	-	MPEG1 Layer II / AAC
Connector type	-	HDMI Type A
Output:		
Standard	-	Ethernet 100 / 1000 Base-T
Protocol	-	ARP, Multicast, ICMP, DHCP
Capacity	-	4 SPTS - 1 MPTS
General		
Connectors	-	Front side: Streaming: 1 x RJ-45 (Ethernet) Management: 1 x RJ-45 (Ethernet) DC: Banana sockets Rear side: HDMI Input: 4 x HDMI 1.3
Power supply	VDC	15
Consumption	A	1,2
Operating temperature	°C	0 to +40
Dimensions	-	5 RU x 8 TE x 330 mm

Digital Modular Headends

NEW

5530 - 5531 ProHDMI Modulator

The ProHDMI Modulator with 4 HDMI inputs and 1 coaxial output port with up to 2 independent output MUXs (DVB-T/DVB-C/ATSC-T/ATSC-C/DTMB/ISDB-T). Stream high quality video and optimize video experience with the ProHDMI modulators. By changing the bitrate via the easy-to-use built-in webserver, you can optimize the video experience of your audience.

5530 I 5531

- 4 HDMI inputs per module
- 1 coaxial output port with up to 2 independent output MUXs
- 1 ethernet management port for system control and configuration
- configure remotely with uCloud via RMU (ref. 5951)

uCloud
Tools to configure your multimedia devices

		5530 I 5531						
Input:								
Number of inputs	-	4 x HDMI 1.3						
Video resolution	-	576i up to 1080p						
Video encoding	-	H264/AVC						
Audio encoding	-	MPEG1 Layer II / AAC						
Connector type	-	HDMI Type A						
Output:								
Modulated channel frequency	MHz	174 - 1218						
Output level	dBµV	55 - 99 (adjustable)						
MER	dB	Typ. 38						
Output setting								
Output type	-	DVB-C	DVB-T	DTMB	ATSC-C	ATSC-T	DVB-T	ISDB-T
Bitrate	Mbps	2 - 23				2 - 15	2 - 23	
Channel bandwidth	MHz	2 to 8	6, 7 or 8	8	6	6	6, 7 or 8	6
Constellation	-	16QAM, 32QAM, 64QAM, 128QAM, 256QAM	COFDM (QPSK / 16QAM / 64QAM)	QPSK, QAM-4NR, 16QAM, 32QAM, 64QAM,	64QAM 256QAM	8VSB	COFDM (QPSK / 16QAM / 64QAM)	
Other settings	-	-	Code rate, Guard Interval, 2K-8K	Interleave Code rate 2K-8K Sync frame PN phase	-	-	Code rate, Guard Interval, 2K-8K	
General								
Connectors	-	Front side: Output: RF + Loopthrough Management: 1 x RJ-45 (Ethernet) DC: Banana sockets Rear side: HDMI Input: 4 x HDMI 1.3						
Power supply	VDC	15						
Consumption	A	1,2						
Operating temperature	°C	0 to +40						
Dimensions	-	5 RU x 8 TE x 330 mm						

Digital Modular Headends

NEW

5951 Remote Management Unit

The RMU is a very smart and powerful solution that connects with uCloud. uCloud enables you to connect to any of your installations with any PC or Internet-connected device.

5951

- rack-mountable module
- very simple installation (plug-and-play)
- no network knowledge needed
- very cost-efficient solution for remote monitoring and alarming

With uCloud, you can do the following:

- free application to manage and configure all your installations remotely
- monitoring of modules
- alarming
- google maps overview of all your installations
- one button-connect to any installation
- add pictures and comments regarding the installation
- safe remote access with certificates and password authentication
- solve problems from wherever you are, no need to go on-site for headend reconfiguration

		5951
Connectors	-	DC: banana sockets Control: 1 x RJ-45
LEDs	-	1 x alarm LED 1 x power LED
Power Supply	VDC	15
Consumption	A	0,6
Dimensions	-	5RU x 8TE x 180 mm

COMPATIBLE WITH
5500 ProFlex
5501 ProFlex
5510 ProCAT
5520 ProHDMI
5530 ProHDMI
5531 ProHDMI

The Remote Management Unit (RMU) enables any authenticated user to configure or monitor a specific headend remotely. The RMU is a very smart and powerful solution which connects with a server hosted by us and enables you to connect to any of your installations with any PC or Internet-connected device.
Setup of the unit is as simple as it gets:

1. Put the RMU in the 19" rack.
2. Connect the RMU to an Internet-connected switch, together with the DMH modules.
3. Connect the power.
4. Go to our hosted website, login and enter the unique code visible on the RMU.
5. You can now connect to this module from wherever you are on any PC!

PLUG'N'PLAY

Go to https://remote.uui-platform.com

Digital Modular Headends

5951 Remote Management Unit

uCloud
Tools to configure your multimedia devices

Online platform

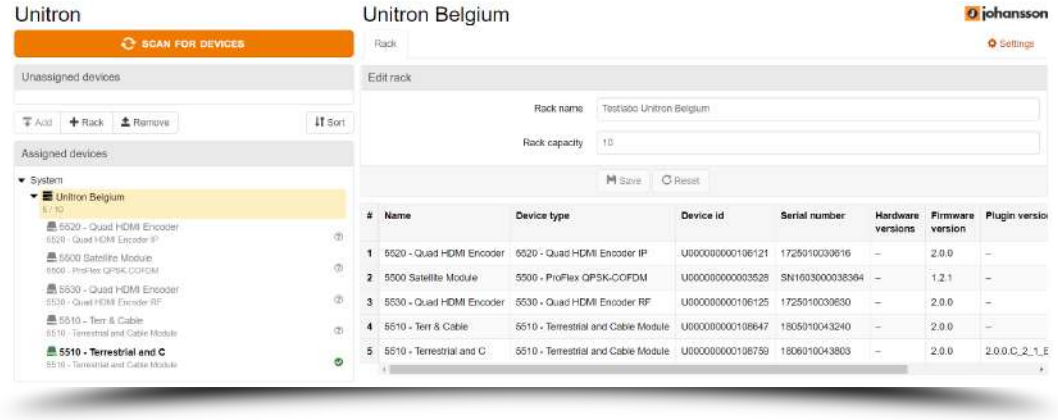
- Online driver library
- Available 24/7
- Multitenant architecture
- Always up to date
- Automatic device support
- Future proof

Centralized remote management tool

- Access all your systems from anywhere in the world
- Hosted solution: access your installation from every PC without installation
- Smart and bandwidth-efficient solution: HD screens, even with limited bandwidth
- Secure connection

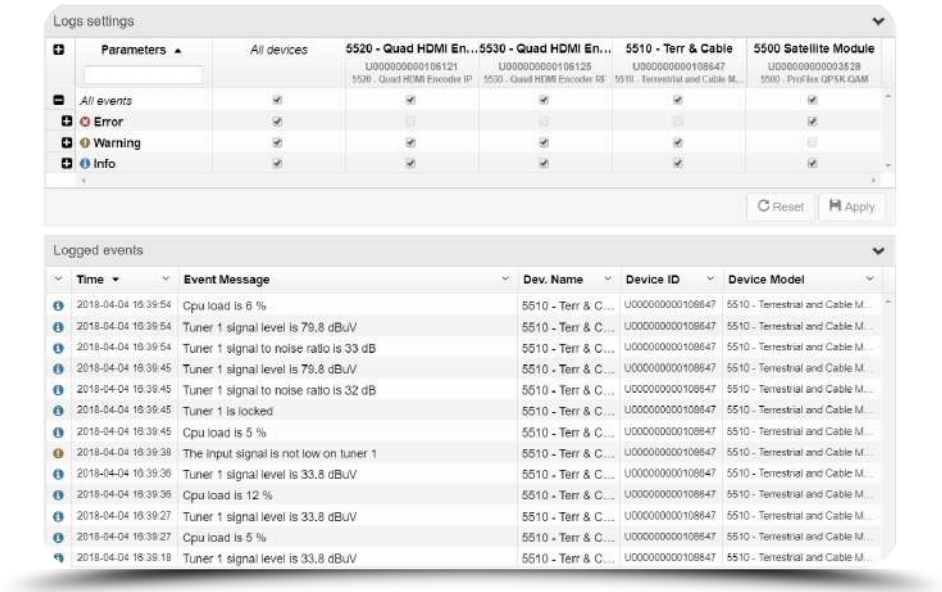
Digital Modular Headends

5951 Remote Management Unit



System level management

- automatic device discovery
- overview of all devices in the system
- direct remote connection on system level
- direct device status overview
- hybrid environment: supports configuration of Ethernet and coaxial devices



Monitoring and Alarming

- remotely monitor your modules in the field
- receive e-mail notifications based on your own parameter-based triggers
- Solve problems from wherever you are, no need to go on-site for headend reconfiguration

Digital Modular Headends

5330 - 5380 ProQuad AV → COFDM/QAM

ProQuad AV to COFDM modulator module with 4 Stereo Audio-Video inputs and 2 COFDM multiplexes. **ProQuad AV** to **DVB-C** module with 4 inputs, to distribute up to 4 analog video sources over the DVB-C network.

5330 I 5380

- 4 AV Stereo inputs per module
- easy configuration with built-in webserver
- change important parameters: LCN, resolution, brightness, contrast, hue, saturation,...
- ideal solution for CCTV or near-VOD!

		5330 I 5380	
Input:			
Number of inputs	-	4 x AV (CVBS)	
Video processing	-	Conformance with IEC 13818-2 (MPEG2 video) and ISO/IEC 11172-3 (MPEG1 audio) standards	
Video resolution	-	SIF: 352 x 288 SVCD: 480 x 576 HALF D1: 352 x 576 D1: 720 x 576 544: 544 x 576	
Video bitrate	kbps	1500 to 7000 (Typ. 6000)	
Audio volume	dB	-6 to +6 (Typ. 0)	
Output:			
Number of outputs	-	1 with 1 loop through (max 1,5 dB loss)	
Frequency range	MHz	47-862 (VHF-UHF)	
Multiplexes	-	2 adjacent COFDM	2 adjacent QAM
Channel bandwidth	MHz	6/7/8	6/8
Modulation	-	QPSK, 16-QAM, 64-QAM	6 MHz: 64-QAM I 8 MHz: 64-QAM/256-QAM
Output bitrate/Mux	Mbps	-	up to 51,3
OFDM mode	-	2K	-
Forward Error Correction (FEC)	-	1/2, 2/3, 3/4, 5/6, 7/8	-
Guard interval	-	1/4, 1/8, 1/16, 1/32	-
Modulation Error Rate (MER)	dB	40	
Spectral inversion	-	yes	
Output level	dBµV	68 to 83 (adjustable)	
Capacity	-	4 programs	
General			
Connectors	-	Video input: 4 x CINCH Audio input: 4 x 3,5 mm jack RF: 2 x "F" connector female Management: RJ-45 (Ethernet) DC: banana sockets	
Power supply	VDC	15	
Consumption	A	0,8	
Operating temperature	°C	0 to +40	
Dimensions	-	5 RU x 8 TE x 195 mm	

Digital Modular Headends

5230 ProStreamer AV → IPTV 4

ProStreamer AV to IP module (CVBS to IPTV) with 4 Stereo Audio-Video inputs and 4 services.

5230

- 4 AV stereo inputs per module
- easy configuration with built-in webserver
- change important parameters: resolution, brightness, contrast, hue, saturation,…
- ideal solution for CCTV or near-VOD!

		5230
Input:		
Number of inputs	-	4 x AV (CVBS)
Video processing	-	Conformance with IEC 13818-2 (MPEG2 video) and ISO/IEC 11172-3 (MPEG1 audio) standards
Video resolution	-	SIF: 352 x 288 SVCD: 480 x 576 HALF D1: 352 x 576 D1: 720 x 576 544: 544 x 576
Video bitrate	kbps	1500 to 7000 (Typ. 6000)
Audio volume	dB	-6 to +6 (Typ. 0)
Output:		
Standard	-	IEEE 802.3 10/100 Base-T
Protocol	-	Multicast IP/UDP
Bitrate	Mbps	100
Capacity	-	4 streams
General		
Connectors	-	Video input: 4 x CINCH Audio input: 4 x 3,5 mm jack Streaming: 1 x RJ-45 (Ethernet) Management: 1 x RJ-45 (Ethernet) DC: banana sockets
Power supply	VDC	15
Consumption	A	0,65
Operating temperature	°C	0 to +40
Dimensions	-	5 RU x 8 TE x 195 mm

Digital Modular Headends

5240 ProStreamer SD/HD Encoder

ProStreamer SD/HD Encoder with 8 Stereo Audio-Video inputs and 1 HD-SDI input / 9 services. The SD/HD Encoder is a digital headend encoder. It has 8 AV (CVBS) & 1 HD (HD-SDI) inputs. It provides 1 Ethernet IP streaming port and 1 Ethernet management port for system control & GUI.

5240

- 8 AV CVBS inputs with stereo or dual-mono audio
- 1 HD-SDI input with up to 4 embedded stereo or dual-mono audio channels
- easy configuration with built-in webserver
- change important parameters: resolution, brightness, contrast, hue, saturation,...
- ideal solution for CCTV or near-VOD!

		5240
Input: CVBS (A/V)		
Number of inputs	-	8 x AV (CVBS)
Video compression	-	MPEG-2 MP@ML H.264 AVC MP@L3.0 Selectable in groups of 4
Video resolution	-	PAL: 720x576i@25 NTSC: 720x480i@29.97
Video encoding bitrate	Mbps	1 to 10 (step = 100 kbps)
Audio compression	-	MPEG-1 layer II (MP2)
Audio sampling	kbps	32, 44.1, 48 (16 bit sampling)
Audio encoding bitrate	dB	64 up to 384
Input: HD-SDI (A/V)		
Number of inputs	-	1 x AV (HD-SDI)
Video compression	-	H.264 AVC HP@L4.1
Video resolution	-	1920x1080i@25/29.97 1280x720p@50/59.94 Auto-detection
Video encoding bitrate	Mbps	3 to 20 (step = 100 kbps)
Audio compression	-	AAC
Audio sampling	kbps	48 (16 bit sampling)
Audio encoding bitrate	dB	AAC-LC : 64 up to 384 HE-AAC : 32 up to 288
Output:		
Standard	-	Ethernet 100 / 1000 Base-T
Protocol	-	ARP, ICMP, DHCP
Bitrate	GbE	1
Capacity	-	9 streams
General		
Connectors	-	Front side: HD-SDI Input: BNC Streaming : 1 x RJ-45 (Ethernet) Management : 1 x RJ-45 (Ethernet) DC: Banana sockets Rear side: CVBS SD Video Input : 8x RCA Yellow SD Audio (R) Input : 8x RCA Red SD Audio (L) Input: 8x RCA White
Power supply	VDC	15
Consumption	A	1.2
Operating temperature	°C	0 to +40 (Fan unit mandatory)
Dimensions	-	5 RU x 8 TE x 330 mm

Digital Modular Headends

5050W - 5051W Power Supply Unit

5050W

- input: 90 to 264 VAC
- output: 15VDC / 10A

		5050W
Input voltage	VAC	90 to 264
Output voltage	VDC	15
Output power	W	150
Dimensions	-	5RU x 12TE x 180 mm

5051W

- input: 90 to 264 VAC
- output: 15VDC / 20A
- suitable for redundancy

		5051W
Input voltage	VAC	90 to 264
Output voltage	VDC	15
Output power	W	300
Dimensions	-	5RU x 12TE x 333 mm

Digital Modular Headends

5062W - 5065W - 5066W Fan Unit, Sub-Rack, Mini rack with integrated fan unit

5062W

- fan Unit for DMH products (mountable in 19" rack)
- C-Type power cord (European plug)

		5062W
Input voltage	VAC	90 to 264
Power consumption	VA	35
Weight	kg	4,9
Dimensions	-	19" x 2 RU x 155mm

5065W

- 1 power supply and up to 9 modules can be inserted (not delivered with sub-rack)
- delivered with 8 blank plates mounted

		5065W
Number of slots	-	Up to 9 modules (+ 1 power supply unit)
Blank plates	-	8 blank plates mounted
Weight	kg	3,3
Dimensions	-	19" x 5 RU x 367mm

NEW

5066W I Mini rack with integrated fan unit

- ideal for small projects
- compact housing with integrated fan unit
- wall mountable rack for up to 4 modules

		5066W
Number of slots	-	Up to 4 modules (+ 1 power supply unit)
Blank plates	-	3 blank plates mounted

Digital Compact Headends

Without a doubt, Johansson has a nice offering of Digital Compact Headends.
This versatile range consists of satellite, cable, terrestrial, HDMI and SAT>IP solutions.

Do you need qualitative and stable equipment for a small, medium-sized or big hospitality project? Well, Johansson is your best option. Because you'll be surprised how our Digital Compact Headends will make your project more successful!

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DIGITAL COMPACT HEADEND

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Digital Compact Headends

NEW

8700 - 8701 - 8703 Titanium

Compact headend with 8 tuners and 8 output MUXs (DVB-T/C) / 2CI slots
Titanium is our newest compact headend solution that is suitable for small to medium-sized budget-friendly projects. The transmodulator with 8 tuners allows for very fast installation.

8700 I 8701 I 8703

- standalone frame with built-in power supply
- 8700: 4 tuners, 2 CAM, 4 MUX
- 8701: 8 tuners, 2 CAM, 4 MUX
- 8703: 8 tuners, 4 CAM, 8 MUX

		8700 I 8701 I 8703		
Input				
Inputs	-	4 satellite bands 1 x RF in	4 satellite bands 1 x RF in	4 satellite bands 1 x RF in
Tuners	-	4 tuners (4 transponders)	8 tuners (8 transponders)	8 tuners (8 transponders)
Frequency range	MHz	950 - 2150	950 - 2150	950 - 2150
Level	dBµV	44 to 84	44 to 84	44 to 84
Bandwidth	MHz	36	36	36
Modulation	-	DVB-S2: QPSK, 8PSK / DVB-S: QPSK	DVB-S2: QPSK, 8PSK / DVB-S: QPSK	DVB-S2: QPSK, 8PSK / DVB-S: QPSK
DC remote power at RF input	-	13 V/18 V/22 kHz	13 V/18 V/22 kHz	13 V/18 V/22 kHz
Integrated multiswitch	-	Yes, allows flexible routing of satellite proframs to multiplexes (QAM or QOFDM)	Yes, allows flexible routing of satellite proframs to multiplexes (QAM or QOFDM)	Yes, allows flexible routing of satellite proframs to multiplexes (QAM or QOFDM)
Configuration	-	Built-in webserver accessible via management port	Built-in webserver accessible via management port	Built-in webserver accessible via management port
Encoded programs	-	From all 4 tuners. Can be routed through 1 or 2 CAMs and can be decoded using multi-service CAMs	From all 8 tuners. Can be routed through 1 or 2 CAMs and can be decoded using multi-service CAMs	From all 8 tuners. Can be routed through 1, 2, 3 or 4 CAMs and can be decoded using multi-service CAMs
Output				
Outputs	-	1 with 4 MUXs (DVB-T or DVB-C) + 1 loop-through	1 with 4 MUXs (DVB-T or DVB-C) + 1 loop-through	1 with 8 MUXs (DVB-T or DVB-C) + 1 loop-through
DVB-T output	Mbps	Up to 31.7 / MUX	Up to 31.7 / MUX	Up to 31.7 / MUX
DVB-C output	Mbps	Up to 51.3 / MUX	Up to 51.3 / MUX	Up to 51.3 / MUX
General				
Power consumption	W	22 (excl. external LNBs)	22 (excl. external LNBs)	22 (excl. external LNBs)
Dimensions	mm	345 x 70 x 182mm	345 x 70 x 182mm	345 x 70 x 182mm
Operating temperature	°C	0 to +50	0 to +50	0 to +50

Digital Compact Headends

5600 Universe Pro 3

This rackmountable Universal Compact Headend enables you to receive any transponder from satellite, terrestrial or cable and put it on your coaxial and IP netwok.

- receives 3 transponders from any DVB source (satellite, terrestrial or cable)
- decrypts the PayTV channels, when one or more professional CAMs are inserted
- puts the demodulated transponders on your private coaxial and IP network
- can work standalone to insert channels in your existing network
- compatible with SD and HD, with MPEG2 and MPEG4
- supports LCN
- perfect picture quality thanks to a MER, comparable to premium headend equipment
- Plug&Play thanks to a built-in WebGUI

		5600
Input		
Number of inputs	-	3
Tuners	-	3
Frequency range	MHz	42-2150
Input level	dBµV	44 to 89
Standard	-	DVB-S/S2 | DVB-T/T2 | DVB-C
DC remote power for LNB or LNA	V mA	0 / 13 / 18 / 22 kHz / DiSEqC, EN50494, EN50607 350
RF Output		
Number of outputs	-	1 RF with passive loop-through (-8 dB)
Multiplexes	-	3
Frequency range	MHz	174-862
Output level	dBµV	54 to 99 (adjustable)
Standard	-	DVB-T | ISDB-T
Modulation error rate (MER)	dB	40
Ethernet output		
Number of outputs	-	3 Gb Ethernet
Standard	-	IEEE 802.3ab 10/100/1000 Base-T
Protocol	-	Multicast IP/UDP
Transport stream	-	SPTS/MPTS*
General		
CI slot	-	3
Input voltage	Vac	100-240, 50/60 Hz
Power consumption	W	30 (without CAM and without remote power)
Operating temperature	°C	0 to +50
Dimensions	-	19 inch x 1RU x 240mm
Weight	kg	3,4
Accessories	-	mains cable, 3 Ethernet cables

DVB S
DVB S2
DVB T
DVB T2
DVB C
ISDB T

*Full MPTS from DVB input transponder

Digital Compact Headends

8600 Universe

EXCELLENT PRODUCT RATING

This Universal Compact Headend enables you to receive any transponder from satellite, terrestrial or cable and put it on your coaxial and IP netwok.

8600

- receives 1 transponder from any DVB source (satellite, terrestrial or cable)
- decrypts the PayTV channels, when a professional CAM is inserted
- puts the demodulated transponder on your private coaxial and IP network
- can work standalone to insert channels in your existing network
- more products can be combined to a make a complete headend:
  - cascadable inputs and outputs
  - remote powering capabilities
- compatible with SD and HD, with MPEG2 and MPEG4
- perfect picture quality thanks to a MER, comparable to premium headend equipment
- Plug&Play thanks to a built-in WebGUI

		8600
Input:		
Number of inputs	-	1 with passive loop-through (-2dB)
Tuner	-	1
Frequency range	MHz	42 - 2150
Input level	dBµV	44 to 89
Standard	-	DVB-S/S2 DVB-T/T2 DVB-C
DC remote power for LNB or LNA	V mA	0/13/18/22kHz/DiSEqC, EN50494, EN50607 350
Output: RF		
Number of outputs	-	1 RF with passive loop-through (-2 dB)
Multiplex	-	1
Frequency range	MHz	174 - 862
Output level	dBµV	57 to 102 (adjustable)
Standard	-	DVB-T ISDB-T*
Modulation error rate (MER)	dB	40
Output: Ethernet		
Number of outputs	-	1 GB Ethernet
Standard	-	IEEE 802.3ab 10/100/1000 Base-T
Protocol	-	Multicast IP / UDP
General		
CI slot	-	1
Input voltage	VDC	12 - 20
Power consumption	W	7 (without CAM and without remote power)
DC jack	mm	Ø 2.1
Powering remote units	-	Yes, 1 unit can power other units
Operating temperature	°C	0 to +50
Dimensions	mm	222 x 142 x 50
Weight	kg	1.1
Accessories	-	15V power adapter, 1 Ethernet cable

*Coming soon

Digital Compact Headends

8201 - 8202 HDMI Modulator

EXCELLENT PRODUCT RATING

HDMI to DVB-T and ISDB-T modulator with 1 HDMI input and 1 RF input - output.
Convert your local HDMI signal into an RF signal, ready for distribution over coaxial cables.
Our HDMI modulators are suitable for 24/7 usage, which makes them one of the most reliable HDMI modulators on the market.

8201 I 8202

- 1 HDMI input, capable of receiving all resolutions up to 1080p60
- 1 RF input, to by-pass terrestrial or cable signals
- 1 RF output
- perfect picture thanks to a MER comparable to other premium headend equipment
- easy to use menu structure, in combination with the Johansson rotary/push button.
- optimized for cascading multiple modulators on your coaxial network
- smallest housing in its range.

		8201 I 8202
Input: HDMI		
Video resolution	-	576i up to 1080p
Video encoding	-	H264 / AVC
Audio encoding	-	MPEG 1 Layer II / AAC
Connector type	-	HDMI type A
Input: RF		
Frequency	MHz	5 - 1218
Loss to RF output	dB	2
Output: RF (RF input signal + HDMI modulated transponder)		
Modulated channel frequency	MHz	174 - 1218
Output level	dBµV	59 - 99 (adjustable)
MER	dB	Typ. 38

Output: Settings		8202+8201	8202	8202	8202	8202	8201
Output type	-	DVB-T	DVB-C	ATSC-T	ATSC-C	DTMB	ISDB-T
Bitrate	Mbps	2 - 23		2 - 15	2 - 23		
Channel bandwidth	MHz	6, 7 or 8	2 to 8	6	6	8	6
Constellation	-	COFDM (QPSK / 16QAM / 64 QAM)	16 QAM 32 QAM 64 QAM 128 QAM 256 QAM	8VSB	64 QAM 256 QAM	QPSK QAM-4NR 16QAM 32QAM 64QAM	COFDM (QPSK / 16QAM / 64 QAM)
Other settings	-	Code rate Guard Interval 2K - 8K	-	-	-	Interleave Code rate 2K - 8K Sync frame PN phase	Code rate Guard Interval 2K - 8K

Configuration		
Basic configuration	-	Country I Output type I Output frequency I Output level I LCN I Channel I Name
Advanced configuration	-	RF I Video & Audio I SID I PMT, VPID, APID, I NIT, ONID I PDS I TS ID
Power & Dimensions, Etc...		
Power	-	Input Voltage: 12 VDC I Consumption: 5W Typ. (6W max.) I Jack Ø 2.1 mm
Dimensions, weight	-	155 x 120 x 60 mm I 0.6 kg
Accessories	-	12V power adapter

Digital Compact Headends

9830 Sat>IP Multiswitch

Unitron is a proud member of the SAT>IP™ Alliance.
SAT>IP™ enables you to watch satellite TV on your smart phone, tablets, PC and also your standard TV as well as smart TV. SAT>IP™ is a revolutionary technology for the cost-effective distribution of satellite signals via in-home or private IP networks.

This SAT>IP™ enabled multiswitch is the perfect solution to provide TV signals over **Ethernet** or **WiFi**. All channels available over satellite can be followed on hand-held devices, smartphones and tablets, using the SAT>IP™ app for Android an iOS.

The SAT>IP™ **multiswich** can be powered by Power over Ethernet (PoE), making an external power supply or adapter superfluous. In case the routers or switches in the building are not yet PoE-enabled, an optional PoE power supply can be delivered to power the unit.

This scalable multiswitch system can receive signals from 4 satellite bands and can distribute up to 16 IP streams through 2 Gigabit Ethernet ports. **This means 8 users per household can independently watch TV!**

9830

- approved by the SAT>IP Alliance
- 4 LNB inputs for Quattro or Quad LNB
- 4 Trunk outputs for cascading with any type of Multiswitch, as well in new or existing installations
- 2 IP outputs, each supporting up to 8 independent users on a gigabit network
- streams satellite TV (SD and HD) and radio over IP

		9830
Inputs	-	4
Ethernet outputs	-	2 x RJ45 100 / 1000 Mbps port
Frequency	MHz	950 - 2150
Users/output	MHz	2 x 8 or 1 x 16
Protocol	-	SAT>IP™ V 1.2 compliant
Addressing	-	DHCP / AUTO - IP
PoE Powered Device	-	PD class 3
Max. input level	dBµV	99
Min. input level	dBµV	49
Trunk loss	dB	2,5
Return loss in/out	dB	> 10
Power supply (PoE)	VDC	48 (Power over Ethernet or optional external adapter)
Max. power consumption on each output port	W	8
Operating temperature	°C	0 to 50
Dimensions	mm	210 x 210 x 50

Digital Compact Headends

5400 Sat>IP Multi Tuner SMATV Server

SAT>IP™ is a revolutionary technology for the cost-effective distribution of satellite signals via in-home or private IP networks. The rack mountable SAT>IP™ Multi Tuner SMATV server supports both dynamic and static operation; a combination of these modes is also possible.

In static mode the rack mountable SAT>IP™ Multi Tuner SMATV server can receive signals from 4 satellite bands and multicast up to 32 channels on your private IP network to a large amount of clients.

In dynamic mode 32 clients can simultaneously watch every channel which is available on the 4 satellite bands.

5400

- approved by the SAT>IP Alliance
- 4 LNB inputs for Quattro or Quad LNB. If the LNB is not already powered use the 9930 for Quattro and Quad LNB
- 4 trunk outputs for cascading multiple server units
- support both static and dynamic operation
- streams satellite TV (SD and HD) and radio over IP
- configuration with built-in webserver

		5400
Sat. input / Trunk output	-	4/4
Frequency	MHz	950 - 2150
Max. input level	dBµV	99
Min. input level	dBµV	51
Trunk loss	dB	5
Return loss in/out	dB	>10
Modulation	-	DVB-S(2): QPSK, 8-QPSK DVB-S: QPSK
Output	-	1 x RJ45 100 / 1000 Ethernet port
Users/channels	-	32
Protocol	-	SAT>IP V 1.2 compliant
Dynamic unicast	-	HTTP / RTSP
Static multicast	-	RTP
Power supply - mains	VAC	100 to 240 VAC, 50/60 Hz
Max. power consumption	W	40
Operating temperature	°C	0 to +50
Dimensions	mm	19" x 1RU x 400 mm

Digital SCR Solutions

Multiswitches are a key element in the distribution of satellite signals over coaxial cable throughout big buildings. In many cases there is only one coax cable available from the technical riser to the apartment.

Unitron offers a wide range of multiswitches with integrated 'Digital SCR' technology.
With those multiswitches, you can connect multiple set-top boxes for multi-room applications to numerous satellites using one coax cable only!

By enabling Single Cable Router mode in Unitron's "Johansson SCR multiswitch", we simplify the deployment and lower the overall cost of satellite service installation.

Over the last years, Johansson Multiswitches have been sold in over 40 countries worldwide. This has made Unitron market leader in dSCR technology. To meet your unique system requirements, custom software solutions are available.

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Digital SCR Solutions

9721 dSCR LNB

The SCR technology has widely expanded the capabilities of satellite multiswitches. Since this technology is a great success in our products and on the market, it was the perfect time for Unitron to take the next step: putting the SCR technology into LNBs.

9721

- LNB, able to receive 1 Ku satellite orbital slot
- connect up to 24 or 32 users
- high output power (AGC controlled)
- low noise
- multistandard support: EN50494 / EN50607. Other standards, like FSK, on request
- available for different operator user bands

		9721
Input	-	1 Ku
Input frequency	MHz	10700 – 12750
Outputs	-	1
Output SCR channels	-	24 - 32
Chipset	-	MaxLinear
Supported standards	-	EN50494 / EN50607
Conversion gain	dB	60
Noise figure	dB	Typ. 0.5
Cross polarization isolation	dB	25
Output channel power	dBµV	81 (AGC)
Return loss	dB	≥8
DC supply voltage	VDC	9 - 20
Power consumption	W	4.8 max.
Operating temperature	°C	-40 to +60
LNB mount fitting	Ø mm	40
Dimensions	mm	135 x 120 x 60

9729 dSCR Programmer

NEW

Buying a new LNB because its channel plan has changed is now something of the past.
With the dSCR Programmer, you can upgrade your LNB without having to climb on your roof to the satellite dish.
Just connect the dSCR Programmer indoors to the coaxial cable coming from the LNB.

9729

Easy-to-use programmer for digital SCR devices
(Such as the Johansson Digital LNB (REF.9721)).

- make a configuration file using the online platform uCloud and save the file to a SD card
- power the dSCR Programmer with 18Vdc (with F-connector or DC-jack)
- insert the SD card with the configuration file
- connect the Programmer to a dSCR device (e.g. Digital LNB)
- tap the button on the dSCR Programmer for 2 seconds to update the dSCR device

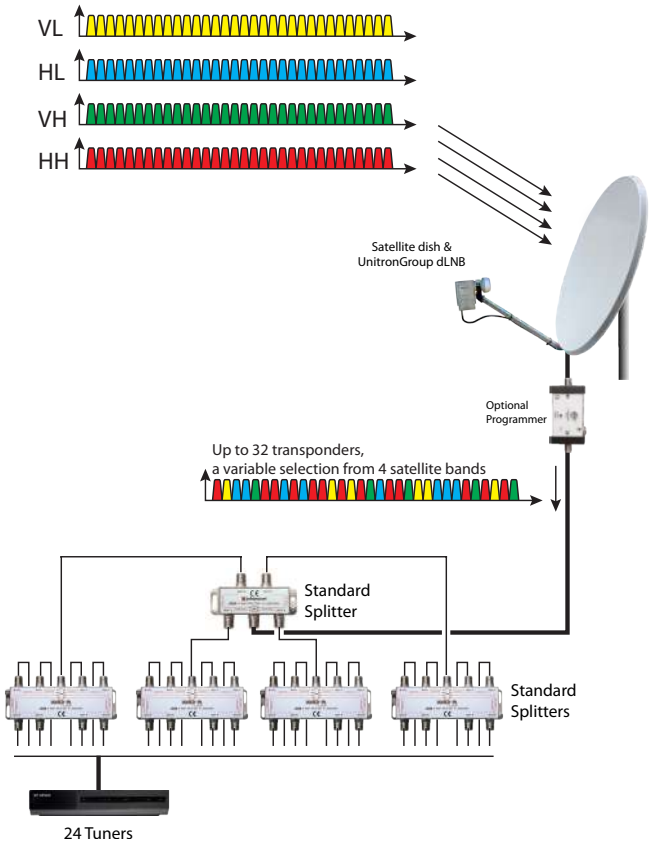
uCloud
Tools to configure your multimedia devices

Digital SCR Solutions

How to use the Digital SCR LNB

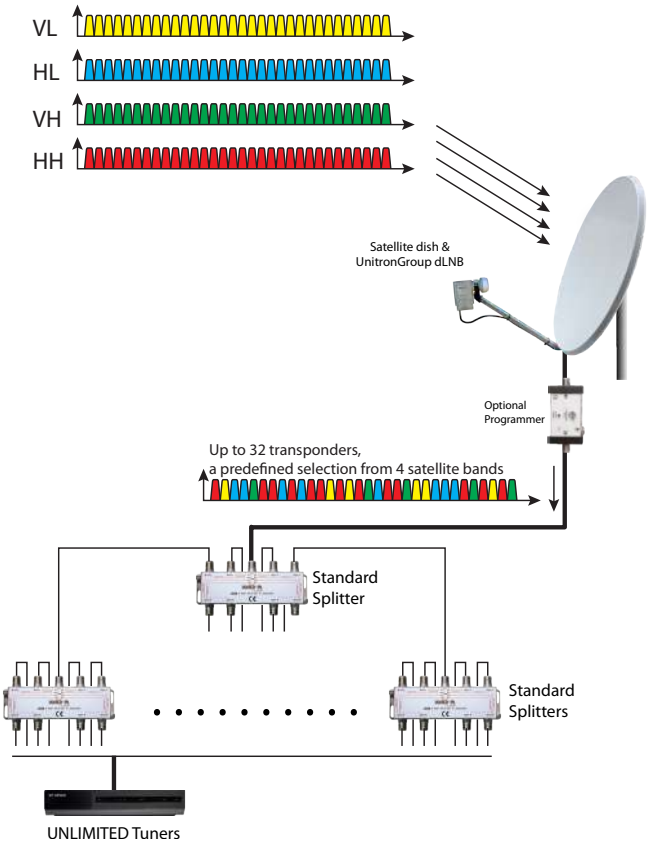
USE CASE 1

The first use case is for SFU or small MDU applications, where up to 32 users can connect to the dLNB. Each of those users can independently connect to any transponder of 1 satellite orbital position, for instance Astra 23.5°E. The following installation describes this **"dynamic"** setup:



USE CASE 2

The second use case is suited for all MDU applications, but the bigger the more cost effective this solution becomes. In fact the dLNB serves as a complete headend and if the system is well designed, the distribution of the satellite signal downstream from the LNB, can be done with simple splitters and taps. No need for expensive satellite distribution!! The way the dLNB is configured, can be done both by the installer or by the operator over the air. The following installation describes this **"static"** setup:



For more detailed information or cooperations, please contact our sales team.

Digital SCR Solutions

9731 - 9732 Multiswitch

EXCELLENT PRODUCT RATING

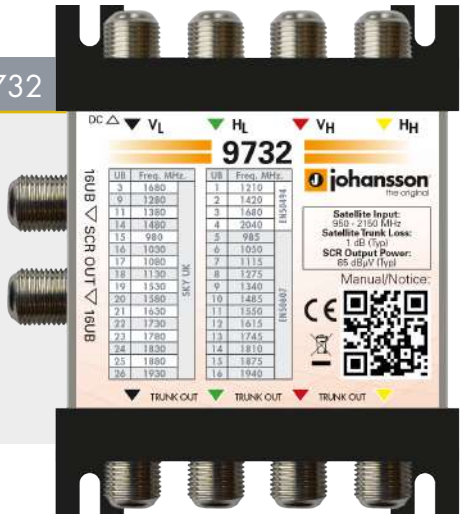
Unitron offers a wide range of multiswitches with integrated 'SCR' technology. With those multiswitches, you can connect multiple set-top boxes for multi-room applications to numerous satellites using one coaxial cable only!

- up to 16 UBs per SCR Output
- supports all SCR standards
- ultra compact housing
- trunk output for cascading multiple products
- available for different operator user bands

9731 SKY APPROVED

9732 SKY COMPATIBLE

9731 | 9732



		9731	9732
Trunk inputs	-	4	
Trunk outputs	-	4	
Frequency	MHz	950 - 2150	
Trunk loss	dB	3	
dCSS/dSCR outputs	-	1	2
dCSS/dSCR output connector	-	75 Ohm F type (Female)	
dCSS/dSCR UBs	-	16	16 + 16
dCSS/dSCR output level	dBµV	85	
Return loss	dB	>=8 (typ 12)	
Tap loss	-	Not applicable, AGC (automatic Gain control)	
Band and polarity selection	-	DiSEqC 1.0 (unidirectional) DiSEqC 2.0 (bidirectional) Standard EN 50494 (SCD) Standard EN 50607 (SCD2) SKY UK standard	
Max DC current consumption	mA	<300 @13Volt	<320 @13Volt
Power supply	-	From STB, power inserter or trunk (VL)	
Power inserter (2460 + 9669 available separately)	-	3A, 20V	
Dimensions	mm	90 x 80 x 40	

Variants for digital SCR multiswitches are possible

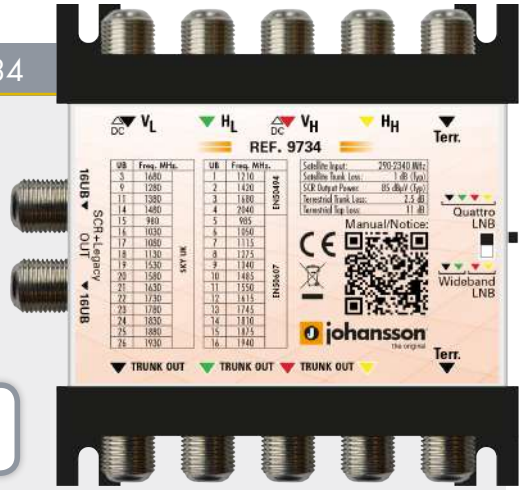
Custom software solutions are available to meet your unique system requirements.
Variants can be made on request.

Digital SCR Solutions

9733 - 9734 Multiswitch

The 9733/ 9734 has 4 satellite wideband input (for 1 quattro or 2 wideband LNB), passive terrestrial diplexer, 2 outputs with each 16 User Bands.

9733 I 9734



SKY COMPATIBLE

- input for 1 universal LNB or 2 wideband LNBs (switchable)
- up to 16 UBs per SCR output
- auto detection for SCR and Legacy Mode
- possibility to convert wideband inputs into Legacy outputs
- support all SCR Standards
- compatible with all Legacy STBs
- passive terrestrial/cable diplexer
- low power Sleep Mode
- ultra compact housing
- trunk output for cascading multiple products
- available for different operator user bands
- see page 51 for application scheme

		9733 | 9734	
Trunk inputs	-	4 + 1	
Trunk outputs	-	4 + 1	
Frequency	MHz	5 - 862 / 290 - 2340	
Trunk loss	dB	1	
dCSS/dSCR outputs	-	1	2
dCSS/dSCR output connector	-	75 Ohm F type (Female)	
dCSS/dSCR UBs	-	16	16 + 16
dCSS/dSCR output level	dBµV	85	
Return loss	dB	>=8 (typ 12)	
Tap loss	-	Not applicable, AGC (automatic Gain control)	
Band and polarity selection	-	Universal LNB voltage & Tone DiSEqC 1.0 (unidirectional) DiSEqC 2.0 (bidirectional) Standard EN 50494 (SCD) Standard EN 50607 (SCD2) SKY UK standard	
Max DC current consumption	-	<350mA @13Volt	
Power supply	-	From STB, power inserter or trunk (VL&VH)	
Power inserter (2460 + 9669 available separately)	-	3A max, 20V	
Dimensions	mm	92 x 90 x 40	

Digital SCR Solutions

NEW

9738 SCR Stacker

The SCR Stacker is the perfect solution to upgrade an old single satellite STB system to an SCR-compatible dual input receiver (PVR) or 2 separate SCR-compatible set-top boxes. The advantage of using the 9738 is that no additional cable is needed to connect the second tuner. The product stacks both transponders on 1 cable.

9738

- use with Universal LNBs (f.i. 2 single LNBs or 2 ports of a quad LNB) or 2 ports of a multiswitch
- powers the LNB or multiswitch from the STB or from an additional power supply
- supports the following standards:
  - EN50494/SCR standard (DiSEqC 1.0)
  - EN50607/dCSS/dSCR standard (DiSEqC 2.0)

		9738
Inputs	-	2 ports Satellite, combined with Terrestrial on port 1
Input frequency	MHz	Userbands 1-2: 1076 - 1178 MHz or Userbands 3-4: 1280 - 1382 MHz or Userbands 5-6: 1284 - 1400 MHz or Userbands 7-8: 1210 - 1420 MHz
STB output frequency	MHz	5 - 862 / 950 - 2150
dCSS/dSCR outputs	-	1 SCR
dCSS/dSCR output connector	Ohm	75 F type (Female)
dCSS/dSCR UBs	-	2 on SCR output
dCSS/dSCR output level	dBµV	86
Satellite input power level	dBµV	64 to 94
Return loss	dB	>=8 (typ 12)
Tap loss	-	Not applicable, AGC (automatic Gain control)
Band and polarity selection	-	DiSEqC 1.0 (unidirectional) DiSEqC 2.0 (bidirectional) Standard EN 50494 (SCD) Standard EN 50607 (SCD2)
Max DC current consumption SCR port	W	<4,0
DC power pass from STB to input ports	V	13/18/22kHz 100mA max per port
From DC power port to input ports	V	13/18/22kHz 500mA max combined
Power supply	-	From STB or power inserter
Power (2460 available separately)	mA	500 max, 20V
Dimensions	mm	90 x 85 x 40

Variants for digital SCR multiswitches are possible

Custom software solutions are available to meet your unique system requirements.
Variants can be made on request.

Digital SCR Solutions

NEW

9739 Multiswitch Add-on

The 9739 can be used with Quattro or Quad LNB types and will output in Legacy or SCR mode. Use the Multiswitch Add-on to change a legacy Multiswitch to a Channel Stacking Switch (CSS) without loss of existing legacy ports. Concretely, you can use the Multiswitch Add-on to upgrade your legacy Multiswitch system and make the latest generation of SCR set-top boxes (STB) available in 2 Single Family Units (SFUs) per Add-on. You can also use this Multiswitch Add-on to transform a Fiber GTU signal to a SCR GTU signal.

9739

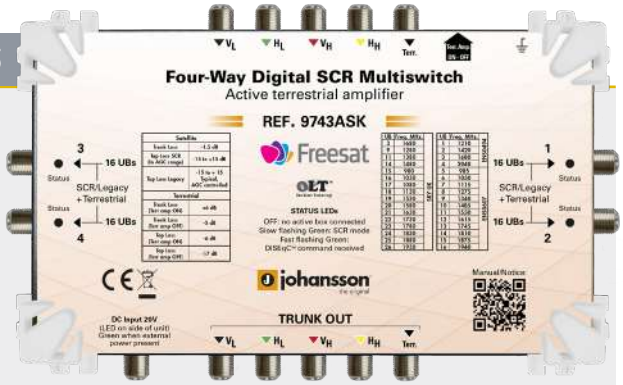
- no need to interrupt the trunk signal during installation.
- make a legacy system compatible with two times 16 user bands
- supports the following standards:
  - EN50494/SCR standard (DiSEqC 1.0)
  - EN50607/dCSS/dSCR standard (DiSEqC 2.0)
  - Simultaneous support for EN50494/EN50607 standards
  - SKY UK standard

SKY COMPATIBLE

		9739
Inputs	-	4 ports Terrestrial + Satellite
Input frequency	MHz	5 – 862 / 950 – 2150
STB output frequency	MHz	5 - 862 / 950 - 2150
dCSS/dSCR outputs	-	2 legacy only 2 SCR/legacy (auto detection)
dCSS/dSCR output connector	Ohm	75 F type (Female)
dCSS/dSCR UBs	-	16 per SCR output
dCSS/dSCR output level	dBµV	88
Satellite input power level	dBµV	64 to 94
Return loss	dB	>=8 (typ 12)
Tap loss	dB	SCR: Not applicable, AGC (automatic Gain control) Legacy: 0 typical
Terrestrial/Cable loss	dB	-7 typical
Band and polarity selection	-	DiSEqC 1.0 (unidirectional), DiSEqC 2.0 (bidirectional) Standard EN 50494 (SCD), Standard EN 50607 (SCD2)
Max DC current consumption	W	SCR/Legacy ports: <4,2 Legacy ports only: <2
DC power pass from STB to input ports	V	13/18/22kHz 100mA max per port
From DC power port to input ports	V	13/18/22kHz 100mA max per port 1A max to HL port
Power supply	-	From STB or power inserter
Power (2460 available separately)	mA	300 max, 20V
Dimensions	mm	90 x 85 x 40

9743 - 9745 4 or 8-way dSCR Multiswitch

9743 I 9745



- 4/8 SCR outputs
- up to 16 UBs per SCR Output
- auto detection for SCR and Legacy Mode
- support all SCR standards
- compatible with all Legacy STBs
- passive terrestrial diplexer
- 9743A and 9745A are available with active terrestrial amplifier
- available for different operator user bands
- FreeSat approved

Digital SCR Solutions

9744 - 9746 - 9748 - 9749 Multiswitch

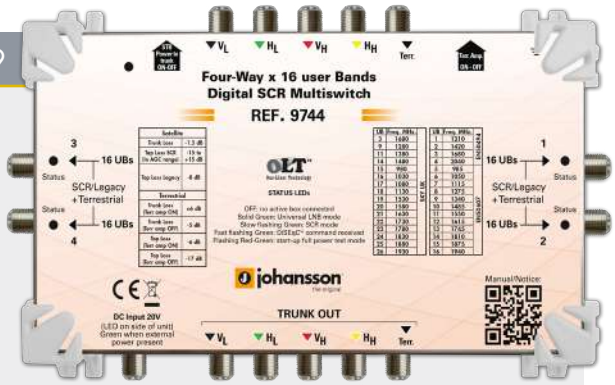
EXCELLENT PRODUCT RATING

The 974x products are designed to support a wide range of new and existing multiswitch installations.
Have a mixed network of STBs, not a problem with the Johansson SCR family of multiswitches.
Auto detection of what type of STB is on the network, is built-in to all our solutions.

9744 I 9746 I 9748 I 9749

- 4/8/16 SCR outputs
- up to 16 UBs per SCR output
- auto detection for SCR and Legacy Mode
- support all SCR Standards / compatible with all Legacy STBs
- amplified/bypass terrestrial diplexer
- soft power-up mode for Legacy
- power diagnostics for trunk power
- available for different operator user bands
- **9749**: 6-way variant of the 9746

SKY APPROVED



			9744	9746	9748
SATELLITE	Operating frequency range	MHz	950 - 2150		
	Inputs	-	4		
	Outputs* (Trunk)	-	4		
	Max. and min. input txp power level	dBµV	74 to 104		
	Trunk lines In to Out	dB	-2.5 max (-1.5 typical)	-4 max. (-2.5 typical)	-9 max. (-6 typical)
	In to SCR Out gain	dB	-15 to +15 typical, AGC controlled		
	In to legacy Out gain	dB	-13 max. (-8 typical)		
	Return loss	dB	>8		
TERRESTRIAL	Operating frequency range	MHz	88 - 790		
	Inputs	-	1		
	Outputs* (Trunk)	-	1		
	Max. input mux power level	dBµV	Amplified: 96	Amplified: 96	Amplified: 88
	Trunk lines In to Out	dB dB dB dB	Bypass: -7 max. (-5 typical) Amplified: +4 min. (+6 typical)	Bypass: -10 max. (-8 typical) Amplified: +1 min. (+3 typical)	Bypass: -20 max. (-16 typical) Amplified: +2 min. (+6 typical)
	In to SCR Out gain	dB dB dB dB	Bypass: -23 max. (-17 typical) Amplified: -12 max. (-6 typical)	Bypass: -27 max. (-21 typical) Amplified: -16 max. (-10 typical)	Bypass: -34 max. (-24 typical) Amplified: -16 max. (-10 typical)
dSCR OUTPUT PORTS	dSCR Output ports	-	4	8	16
	Supported output modes	-	SCR + Legacy + DTT/DAB/FM		
	SCR mode indication	-	Multicolor/Flashing LED		
	SCR Output power per txp	dBµV	86 min. (88 typical), AGC controlled		
	SCR Channel bandwidth	MHz	46		
	SCR User bands	-	16		
	SCR Standard (auto detect a switch)	-	SKY UK SCR, CENELEC EN50494, CENELEC EN50607, Universal LNB Tone & Voltage		
	Legacy Output power per txp	dBµV	Up to 94, no AGC		
	DiSEqC signaling	-	DiSEqC compliant		
DC POWER	DC Power connector	-	Unit can be powered via PWR port, trunk lines or outputs (all F-type)		
	Power indication	-	Green LED (front of unit)		
	Power supply voltage	VDC	10 to 20	10 to 20	10 to 20 (from STB) 11 to 20 (from PWR port)
	Max. power consumption	W	SCR mode: 6 (per pair of ports) I LNB emulation mode: <2 (per port - Ter Amp OFF)		
	DC from trunk lines Out to In	-	Yes (not for terrestrial trunk)		
	Supply current to LNB (switchable)	mA	500 (@ 20V)		
	Short Circuit protection & Power on Diagnostics	-	Yes		
	Ground post	-	1		
	Operating temperature range	°C	-20 to +50 (indoor housing)		
	Dimensions	mm	223 x 143 x 50	223 x 223 x 50	223 x 423 x 50

Digital SCR Solutions

NEW

9754 - 9756 dSCR Multiswitch Next GEN

As market leader in dSCR technology, Unitron is proud to present its newest range of dSCR Multiswitches. These state-of-the-art Multiswitches in a compact die-cast housing are optimized for installation in narrow spaces and will make your installation more successful.

9754 I 9756

- 4 wideband compatible satellite input (for 1 Quattro or 2 wideband LNBs)
- extended dynamic range
- 4 or 6 SCR outputs
- up to 16 UBs per SCR output
- auto detection for SCR and Legacy Mode
- support all SCR Standards
- compatible with all Legacy STBs
- amplified/bypass terrestrial diplexer
- available for different operator user bands

SKY COMPATIBLE

		9754 I 9756	
Trunk inputs/outputs	-	Sat.: 4 I Terr.: 1	Sat.: 4 I Terr.: 1
dSCR outputs	-	4	6
Frequency	MHz	Sat.: 290 - 2340 I Terr.: 88 - 862	Sat.: 290 - 2340 I Terr.: 88 - 862
Input level	dBµV dBµV	Sat: 50 to 109 Terr.: 100 (amplified)	Sat: 50 to 109 Terr.: 100 (amplified)
Return loss	dB	-10	-10
Insertion loss	dB	Sat.: 2 I Terr.: 3	Sat.: 2 I Terr.: 3
Sat positions	-	Wideband: 2 I Universal: 1	Wideband: 2 I Universal: 1
Supported LNB types	-	Quattro (LO: 9750/10600) Wideband (LO: 10410)	Quattro (LO: 9750/10600) Wideband (LO: 10410)
dSCR channel power	dBµV	86 (AGC controlled)	86 (AGC controlled)
Output return loss	dB	10	10
Trunk insertion loss	dB	Sat.: -2 I Terr.: -3	Sat.: -2 I Terr.: -3
Terr output loss	dB	-20 or -8 (switchable)	-20 or -8 (switchable)
SCR channels (16 users/output)	MHz	Between 950 and 2150	Between 950 and 2150
Supported standards	-	EN50494 / EN50607 / BskyB	EN50494 / EN50607 / BskyB
Trunk termination DC blocked required	Ohm	75 (Sat & Terr)	75 (Sat & Terr)
DC supply to sat trunks from power adapter	V	20	20
DC supply from sat trunks	V	20	20
Max LNB current / LNB	mA	500	500
F con DC input	V	20	20
Operating temperature	°C	-20 to 50, indoor housing	-20 to 50, indoor housing
DC power from output port	-	Yes	Yes
Consumption	W	10	15
Dimensions	mm	172 x 131 x 40	172 x 131 x 40
Operating temperature	°C	-20 to 50, indoor housing	-20 to 50, indoor housing

Variants for digital SCR multiswitches are possible

Custom software solutions are available to meet your unique system requirements.
Variants can be made on request.

Digital SCR Solutions

NEW

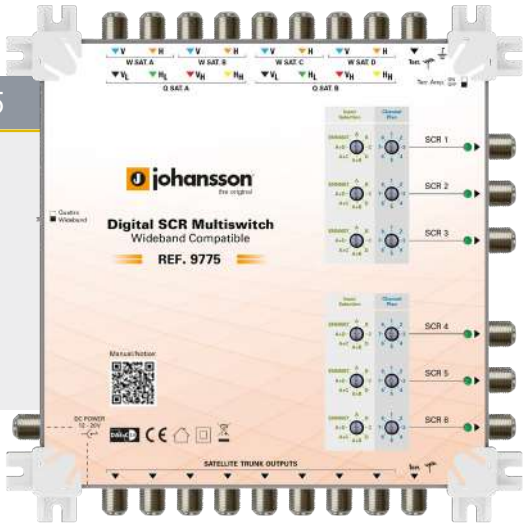
9775 Multiswitch wideband compatible

The 9775 has 8 satellite wideband inputs and 1 terrestrial input. This allows you to use 2 quattro LNBs or 4 wideband LNBs. The 6 SCR outputs have 10 user bands each. What makes the 9775 unique is the following: on each individual output, you can select the input and channel plan. This multiplies the available content and minimizes your equipment costs.

With the 9775, you can offer a wide range of video content in multi-dwelling units. For each single family unit, you can select a specific channel plan. When the family's preferences change, or there's a new family moving in, you can simply change the output settings. This gives you much more flexibility and you only need one multiswitch.

9775

- 8 satellite wideband inputs
  - compatible with 4 wideband LNBs
  - compatible with 2 Quattro LNBs
- 6 SCR outputs with each 10 user bands
- 1 terrestrial input
- channel plan can be selected on each output individually



		9775
Trunk inputs/outputs	-	Sat.: 8 I Terr.: 1
dSCR outputs	-	6
Frequency	MHz	Sat.: 290 - 2340 I Terr.: 88 - 862
Input level	dBµV dBµV	Sat: 58 to 108 Terr.: 100 (amplified)
Return loss	dB	-10
Insertion loss	dB	Sat.: 2 I Terr.: 3
Sat positions	-	Wideband: 4 I Universal: 2
Supported LNB types	-	quattro (LO: 9750/10600) Wideband (LO: 10410)
dSCR channel power	dBµV	86 (AGC controlled)
Output return loss	dB	10
Terr output loss	dB	-20 or -8 (switchable)
SCR channels (10 users/output)	MHz	Configurable between 950 and 2150
Supported standards	-	EN50494 / EN50607 / BskyB
Trunk termination DC blocked required	Ohm	75 (Sat & Terr)
DC supply to sat trunks from power adapter	V	20
DC supply from sat trunks	V	20
Max LNB current / LNB	mA	500
DC jack 2.1mm	V	20
F con DC input	°C	-20 to 50, indoor housing
DC power from output port	-	Yes
Consumption	W	24
Dimensions	mm	220 x 220 x 50
Operating temperature	°C	-20 to 50, indoor housing

Digital SCR Solutions

NEW

9780 Compact Satellite Converter

The 9780 is the new generation converter for satellite signals to be used in MDU's.
The compact plug-and-play module has a straightforward and easy configuration.

9780

- programmable satellite IF converter
- up to 32 DVB-S/S2 transponders
- 5 inputs: 4 satellite (Quattro/Quad/Wideband LNB) + 1 terrestrial (passive)
- realtime AGC on all individual trabsponders
- read-out of input level strength: no need for field strength meter
- 115 dBµV (output level)

4603 Smart Splitter

Standard splitters can give collisions when two commands come at the same time or when one of the set-top boxes uses a permanent high voltage. A smart splitter captures the commands of the different set-top boxes and serializes them to guarantee no collisions happen.

4603

- indoor housing
- 3-way
- no power adapter needed
- buffers and sends out the different command signals

		4603
Way	-	3
Frequency	MHz	5-2150
Insertion Loss	dB	9
Return loss in/out	dB	> 10
DC power pass	mA	500 max.
Input voltage	VDC	10 min. / 20 max.
Message buffer	-	3/receiver port
Dimensions	mm	40 x 68 x 140
Supported standards	-	Sky UK, EN 50494

Digital SCR Solutions

9645 KIT Stacker - Destacker

EXCELLENT PRODUCT RATING

The Stacker-Destacker is the perfect solution to upgrade an old single-cable system with a twin (or quad) LNB to be used in combination with a dual input receiver (PVR) or 2 separate single input receivers. The advantage of using the Stacker-Destacker is that you don't need an additional cable. The Stacker converts the frequencies of the second input, so it is literally stacked above the frequencies of the first input. The Destacker converts the frequencies back to the original ones.

This new version of the Stacker-Destacker doesn't need an additional power adapter by default. Thanks to the built-in attenuator with adjustment, it is protected against high input signals, avoiding saturation of the device.

9645 KIT

- no power adapter needed! Power the device with the satellite receiver.
- built-in switchable attenuator to protect against high input signals
- Transparent for unidirectional DiSEqC®
  (receive signals from up to 4 satellites)
- wide band 5-2150 MHz to combine terrestrial signals (FM, DAB, TV)
- no additional coax cable needed between dish and receiver
- no need to replace the existing cable
- transparent system
- no degradation of picture
- HD compliant

Stacker

Destacker

		9645 KIT	
		Stacker	Destacker
Input	-	2	1
Input frequency	MHz	5-2150 MHz / 950-2150 MHz	5-3550 MHz with "F" High Quality connector
Output	-	1	2
Output	MHz	5-3550 MHz with "F" High Quality connector	5-2150 MHz / 950-2150 MHz
Insertion loss/gain	dB	-1 @ 5-862 MHz -3 @ 950-2150 MHz Converted Sat.Pos. 1 (0 dB)= +6 Converted Sat. Pos. 2 (10 dB att.)= +4	-1 @ 5-862 MHz -3 @ 950-2150 MHz Converted Sat.= +5
Max. Input level*	dBµV	pos. 1 (0 dB) = 88 Pos. 2 (10 dB att.) = 98	-
Consumption	W	160 max. Optional power adapter available for more LNB current. Ø 2.1 mm **	
Dimensions	mm	125 x 115 x 45	150 x 90 x 40
General specification	-	Operating system up to 75 m CT100 or 17 VAtC coaxial cable	

* Sat.: -35 dBc/IM3
** Optional power adaptor only needed in extreme situations: ref. 2452 (24 Vdc)

Digital SCR Solutions

NEW

2460(UK) - 2462(UK) - 9933(UK) Power Supply

These power supplies are designed to power the trunk lines or the DC input connector.

2460(UK) I 2462(UK)

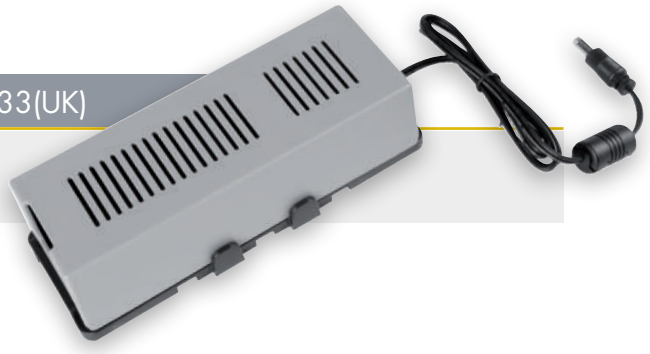
- DC power supply with F-connector
- powers SCR products without overloading the set-top boxes

NEW

		2460(UK)	I	2462(UK)
Input voltage	VAC	100 - 240		100 - 240
Output voltage	VDC	20		20
Output current	A	3,25		1,2
Output Connector	-	F-type		F-type
Dimensions	mm	115 x 55 x 35		90 x 90 x 35

9933(UK)

- DC Power Supply with DC-jack 2.1mm

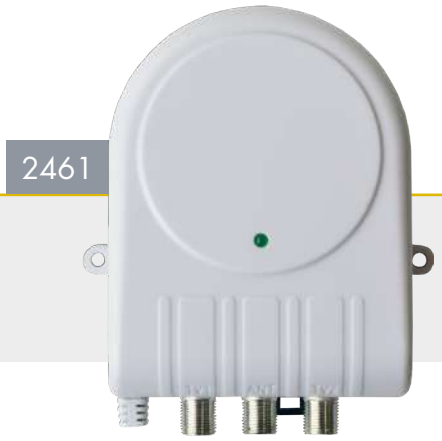


		9933(UK)
AC input	-	230 V~/50 Hz
DC output	VDC	15
Max. Output/ current	A	2
Connector	mm/female	Jack 2,1
Dimensions	mm	176 x 71 x 47

Digital SCR Solutions

NEW

2461 Power Supply



- powers SCR products without overloading the set-top boxes
- copies the set-top box voltage, tone and DiSEqC to the SCR product (EN50494 and EN50607)

		2461
Inputs	-	1
Outputs	-	2
Frequency range	MHz	950 - 2150
Insertion loss	dB	6
Return loss	dB	> 10
Input voltage	VAC	100 - 240
Output voltage	VDC	18
Output current	mA	500
Dimensions	mm	110 x 94 x 41
Supported standards	-	EN50494, EN50607

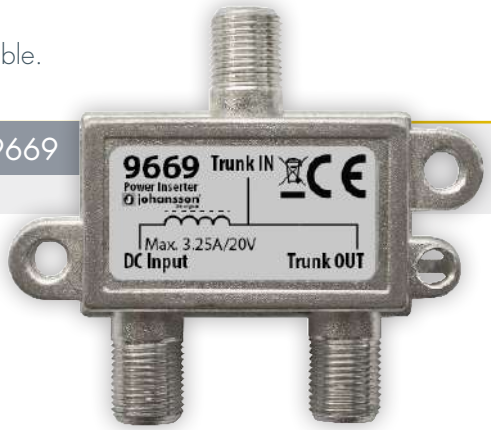
Digital SCR Solutions

9669 Power inserter

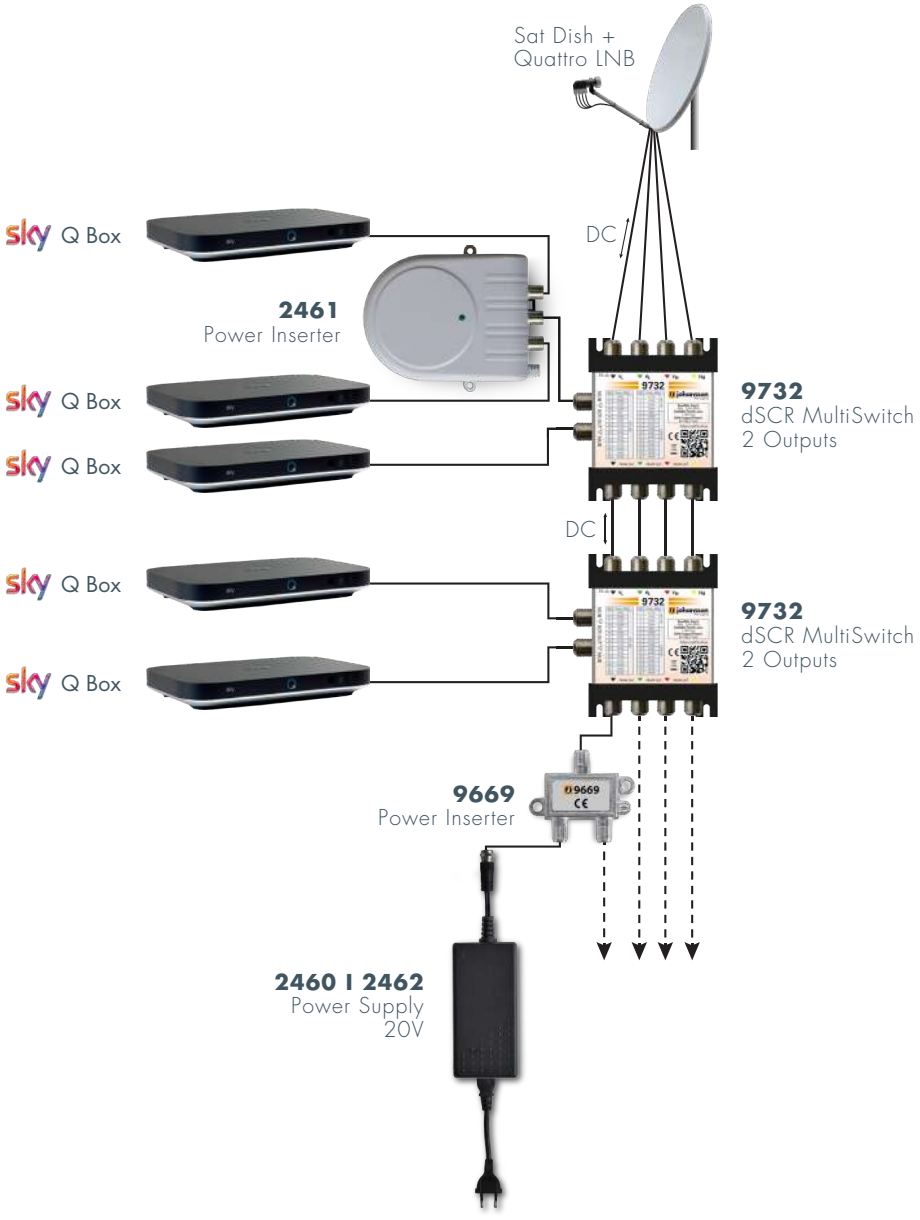
The power inserter enables you to add DC-power on to a coaxial cable.

- dSCR power inserter for trunk powering

9669



		9669
Frequency range	MHz	250 - 2340
Insertion loss	dB	1
DC power pass	A	3,25
Dimensions	mm	61 x 51 x 16



Digital SCR Solutions

9930(UK) Power Inserter

The 9930 is a satellite power inserter, which can be used to ensure a universal LNB is locked on the correct satellite band. Each of the 4 inputs can be configured to deliver the desired control signals (13/18V + 0/22 kHz). The selected control signal is indicated by a bi-color LED.

- 4 satellite inputs / 4 satellite outputs
- frequency range: 5-2150 MHz
- current/input: up to 350 mA
- low insertion loss: <1 dB
- independent satellite band for each input (indicated by bi-color LED)

9930(UK)

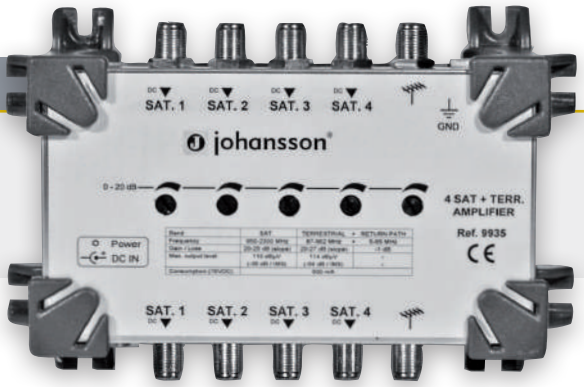
		9930(UK)
Inputs	-	4
Frequency range	MHz	5 - 2150
Insertion loss	dB	< 1
Isolation between ports	dB	> 35
Return loss	dB	> 10
Control signals	VDC	switchable: 13/18/13 + tone/18 + tone
Added power supply adapter	-	20V - 1A
Dimensions	mm	158 x 102 x 51

Digital SCR Solutions

9935 - 9654 Satellite IF Amplifiers

9935

- separate adjustment for sloped gain on every line
- DC input for powering trunk line amplifiers & LNB
- works from 12 to 20 VDC



9654

- compatible with Wideband LNBs
- separate adjustment for sloped gain on every line
- DC input for powering trunk line amplifiers & LNB
- works from 12 to 20 VDC

		9935	9654
Inputs	-	4 SAT + 1 TERR	2 SAT
Outputs	-	5	2
Frequency range	MHz	Sat.: 950-2300 MHz Terr.: 5-65 MHz + 87 -862 MHz	290-2340
Gain	dB	Sat.: 20-25 dB(sloped) Terr.: 87-862 MHz - 20 -27 dB (sloped) return path: - 1 dB	30
Noise figure	dB	Sat.: 5 dB - Terr.: 6 dB	5
Gain adjustment	dB	Sat.: 20 dB - Terr.: 20 dB	15
Slope adjustment	dB	-	15
Max. Output level	-	Sat.:110 dBµV (-35 dB/IM3) Terr.: RP: passive 87-862 MHz: 114 dBµV (-54 dB/IM3)	110 dbµV (-35 dB/IM3)
Consumption	-	200 mA from 20 VDC external power supply or input/output	150mA from 20 VDC external power supply or input/output
Dimensions	mm	158 x 102 x 51	129 x 114 x 51

Digital SCR Solutions

9937 - 9938 - 9939 Satellite Splitter/ Taps

9937

- 2-way satellite splitter
- terrestrial input/output
- DC power pass
- 5 dB loss

		9937
Nb of inputs	-	4 SAT + 1 Terr
Nb of outputs	-	2 x 5
Frequency range	MHz	Sat.: 950-2300 Terr.: 5-862
Loss	dB	Sat.: 5 - Terr.: 5
DC power pass in / out	-	yes
Dimensions	mm	158 x 162 x 51

9938

9939

- 2-way satellite tap
- terrestrial input/output (ref. 9939)
- DC power pass
- loss: 10 dB (tap loss) / 1 dB (through loss)

		9938	9939
Nb of inputs	-	4 SAT	4 SAT + 1 TERR
Nb of outputs	-	4 taps/ 4 through	5 taps/ 5 through
Frequency range	MHz	950-2300	Sat.: 950-2300 Terr.: 5-862
Tap loss	dB	-10	Sat.: -10 Terr.: -13
Through loss	dB	-1	Sat.: -1 Terr.: -1
DC power pass in/tap/out	-	yes	yes
Dimensions	mm	142 x158 x 51	142 x 158 x 51

Digital SCR Solutions

Digital SCR Additional products

MULTISWITCH

4+1

4 outputs		Sat.	Ter.
9942	cascadable	-10 dB	-15 dB
9943	end unit	-5 dB	-15 dB

6 outputs		Sat.	Ter.
9946	cascadable	-10 dB	-15 dB
9947	end unit	-5 dB	-15 dB

8 outputs		Sat.	Ter.
9950	cascadable	-10 dB	-20 dB
9951	end unit	-5 dB	-20 dB

12 outputs		Sat.	Ter.
9954	cascadable	-10 dB	-20 dB
9955	end unit	-5 dB	-20 dB

16 outputs		Sat.	Ter.
9958	cascadable	-10 dB	-25 dB
9959	end unit	-5 dB	-20 dB

8+1

8 outputs		Sat.	Ter.
9980	cascadable	-10 dB	-20 dB
9981	end unit	-5 dB	-20 dB

12 outputs		Sat.	Ter.
9984	cascadable	-10 dB	-20 dB
9985	end unit	-5 dB	-20 dB

ACTIVE SPLITTER

4492	2 Way Splitter	40 MHz - 3,6 GHz, 2 dB gain
4494	4 Way Splitter 3,6 GHz	40 MHz - 3,6 GHz, 2 dB gain
4498	8 Way Splitter 3,6 GHz	40 MHz - 3,6 GHz, 3 dB loss

Variants for digital SCR multiswitches are possible

Custom software solutions are available to meet your unique system requirements.
Variants can be made on request.

For more information please send an e-mail to sales@unitrongroup.com or visit our website www.unitrongroup.com.

Wideband Satellite Distribution

Wideband Satellite Distribution is a new and more efficient way of distributing satellite signals. While in universal LNBs, the Ku band is split in a low and high part for both vertical and horizontal polarisation, the wideband LNB converts each polarisation as a whole, leaving only 2 cables coming from the LNB. This is a much more efficient way of distribution, with the following benefits.

- lower consumption in all products of the distribution
- lower cost of the products
- less cables needed, making the installation cheaper
- less connections, which leads to a more reliable system

INDEX

WIDEBAND SATELLITE DISTRIBUTION

9720 Wideband LNB 48

9653 Wideband Line Amplifier 48
9654 Wideband Satellite Trunk Amplifier 48
9655 Wideband Splitter 49

9656 Wideband Tap 49
9646 Wideband to Quattro Converter 49

Wideband Satellite Distribution

9720 - 9653 - 9654 LNB - Line Amplifier - Satellite Trunk Amplifier

The first product in this wideband satellite range is the Wideband LNB. It receives any standard Ku satellite signal and generates a Horizontal and Vertical IF signal. Each output contains both the low and the high band of the polarization.

9720

- LNB, able to receive 1 Ku satellite orbital slot
- 1 Horizontal and 1 Vertical output
- low noise
- output frequency range 290-2340 MHz

9653

- sloped gain for compensating coaxial cable losses
- 40-2400 MHz

9654

- separate adjustment for gain and slope on every line
- DC input for powering trunk line amplifier & LNB
- works from 12 to 20 VDC
- 290-2400 MHz

Wideband Satellite Distribution

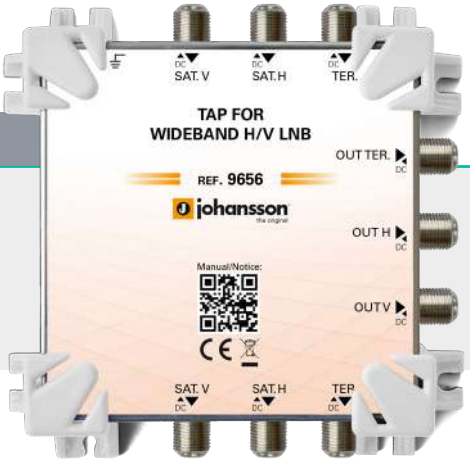
9655 - 9656 - 9646 Splitter - Tap - Quattro converter

EXCELLENT PRODUCT RATING

9655

- 2-way splitter for wideband trunklines (H/V)
- Low insertion loss
- DC power pass
- 40-2400 MHz

9656



- 2-way tap for wideband trunklines (H/V)
- Low insertion loss
- DC power pass
- 40-2400 MHz

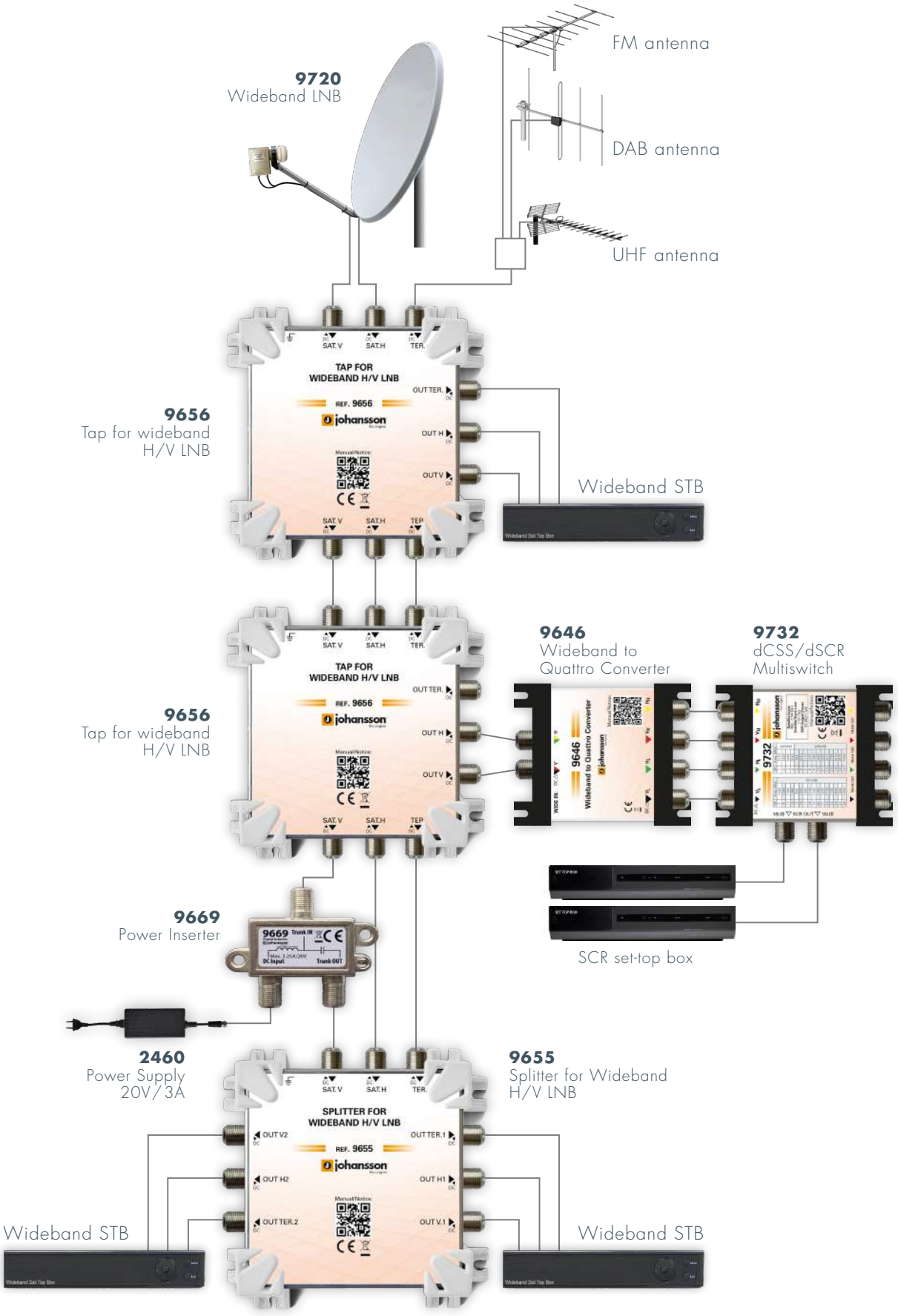
This wideband to quattro converter makes it possible to upgrade a complete system to a wideband application, without disabling the homes that do not have wideband tuners.

9646

- converts a wideband LNB (V,H) into a quattro LNB (VL, HL, VH, HH)
- DC pass through on VL to power the wideband LNB
- ideal for systems with a mix of new wideband set-top boxes and other set-top boxes

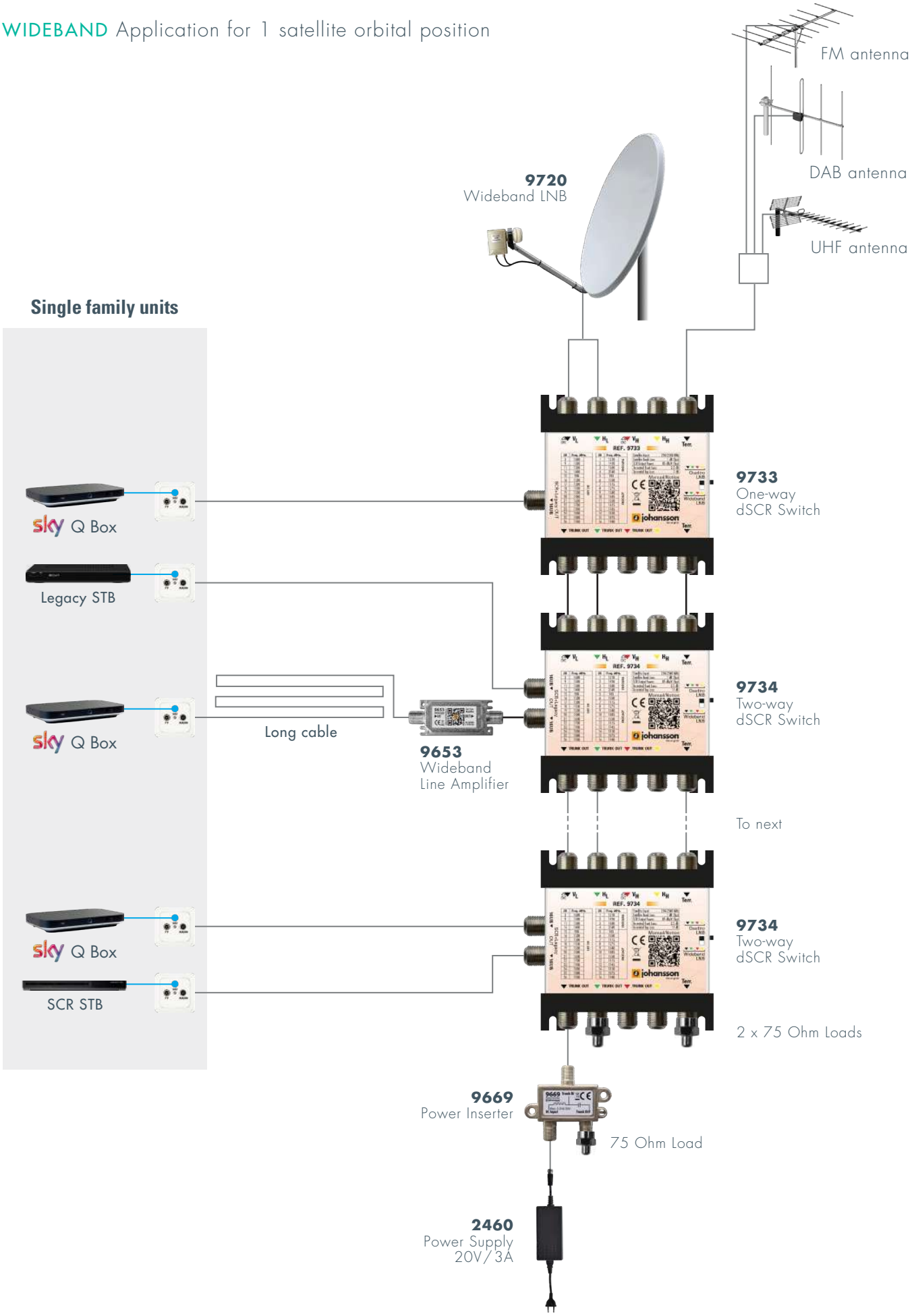
Wideband Satellite Distribution

WIDEBAND Application



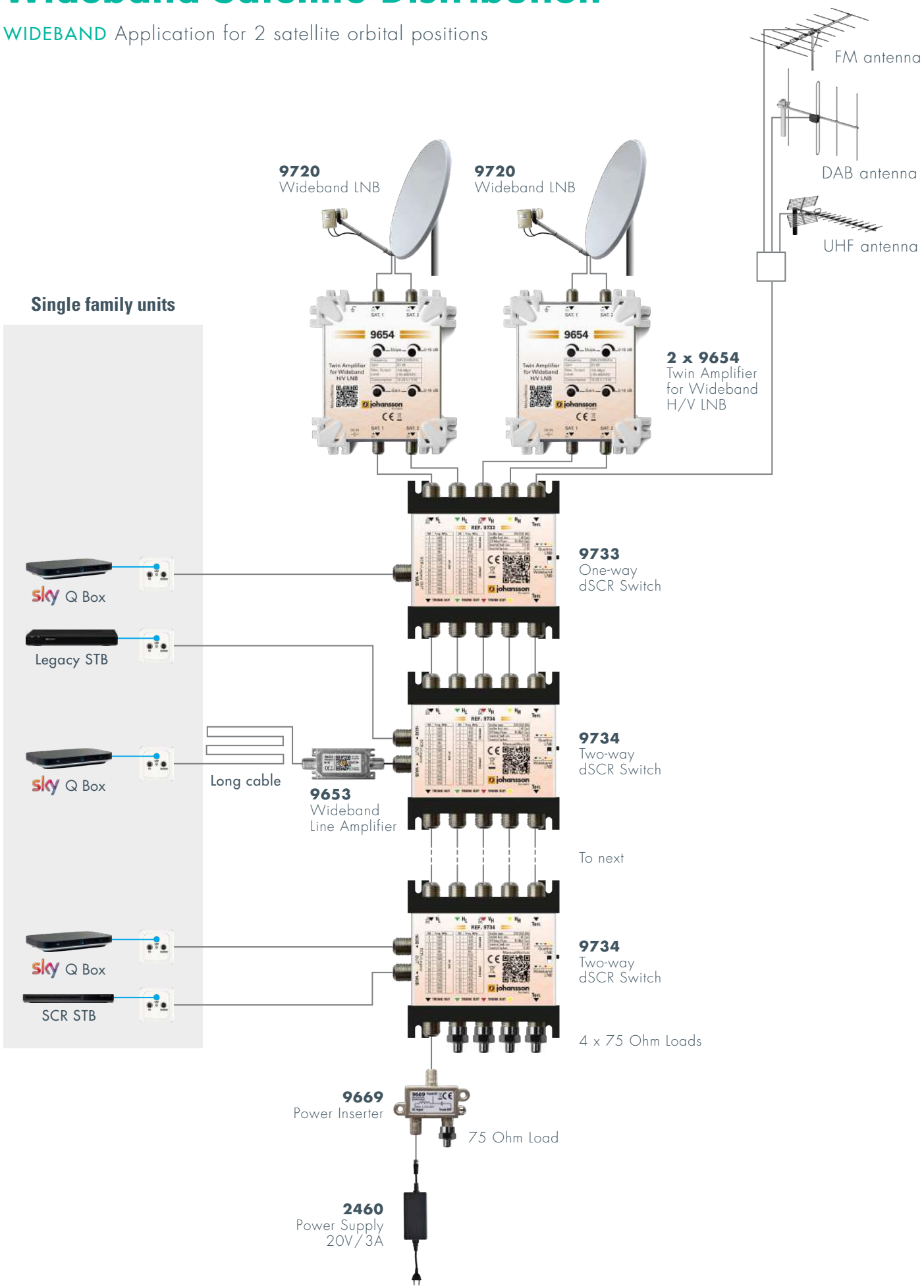
Wideband Satellite Distribution

WIDEBAND Application for 1 satellite orbital position



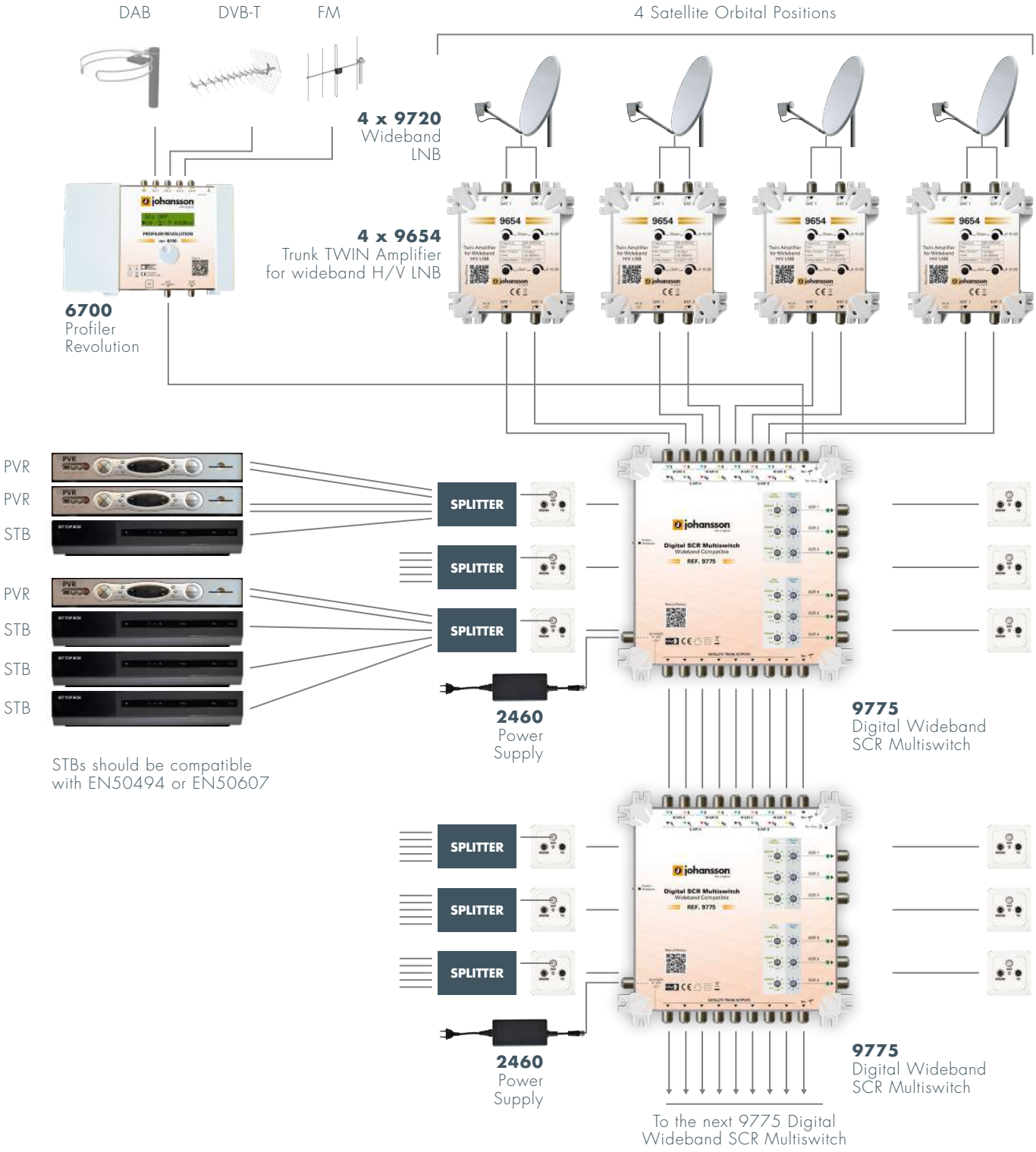
Wideband Satellite Distribution

WIDEBAND Application for 2 satellite orbital positions



Wideband Satellite Distribution

WIDEBAND Application with wideband LNBs



STBs should be compatible with EN50494 or EN50607

Profilers

The market leading Johansson Profilers are a range of programmable filter-amplifiers. The signals coming from multiple antennas can be combined, filtered, amplified and converted. This offers the best possible signal for distribution of TV throughout the building. The profilers are very flexible and can be configured to your specific needs.

We proudly present you our Profiler Revolution. This amazing range of products has no equivalent on the market. The revolutionary technology will make your terrestrial installations much more successful.

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PROFILERS

6700	Profiler Revolution	56	NEW
6702	Profiler Revolution SAT	57	NEW
6710	Profino Revolution	58	NEW
6503	Programmable Filter-Equalizers	59	
6504	Programmable Filter-Equalizers	59	

Profilers

6700 Profiler Revolution

EXCELLENT PRODUCT RATING

The new Johansson Profiler Revolution has no equivalent on the market due to its revolutionary technology.

4G LTE 5G LTE

6700

- programmable terrestrial filter amplifier
- 5 inputs: 4 VHF(DAB)/UHF and 1 FM
- read-out of input level strength: no need for field strength meter
- can process more than 50 channels
- sharpest filters on the market (50 dB on adjacent channels)
- real-time AGC on all individual multiplexes
- flex matrix: complete flexibility in assigning filters from any input
- made in Europe, for worldwide application
- the Profiler Revolution facilitates straightforward configuration and is the most cost-efficient Profiler on the market
- configuration possible in different languages (English, French, Italian, Spanish)
- prepare your configuration file with uCloud
- RED compliant

uCloud
Tools to configure your multimedia devices

		6700
Inputs	-	4 VHF/UHF + 1FM
Outputs	-	1 main (FM-VHF-UHF) + 1 test port (-30dB)
Frequency range	MHz	FM: 88 - 108 I VHF: 174 - 240 I UHF: 470 - 862
LTE Protection	MHz	Automatic selection: 694, 790 or OFF
Input level	dBµV	FM: 37 - 77 I VHF: 40** - 109 I UHF: 40** - 109
FM output power (60dB/IM3)	dBµV	113
VHF/UHF output power (60dB/IM3)	dBµV	120
VHF/UHF output power with 1 MUX	dBµV	113
VHF/UHF output power with 6 MUX	dBµV	110
Conversion	-	Yes (from any VHF-UHF channel to any VHF-UHF channel)
Gain	dB	FM: 35 I VHF: >45 I UHF: >55
Gain adjustment	dB	FM: 20 I VHF/UHF: Channel AGC
General attenuator	dB	20
Slope adjustment	dB	9
Selectivity	dB/ 1MHz	35
Output MER	dB	VHF: 35 I UHF: 35
ESD protection	-	All inputs
Remote voltage for preamp Remote current	V mA	12 or 24 100 (total for the 4 inputs)
SD port	-	Yes (for copy configuration)
Operating temperature	°C	-5 to +50
Power Supply Power Consumption	V W	100 - 240 20
Dimensions	mm	217 x 165 x 59
Weight	kg	0,8

*Patent pending (6700)
** For 64QAM with code rate 3/4

Profilers

NEW

6702 Profiler Revolution SAT

When satellite content must be combined with a terrestrial source, additional and expensive equipment must be installed. With the Profiler Revolution SAT, this problem is solved. The 6702 is a state-of-the-art Profiler Revolution, and an additional Satellite stream band can be added to the output.

4G Lte 5G Lte

6702

- read-out of input level strength: no need for field strength meter
- can process more than 50 channels (Terrestrial and Satellite)
- can convert a wide selection of Terrestrial channels
- sharpest filters on the market (50 dB on adjacent channels)
- real-time AGC on all individual multiplexes
- flex matrix: complete flexibility in assigning filters from any input
- made in Europe, for worldwide application
- the Profiler Revolution SAT facilitates straightforward configuration
- RED compliant

		6702
Inputs	-	1 SAT + 1 FM + 4 VHF/UHF
Outputs	-	1 main (SAT-FM-VHF-UHF) + 1 test port (-30dB)
Frequency range	MHz	SAT: 950 - 2400 I FM: 88 - 108 I VHF: 174 - 240 I UHF: 470 - 862
LTE Protection	MHz	Automatic selection: 694, 790 or OFF
Input level	dBµV	SAT: 40 - 95 I FM: 37 - 77 I VHF: 40** - 109 I UHF: 40** - 109
SAT output power (-35dBc/IM3 2 carriers)	dBµV	119
FM output power (60dB/IM3)	dBµV	113
VHF/UHF output power (60dB/IM3)	dBµV	120
VHF/UHF output power with 1 MUX	dBµV	113
VHF/UHF output power with 6 MUX	dBµV	110
Conversion	-	Yes (from any VHF-UHF channel to any VHF-UHF channel)
Gain	dB	SAT: 40 I FM: 35 I VHF: >45 I UHF: >55
Gain adjustment	dB	SAT: 20 I FM: 20 I VHF/UHF: Channel AGC
Noise figure	dB	SAT: 8
General attenuator	dB	20 (on terrestrial only)
Slope adjustment	dB	SAT: 12 I VHF/UHF: 9
Selectivity	dB/ 1MHz	SAT: 40 (@ 862 MHz) I VHF/UHF: 35
Return loss	dB	10
Output MER	dB	VHF: 35 I UHF: 35
ESD protection	-	All inputs
DC @ VHF/UHF input DC Load current @ VHF/UHF input	V mA	12 or 24 100 (total for the 4 VHF/UHF inputs)
DC @ SAT input DC Load current @ SAT input	- mA	13V/18V/Bypass & 0/22kHz selectable by SW 300
SD port	-	Yes (for copy configuration)
Operating temperature	°C	-5 to +50
Power Supply Power Consumption	V W	100 - 240 25
Dimensions	mm	217 x 165 x 59
Weight	kg	0,85

*Patent pending (6702)
** For 64QAM with code rate 3/4

Profilers

NEW

6710 Profino Revolution

The Profino Revolution has 1 FM, 1 DAB/VHF and 2 UHF inputs.
Up to 20 Channels can be filtered and amplified. The filters on adjacent channels are extremely sharp.

4G LTE 5G LTE

6710

- read-out of input level strength: no need for field strength meter
- can process up to 20 channels (conversion is not possible)
- sharpest filters on the market (50 dB on adjacent channels)
- real-time AGC on all individual multiplexes
- flex matrix: complete flexibility in assigning filters from any input
- made in Europe, for worldwide application
- the Profino Revolution is really easy to install
- RED compliant

		6710
Inputs	-	1 FM + 1 DAB/VHF + 2 UHF
Outputs	-	1 main (FM-DAB-VHF-UHF) + 1 test port (-30dB)
Frequency range	MHz	FM: 88 - 108 I VHF: 174 - 240 I UHF: 470 - 862
LTE Protection	MHz	Automatic selection: 694, 790 or OFF
Input level	dBµV	FM: 37 - 77 I VHF: 45** - 109 I UHF: 45** - 109
FM output power (60dB/IM3)	dBµV	113
VHF/UHF output power (60dB/IM3)	dBµV	115
VHF/UHF output power with 6 MUX	dBµV	105
Conversion	-	No
Gain	dB	FM: 35 I VHF: 35 I UHF: 45
Gain adjustment	dB	FM: 20 I VHF/UHF: Channel AGC
General attenuator	dB	20
Slope adjustment	dB	9
Selectivity	dB/ 1MHz	35
Output MER	dB	VHF: 35 I UHF: 35
ESD protection	-	All inputs
Remote voltage for preamp Remote current	V mA	12 or 24 100 (total for the 3 inputs)
SD port	-	No
Operating temperature	°C	-5 to +50
Power Supply Power Consumption	V W	100 - 240 12
Dimensions	mm	217 x 165 x 59
Weight	kg	0,8

*Patent pending (6710)
** For 64QAM with code rate 3/4

Profilers

6503(L)(UK) - 6504(UK) Programmable Filter-Equalizer

6503L(UK)

- 2 UHF inputs
- 6 UHF clusters from 1 to 7 channels bandwidth
- selectable remote power on all inputs
- LTE protected

6504(UK)

- 3 UHF inputs
- 10 UHF clusters from 1 to 7 channels bandwidth
- selectable remote power on all inputs

		6503L(UK)		6504(UK)		
Input	-	2		3		
Output	-	1		1		
Number of clusters	-	6		-		
Input	-	UHF 1	UHF 2	UHF1	UHF2	UHF3
Channels	-	21 - 60	21 - 60	-		
Frequency range	MHz	470 - 790	470 - 790	470 - 862		
Bandwidth/Cluster	MHz	8 - 56 (1 to 7 Ch.)				
Configuration of clusters	-	6	0	2	8	0
		5	1	2	7	1
		3	3	2	5	3
Gain	dB	5				
Attenuator	dB/ 1 dB step	30	30	-		
Noise figure	dB	6				
Max. input level*	dBµV	95				
Max. output level*	dBµV	75				
Selectivity	-	10dB / 10MHz	10dB / 10MHz	20dB		
Return loss IN/OUT	dB	> 10				
Selectable DC power pass	-	Yes				
Power supply	-	External power adapter: 230 - 240V~ / 5 VDC / Ø2,1 mm DC jack				
Consumption	mA	350		500		
Operating temperature	°C	-5 to +50				
Dimensions	mm	157 x 142 x 65		222 x 142 x 51		

*Terr.: -54 dBc/IM3

Amplifiers

An essential part in the distribution of TV signals over coaxial cables is the amplifier. In domestic applications, this will typically be a masthead preamplifier while large collective installations require high-power distribution amplifiers. With the upcoming LTE (4G and 5G) signals in several countries, big disturbances will arise in the TV systems that are not LTE-protected. This is why we present a whole new range of amplifiers that makes your installations future proof, and offer you the best TV images possible!

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Amplifiers

7773(UK) - 7774(UK) - 7775(UK) Multiband Amplifiers

The new distribution amplifiers from Johansson set the new standard! The amplifiers are fully LTE-ready and have a high gain, ensuring a perfect signal quality throughout the building. Thanks to the new technologies used, the amplifiers are far more efficient than their predecessors.

4G LTE | HIGH EFFICIENCY

7773(UK) I 7774(UK) I 7775(UK)

- 3/4 inputs
- VHF-UHF input with return path (ref. 7774, 7775), ideal for CATV applications
- split-band amplifiers with interstage attenuators and dynamic range of 30
- high gain (up to 40 dB), high output power (>122 dBµV)
- slope adjustment on VHF-UHF (ref. 7774, 7775)
- high input power: up to 110 dBµV (saturation of input virtually impossible)
- 5/12 VDC switchable remote voltage to power a preamplifier
- thanks to the new technology used, the efficiency of the amplifiers is 400% better compared to older amplifiers!
- green solution: 5,5W for high power model / <3W for mid and low-power models
- zamak diecast housing
- detachable power supply included
- -30 dB test output
- UK versions are delivered with UK power plug

		7773(UK)	7774(UK)	7775(UK)
Inputs	-	FM BIII/DAB UHF	FM BIII/DAB UHF VHF-UHF	FM BIII/DAB UHF VHF-UHF
Frequency range	MHz	FM: 88-108 BIII/DAB: 174-240 UHF: 470-790	FM: 88-108 BIII/DAB: 174-240 UHF: 470-790 VHF-UHF: 5-1000 (RP: 5-65)	FM: 88-108 BIII/DAB: 174-240 UHF: 470-790 VHF-UHF: 5-1000 (RP: 5-65)
Gain	dB	FM: 8 to 30 BIII/DAB: 8 to 30 UHF: 20 to 40	FM: -12 to 20 BIII/DAB: -12 to 20 UHF: -4 to 26 VHF-UHF: -4 to 26	FM: 0 to 32 BIII/DAB: 0 to 32 UHF: 5 to 40 VHF-UHF: 5 to 40
Return path loss	dB	-	-2	-2
Slope adjustment	dB	-	VHF-UHF: 0 to 15	VHF-UHF: 0 to 15
Max. input power*	dBµV	90	110	110
Max. output power*	dBµV	110	116	>122
Noise figure	dB	FM: 9 BIII/DAB: 9 UHF: 6	FM: 8 BIII/DAB: 7 UHF: 5 VHF-UHF: 6,5	FM: 8 BIII/DAB: 7 UHF: 5 VHF-UHF: 6,5
Return loss	dB	>10	>10	>10
Remote power	-	UHF: 5 VDC (200 mA) /12 VDC (100 mA)	BIII/DAB: 5 VDC (200 mA) /12 VDC (100 mA) UHF: 5 VDC (200 mA)/12 VDC (100 mA)	BIII/DAB: 5 VDC (200 mA) /12 VDC (100 mA) UHF: 5 VDC (200 mA)/12 VDC (100 mA)
Supply voltage	VAC	200-264	200-264	200-264
Power consumption	W	1,5	3	5,5
Dimensions	mm	238 x 152 x 55		

*Terr.: -60 dBc/IM3

Amplifiers

7720(L)(L2) - 7722(L)(L2) Indoor Amplifiers

7720 I 7720L I 7720L2

- 1 wideband input: 47-862/790/694 MHz (VHF-UHF)
- 2 outputs
- adjustable gain: 13-28 dB
- power LED indicator
- wall and DIN rail mountable

NEW

		7720	7720L	7720L2
Frequency range	MHz	47-862	47-790	47-694
Adjustable gain	dB	13-28		
Noise figure	dB	4,0		
Max. output level	dBµV	101		
Return loss (input/output)	dB	10		
Isolation between outputs	dB	15		
Power	-	230V~/4VA		
Dimensions	mm	110 x 94 x 41		

7722 I 7722L I 7722L2

- 1 input: 40-320 MHz + 470-862/790/694 MHz
- 2 outputs
- adjustable VHF gain: 15-30 dB
- adjustable UHF gain: 18-28 dB
- power LED indicator
- 24 Vdc switchable remote power (except 7722)
- wall and DIN rail mountable

		7722	7722L	7722L2
Frequency range	MHz	40-320 + 470-862	40-320 + 470-790	40-320 + 470-694
Adjustable gain	dB	VHF: 15-30/UHF: 18-28		
Noise figure	dB	3,0		
Max. output level*	dBµV	107		
Return loss (input/output)	dB	10		
Isolation between outputs	dB	15		
Switchable remote power	-	no	yes (24V/55mA)	
Power	-	230V~ /6,9VA		
Dimensions	mm	102 x 76 x 54	137 x 92 x 42	

*Terr.: -60 dBc/IM3

Amplifiers

7724(L)(L2) VHF/UHF Indoor Amplifiers

4G LTE 5G LTE

7724L I 7724L2

- 1 input: 40-320 MHz + 470-790/694 MHz
- 4 outputs
- adjustable VHF gain: 13-28 dB
- adjustable UHF gain: 15-25 dB
- power LED indicator
- 24 Vdc switchable remote power
- wall and DIN rail mountable

			NEW
		7724L I	7724L2
Frequency range	MHz	40-320 + 470-790	40-320 + 470-694
Adjustable gain	dB	VHF: 13-28/UHF: 15-25	
Noise figure	dB	3,0	
Max. output level	dBµV	102	
Return loss (input/output)	dB	10	
Isolation between outputs	dB	15	
Switchable remote power	-	yes (24V/55mA)	
Power	-	230V~ /6,9VA	
Dimensions	mm	137 x 92 x 42	

Amplifiers

9671L - 9672L - 9674L TV-Sat Indoor Amplifiers

9671L

- 1 input/1 output
- LTE (4G) compatible
- adjustable gain
- gain TER: 27/ gain SAT: 32
- fixed slope on satellite
- DC power pass: switchable
- universal input power: 85-240V~

9672L

- 1 input/2 outputs
- LTE (4G) compatible
- adjustable gain
- gain TER: 24/ gain SAT: 28
- fixed slope on satellite
- DC power pass: switchable
- universal input power: 85-240V~

9674L

- 1 input/4 outputs
- LTE (4G) compatible
- adjustable gain
- gain TER: 18/ gain SAT: 22
- fixed slope on satellite
- DC power pass: switchable
- universal input power: 85-240V~

Amplifiers

KIT 7322/2436 - 7328/2436 UHF Preamplifier/Power Supply Kit

- 1 input/1 output
- LTE (4G) rejection
- ultra low-noise
- 10-25 dB adjustable gain
- 15-35 dB adjustable gain (for 7328)
- power indication LED
- 24 VDC operating voltage

- 24 V high-efficiency power supply
- short-circuit protection
- 2 outputs
- power LED
- wall or DIN-rail mountable

KIT 7322 I 2436

KIT 7328 I 2436

		2436
Outputs	-	2
Insertion loss	dB	4-5
Isolation between outputs	dB	10
AC input voltage/Frequency/Power	-	100-230 V~ / 50 Hz / 4,6 W
DC output voltage	VDC	24
Output current	mA	150
Dimensions	mm	95 x 76 x 35

Amplifiers

7329 - 7322 - 7327 - 7328 UHF Preamplifier (LTE/5G)

- 1 input/1 output
- LTE (5G) rejection
- low-noise
- 15-35 dB adjustable gain
- power indication LED
- 24 VDC operating voltage

		7329
Frequency range	MHz	470-694 (Ch. 21-48)
Gain	dB	15 - 35
Noise figure	dB	3,5
Input level	dBµV	82
Output level	dBµV	104
Power supply	VDC	24
Consumption	mA	35
Dimensions	mm	120 x 115 x 50

- 1 input/1 output
- LTE (5G) rejection
- low-noise
- 15-35 dB adjustable gain
- power indication LED
- 24 VDC operating voltage

		7322	7327	7328
Frequency range	MHz	470-790 (Ch. 21-60)		
Gain	dB	10-25	15	15-35
Noise figure	dB	2,0	2,0	3,5
Input level	dBµV	80	78	82
Output level	dBµV	100	97	104
Power supply	VDC	24	5-24	24
Consumption	mA	35	20	35
Dimensions	mm	120 x 115 x 50		

Amplifiers

NEW

7327L2 - 7322L2 VHF/UHF Preamplifier

4G LTE 5G LTE

7327L2 I 7322L2

- 1 input/1 output
- LTE (5G) rejection
- low-noise
- 15-35 dB adjustable gain
- power indication LED
- 24 VDC operating voltage
- RED compliant

		7327L2	I	7322L2
Frequency range	MHz	470-694 (Ch. 21-48)		
Gain	dB	18		10-25
Noise figure	dB	2,0		2,0
Input level	dBµV	78		80
Output level	dBµV	97		100
Dimensions	mm	120 x 115 x 50		

4G LTE 5G LTE

7415L2

- FM input/B.III or DAB input/UHF input
- 1 wideband output
- 12 dB gain on FM
- 15-30 dB adjustable gain on B.III/DAB
- 20-35 dB adjustable gain on UHF
- LTE (4G)
- low-noise
- 24 VDC operating voltage
- wall or mast mountable

		7415L2		
Inputs	-	BII (FM)	BIII/DAB	UHF C21-48
Frequency range	MHz	88-108	170-240	470-694
Gain	dB	12	15-30	33-20
Noise Figure	dB	4	2,0	3,2
Max. input level	dBµV	99	91	84
Max. Output level	dBµV	111	107	108
Power supply	VDC	24		
Consumption	mA	60		
Dimensions	mm	112 x 98 56 mm		

Amplifiers

NEW

7460L2 VHF/VHF-UHF Universal Preamplifiers (5G)

- FM input/B.III or DAB input/UHF input
- 1 wideband output
- 12 dB gain on FM
- 15-30 dB adjustable gain on B.III/DAB
- 20-35 dB adjustable gain on UHF
- LTE (4G)
- low-noise
- 24 VDC operating voltage
- wall or mast mountable

		7460L2	
Inputs	-	BIII/DAB	UHF (Ch. 21-48)
Frequency range	MHz	170-240	470-694
Gain	dB	5-20	20-35
Noise Figure	dB	4,2	2,5
Max. input level	dBµV	107	85
Max. Output level	dBµV	107	103
Power supply	VDC	24	
Consumption	mA	35	
Dimensions	mm	120 x 115 x 50 mm	

Amplifiers

2436 Power Supply

EXCELLENT PRODUCT RATING

- high-efficiency
- 2 outputs
- 24V stabilized
- short-circuit protection
- power LED indicator
- wall or DIN-rail mountable
- horizontal/vertical DIN-rail mounting

		2436
Outputs	-	2
Insertion loss	dB	4-5
Isolation between outputs	dB	10
AC input voltage/Frequency/Power	-	100 - 240 V~ / 50 - 60 Hz / 4,6 W
DC output voltage	VDC	24
Output current	mA	150
Dimensions	mm	95 x 76 x 35

*2434US available with US plug

Amplifiers

ADDITIONAL PRODUCTS

PREAMPLIFIER / POWER SUPPLY KIT		
KIT 7316/2430A	One Band Preamplifier and Power Supply	UHF: 25-40 dB
KIT 7404/2430A	2 inputs Preamplifier and Power Supply	VHF: 10-30 dB / UHF: 25-40 dB
KIT 7415/2430A	3 inputs Preamplifier-combiner and Power Supply	FM: 12 dB / BIII: 10-28 dB / UHF: 20-35 dB
KIT 7422/2430A	3 inputs Preamplifier and Power Supply	VHF: 10-30 dB / UHF: 25-40 dB / UHF: 25-40 dB
KIT 7422E/2430AE	3 inputs Preamplifier and Power Supply	VHF: 10-30 dB / UHF: 25-40 dB / UHF: 25-40 dB
KIT 7490/2430A	2 inputs Preamplifier-combiner and Power Supply	VHF: 10-30 dB / UHF: 25-40 dB

PREAMPLIFIER		
7211	Multiband Preamplifier	UHF + UHF/VHF: 10-30 dB / UHF 25-40 dB
7316	One Band Preamplifier	UHF ch. 21-69, 25-40 dB adjustable
7410	3 inputs Preamplifier-combiner	BIII: 10-30 dB / UHF: 25-40 dB / UHF: 20-35 dB

Distribution Accessories

- Johansson offers a wide range of high-quality accessories for the distribution of terrestrial, cable and satellite TV. All products are designed with the future LTE-networks in mind and make sure your TV distribution system is future-proof!

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Distribution Accessories

6022GSM - 6023C48 - 6023C58 - 6023C59 LTE (4G) + GSM Filter

Long Term Evolution (LTE) is a consequence of the digitization of the TV-signals. Digital signals offer a great bandwidth-advantage, which will be used for next-generation telecommunication applications (4G). This implies the UHF channels 61-69 will no longer be used for TV-purposes, and have to be filtered-out carefully to avoid interference! Our LTE-ready products offer strong filtering capabilities for the UHF channels 61-69 and the GSM-band.

The next LTE evolution is already happening. For the 5G networks, the UHF-channels will be limited to 694MHz (or channel 48). Look for the 5G logo in our catalog to find compatibel products.

6022GSM

- >15 dB LTE rejection
- wall or mast mountable with strap
- indoor and outdoor mountable

Example of outdoor product

		6022GSM
Frequency range	MHz	5-790
Cut off channel	-	60
Insertion loss	dB	1
GSM rejection 880-960 MHz	dB	60
LTE (4G) rejection	dB	20
DC power pass	mA	500
Connectors	-	2 x F female
Mounting	-	Indoor/outdoor (indoor flange provided)
Dimensions	mm	112 x 98 x 56

6023C48 I 6023C58 I 6023C59

- 25 dB LTE rejection
- in-line small housing
- indoor use

NEW

		6023C48	6023C58	6023C59
Frequency range	MHz	5-694	5-774	5-782
Cut off channel	-	48	58	59
Insertion loss	dB	1	1	1
LTE rejection	dB	30	30	25
GSM rejection	dB	25	25	25
DC power pass	mA	500	500	500
Connectors	-	2 x F female	2 x F female	2 x F female
Mounting	-	Indoor Use	Indoor Use	Indoor Use
Dimensions	mm	112 x 98 x 56	112 x 98 x 56	112 x 98 x 56

Distribution Accessories

6030C48(C58) - 6024C48(C58)(C59)(C60) - 6040C48(C58)(C59) LTE (4G) (Tetra) Filters

6030C48 I 6030C58

- 20 dB LTE rejection
- indoor use (direct plug-in mounting behind TV)
- IEC connectors

NEW

		6030C48	603058
Frequency range	MHz	5-694	5-782
Cut off	-	58	
Insertion Loss	dB	1	
LTE (4G) rejection	dB	20	
GSM rejection	dB	25	
DC power pass	mA	500	
Connectors	-	IEC male/female	
Mounting	-	Indoor Use	
Dimensions	mm	67 x 33 x 22	

6024C48 I 6024C58 I 6024C59 I 6025C60

Example of indoor product

- high LTE (4G/5G) rejection
- indoor and outdoor mountable

NEW

		6024C48	6024C58	6024C59	6025C60
Frequency range	MHz	5-694	5-774	5-782	5-790
Cut off channel	-	48	58	59	60
Insertion loss	dB	2,5	2,5	2,5	1,5
LTE (4G/5G) rejection	dB	40	45	40	30
GSM rejection	dB	15	15	15	No
DC power pass	mA	500	500	500	500
Connectors	-	2 x F female	2 x F female	2 x F female	2 x F female
Mounting	-	Indoor/outdoor (indoor flange provided)	Indoor/outdoor (indoor flange provided)	Indoor/outdoor (indoor flange provided)	Indoor/outdoor (indoor flange provided)
Dimensions	mm	112 x 98 x 56	112 x 98 x 56	112 x 98 x 56	112 x 98 x 56

6040C48 I 6040C58 I 6040C59

Example of outdoor product

- UHF/Tetra filter
- indoor and outdoor mountable
- RED compliant

NEW

		6040C48	6040C58	6040C59
Bandwidth	MHz	470-694	470-782	470-774
Channels	-	C21-48	C21-59	C21-58
Insertion loss	dB	1,5		
Rejection	dB	30		35
GSM rejection	dB	30		
DC power pass	mA	500		
Connectors	-	2 x F female		
Mounting	-	Indoor/outdoor (indoor flange provided)		
Dimensions	mm	112 x 98 x 56		

▸ For other products within this category see p. 82.

Distribution Accessories

4502 - 4503 - 4504 - 4506 - 4508 Wideband Indoor Splitters 5-2400 MHz

Compatible with Wideband LNBs

- 2, 3, 4, 6, 8-way wideband splitters
- low insertion loss
- nickel plated zinc diecast housing
- "F"-type connectors
- DC power pass from all output ports to the input port (diode protection)

		4502	4503	4504	4506	4508
Way	-	2	3	4	6	8
Frequency	MHz	5-2400	5-2400	5-2400	5-2400	5-2400
Insertion loss	dB	6,5	11	11	16	18
Isolation	dB	16	20	20	20	20
Return loss in/out	dB	10	10	10	10	10
DC power pass (out/in)	-	2	3	4	6	8
Dimensions (mm)	mm	47x56x21	47x77x21	47x77x21	57x120x25	57x120x25

▸ For other products within this category see p. 82.

Distribution Accessories

1269 - 1281 - 1200A - 1353 TV Combiners

1269

- low-loss
- indoor/outdoor use

		1269	1281	1200A	1353
Inputs (DC power pass=*)	MHz	VHF: 40-230 * UHF: 470-862 *	UHF1: 470-790 * UHF2: 470-790 *	FM: 88-108 VHF-UHF: 40-68 + 175-862 (rej. FM) *	BI-FM: 40-108 * BIII: 170-230 * UHF: 470-862
Insertion loss	dB	VHF: 0,5 UHF: 1,0	UHF1: 4,5 UHF2: 4,5	FM: 1,0 VHF-UHF: 1,0 (FM rejection >20)	BI-FM: 1,0 BIII: 1,0 UHF: 2,0
Dimensions	mm	112 x 98 x 56			

▸ For other products within this category see p. 82.

Distribution Accessories

9208 - 9920 - 9501 - 9506 DiSEqC Switches - TV Sat Combiners

9208

- DiSEqC A/B switch - 2 inputs / 1 output

		9208
Number of inputs	-	2
Frequency range	MHz	950-2150
Insertion loss	dB	2
Isolation	dB	15
Switching control	-	Tone Burst and DiSEqC 1.0
Consumption	mA	25 max.
Dimensions	mm	112 x 98 x 56

9920

- switch for 2 TWIN LNB's combined with terrestrial

		9920
Frequency range	MHz	Terr.: 5-790 - Sat.: 950-2150
Insertion loss	dB	Terr.: 8 max. - Sat.: 4 max.
Switching control	dB	Tone Burst and DiSEqC 1.0/1.1
Isolation each SAT in/out	dB	40 min
Isolation SAT/TERR	dB	30 min
Current	mA	20 mA per receiver
DC power pass on SAT inputs	mA	350 max
Dimensions	mm	112 x 98 x 56

9506

9501

- indoor/outdoor combiner
- DC power pass

		9501	9506
Band/Insertion loss (DC power pass=*)	MHz	VHF-UHF 5-862/1 dB	VHF-UHF 5-862/2 dB
	MHz	SAT* 950-2150 /2 dB	SAT* 950-2150 /2,5 dB
Isolation	dB	> 15 (Terr.) > 30 (Sat.)	> 15 (Terr.) > 40 (Sat.)
Note	-	indoor use	outdoor use
Dimensions	mm	61 x 51 x 16	112 x 98 x 56

Distribution Accessories

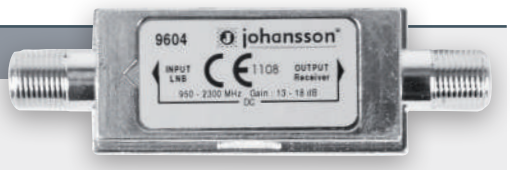
7317 - 9604 - 9653 (Satellite) Line Amplifiers

7317

- low noise UHF line amplifier
- ideal to pump up low level signals and reject impulse noise in DTT reception
- powered with 5-24V of DTT (DVB-T) receiver

		7317
Band	-	UHF C 21- 69
Frequency	MHz	470-862
Gain	dB	15
Noise figure	dB	2,0
Max. Output level	dBµV	102
Consumption	mA	20
Voltage supply range	V	5 to 24
Dimensions	mm	72 x 22 x 17

9604



- sloped gain for compensating coaxial cable losses
- available in 3 versions with different bandwidth
  - 40-2150 MHz
  - 950-2150 MHz
  - 40-2340 MHz (for wide band LNB applications)

		9604	9653
Frequency range	MHz	950-2150	40-2340
Gain	dB	13 (950 MHz) 18 (2150 MHz)	5 (40 MHz) 20 (2340 MHz)
Noise figure	dB	4	7
Max. Output level	dBµV	110	110
Power supply	V	13-18 / 30 mA	13-18 / 60 mA
DC power pass	mA	500 max.	500 max.
Dimensions	mm	72 x 22 x 17	68 x 26 x 16

Distribution Accessories

9609 - 9602 - 9631 Attenuator - DC Block Inserter

9609

- small housing
- adjustable attenuation: 0-20 dB
- DC power pass

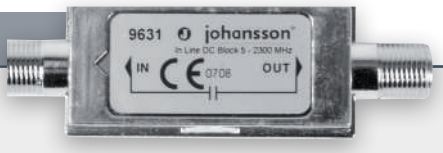
		9609
Frequency range	MHz	700-2150
Attenuation	dB	0-20 adjustable
DC power pass	-	yes
Dimensions	mm	77 x 22 x 17

9602

- block DC voltage to receiver
- pass DC voltage to LNB

		9602
Frequency range	MHz	40-2150
Insertion loss	dB	1
DC power pass	mA	500 max.
Dimensions	mm	61 x 51 x 16

9631



- block DC voltage from input to output

		9631
Frequency range	MHz	5-2300
Attenuation	dB	1
Dimensions	mm	72 x 22 x 17

Distribution Accessories

9620 - 9337 F-F Galvanic Isolator - Priority Switch

9620

- high galvanic isolation of both center and shield
- small design

		9620
Frequency range	MHz	5-2150
Galvanic isolation	VDC	400-800
Capacitor value	nF	center: 1 / shield:4
Dimensions	mm	51 x 14 x 14

9337

- priority switching
- signaling bypass to LNB

		9337
Frequency range:	MHz	950 - 2150
Insertion loss	dB	< 3,5
Isolation	dB	> 15
Signaling bypass to LNB	-	22 KHz tone and 13/18V power
Switch control	-	Priority receiver gets priority (if voltage >10V)
DC loss	V	1.0 max.
Dimensions	mm	61 x 51 x 16

▸ For other products within this category see p. 82.

Distribution Accessories

ADDITIONAL PRODUCTS

TAPS		
4510	1 way tap	5-2300 MHz, 10 dB
4511	1 way tap	5-2300 MHz, 15 dB
4512	1 way tap	5-2300 MHz, 20 dB
4513	1 way tap	5-2300 MHz, 25 dB
4520	2 way tap	5-2300 MHz, 10 dB
4521	2 way tap	5-2300 MHz, 15 dB
4522	2 way tap	5-2300 MHz, 20 dB
4523	2 way tap	5-2300 MHz, 25 dB
4524	2 way tap	5-2300 MHz, 30 dB
4540	4 way tap	5-2300 MHz, 12 dB
4541	4 way tap	5-2300 MHz, 15 dB
4542	4 way tap	5-2300 MHz, 20 dB
4543	4 way tap	5-2300 MHz, 25 dB
4544	4 way tap	5-2300 MHz, 30 dB
4561	6 way tap	5-2300 MHz, 15 dB
4562	6 way tap	5-2300 MHz, 20 dB
4563	6 way tap	5-2300 MHz, 25 dB
4581	8 way tap	5-2300 MHz, 15 dB
4582	8 way tap	5-2300 MHz, 20 dB
4583	8 way tap	5-2300 MHz, 25 dB

For more information please send an e-mail to sales@unitrongroup.com or visit our website www.unitrongroup.com.

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Our flexible team offers you
for **every evolution**
a **custom made solution**

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