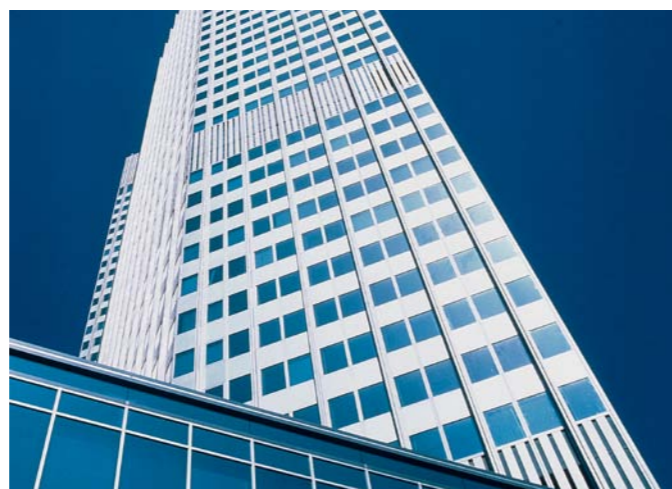




# WISI COMPACT HEADEND Channel Processing



The new **WISI COMPACT** HEADEND System OH is best suited for use in small CATV networks, medium sized residences, high rise buildings, recreational facilities, hospitals, hotels, etc.



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excellence in digital ...



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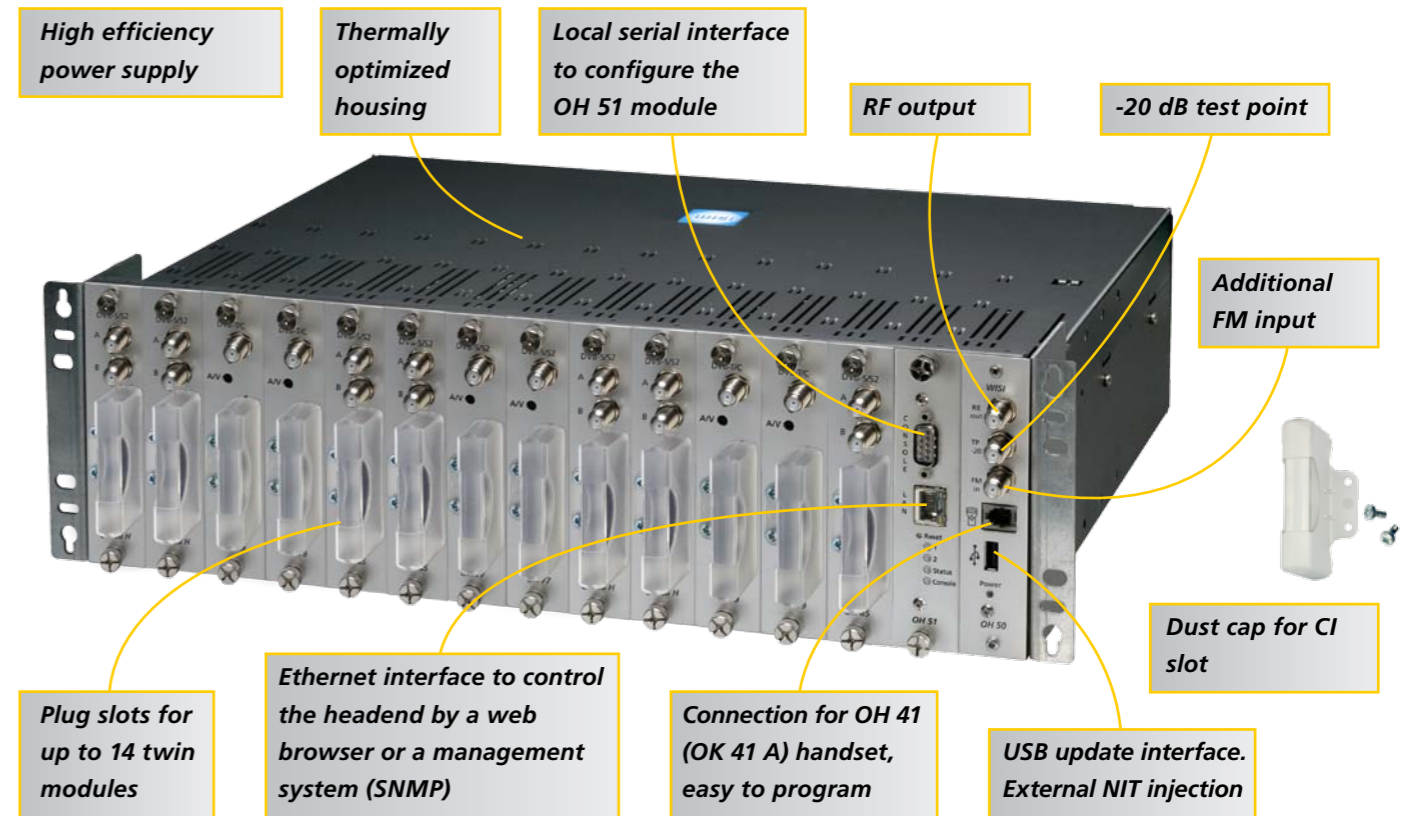


# Communication

*is our life.*

Communication defines our everyday life, informs us, imparts knowledge and experience. It supports our understanding and helps us solving problems.

WISI's highly-motivated staff is fully committed to provide you with the state-of-the-art technology for communication today and tomorrow.



## The new WISI COMPACT HEADEND

### Compact, strong and extremely flexible

Powerful technology, compact dimensions, modular and flexibly expandable; the new **WISI COMPACT** HEADEND System OH combines all the advantages of an innovative and affordable headend.

**WISI COMPACT** HEADEND is easily tailored with up to 14 modules and thus offers optimum channel processing for up to 14/28\* analog and 28 digital channels in a 3 HU 19" rack chassis. Mux function for DVB-S/S2 to QAM as an option.

**WISI COMPACT** HEADEND operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost.

Through its integrated USB connection, the head end system allows pre-programming and facilitates the programming of multiple basic units. The USB connection can also be used to execute software updates.

\* analogue modulator

## Easy Wall or Rack Mounting

The **WISI COMPACT** HEADEND System OH is pre-equipped both for wall installation and for installation in a 19" rack. The material required for installation is already furnished with the basic unit so that a simple installation and configuration of the system is guaranteed.

**WISI COMPACT** HEADEND features a new economy of space for professional headends. Despite the growing number of channels the foot print in many locations becomes a problem. Not so with the headend with the highest functional density in our industry.

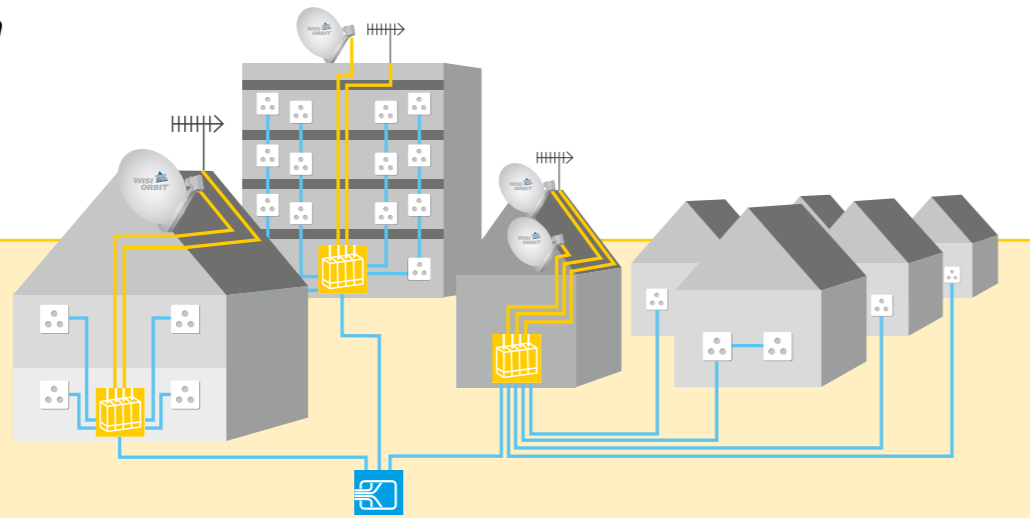


Rack mounting



Wall mounting

## Variety in application



With the high output level of 110 dB $\mu$ V, the new **WISI COMPACT** HEADEND System OH is best suited for use in small CATV networks, medium sized residences, high rise buildings, recreational facilities, hospitals, hotels, etc.

## OH 50 Basic Unit for 14 modules

Basic Unit	OH 50
<b>Booster Frequency range</b>	
TV	47–862 MHz
FM	87.5–108 MHz
<b>Output level</b>	110 dB $\mu$ V
<b>Output attenuator</b>	15 dB/1 dB steps
<b>Input level (FM)</b>	70–100 dB $\mu$ V
<b>FM attenuator</b>	0–30 dB/1dB steps
<b>Test output</b>	-20 dB
<b>Power supply</b>	180...265 V AC (47...63 Hz)
<b>Input voltage</b>	
<b>Max. power consumption</b>	< 195 W
<b>Efficiency</b>	$\geq$ 85 %
<b>LNB power</b>	12.5 V/1.2 A
<b>Dimensions</b>	443x132(3 HU)x351 mm
<b>Connectors</b>	2 x F-connector
<b>FM input/RF output</b>	
<b>Test output</b>	1 x F-connector
<b>Control</b>	RJ 11
<b>Software update</b>	USB
<b>Master slave operation</b>	RJ 12
<b>Operating temperature</b>	-20 °C to +55 °C



- Headend basic unit for analog and digital TV signals
- Slots for 14 modules (28 digital channels)
- 19" rack mounting or wall mounting
- Integrated FM amplifier
- Easy programming with OH 41 (OK 41 A) handset
- Update and pre-programming via USB stick
- Remote monitoring module OH 51
- High output power
- High efficiency



Wall mounting bracket/  
19" installation kit

## OH 76 DVB-S $\rightarrow$ analog TV, CI

- Reception of a DVB-S signal and processing to an analog-TV-channel
- Demultiplexing and decoding of MPEG-2 signals
- CI interface
- Input frequency range 950–2150 MHz
- Output frequency range 45–862 MHz
- Vestigial sideband modulator



Module	OH 76 DVB-S – RF analogue channel processing with CI (MPEG-2)
<b>Input frequency range</b>	950–2150 MHz
<b>Input frequency steps</b>	1 MHz
<b>Input level range</b>	47–70 dB $\mu$ V
<b>Modulation scheme</b>	QPSK
<b>Symbol rate</b>	1–45 MS/s
<b>FEC outer code</b>	RS (204,16)
<b>FEC inner code</b>	Conv. (1/2, 2/3, 3/4, 5/6, 7/8)
<b>Output frequency range</b>	45–862 MHz
<b>Output frequency steps</b>	250 kHz
<b>Output stability</b>	$\pm$ 30 kHz
<b>Output channel bandwidth</b>	7/8 MHz
<b>Output level (1 dB steps)</b>	90–105 dB $\mu$ V
<b>TV standards</b>	B/G, D/K, I, L, M, N
<b>Video standards</b>	PAL, SECAM, NTSC
<b>Video format</b>	4:3, 16:9, 4:3-Zoom
<b>Video decoder</b>	MPEG-2 (ML@MP)
<b>Audio decoder</b>	MPEG-2 (L1/L2)
<b>Audio format</b>	Mono, A2-Stereo, Dual
<b>S/N video (CCIR-rec. 567-1)</b>	> 57 dB
<b>S/N audio</b>	> 50 dB
<b>Stability of output level</b>	$\pm$ 1.5 dB
<b>Spurious outside TV channel</b>	> 55 dB
<b>Connectors RF</b>	F-connector
<b>Current consumption</b>	ca. 0.80 A
<b>Power consumption</b>	< 10 W
<b>LNB power</b>	12 V/0.5 A max., DiSEqC 2.0
<b>Operating temperature</b>	-20 °C to +55 °C

## OH 76 F DVB-S $\rightarrow$ analog TV, FTA

- Reception of a DVB-S signal and processing to an analog-TV-channel
- Demultiplexing and decoding of MPEG-2 signals
- Input frequency range 950–2150 MHz
- Output frequency range 45–862 MHz
- Vestigial sideband modulator



Module	OH 76 F DVB-S – RF analogue channel processing FTA (MPEG-2)
<b>Input frequency range</b>	950–2150 MHz
<b>Input frequency steps</b>	1 MHz
<b>Input level range</b>	47–70 dB $\mu$ V
<b>Modulation scheme</b>	QPSK
<b>Symbol rate</b>	1–45 MS/s
<b>FEC outer code</b>	RS (204,16)
<b>FEC inner code</b>	Conv. (1/2, 2/3, 3/4, 5/6, 7/8)
<b>Output frequency range</b>	45–862 MHz
<b>Output frequency steps</b>	250 kHz
<b>Output stability</b>	$\pm$ 30 kHz
<b>Output channel bandwidth</b>	7/8 MHz
<b>Output level (1 dB steps)</b>	90–105 dB $\mu$ V
<b>TV standards</b>	B/G, D/K, I, L, M, N
<b>Video standards</b>	PAL, SECAM, NTSC
<b>Video format</b>	4:3, 16:9, 4:3-Zoom
<b>Video decoder</b>	MPEG-2 (ML@MP)
<b>Audio decoder</b>	MPEG-2 (L1/L2)
<b>Audio format</b>	Mono, A2-Stereo, Dual
<b>S/N video (CCIR-rec. 567-1)</b>	> 57 dB
<b>S/N audio</b>	> 50 dB
<b>Stability of output level</b>	$\pm$ 1.5 dB
<b>Spurious outside TV channel</b>	> 55 dB
<b>Connectors RF</b>	F-connector
<b>Current consumption</b>	ca. 0.80 A
<b>Power consumption</b>	< 10 W
<b>LNB power</b>	12 V/0.5 A max., DiSEqC 2.0
<b>Operating temperature</b>	-20 °C to +55 °C



**OH 77/OH 77 D**  
**DVB-S/S2 → analog TV, CI**

- Reception of a DVB-S/S2 signal and processing to an analog-TV-channel
- MPEG-2/4 decoding
- CI interface
- HD → SD downscaling
- NICAM audio processing
- Input frequency range 950–2150 MHz
- Output frequency range 45–862 MHz
- Vestigial sideband modulator
- OH 77 D: decoding of Dolby\* Digital sound



**OH 79/OH 79 D**  
**DVB-T/C → analog TV, CI**

- Reception of a DVB-T/C signal and processing to an analog-TV-channel
- MPEG-2/4 decoding
- CI interface
- HD → SD downscaling
- NICAM audio processing
- Input frequency range 110–878 MHz
- Output frequency range 45–862 MHz
- Vestigial sideband modulator
- OH 79 D: decoding of Dolby\* Digital sound



**OH 85**  
**Twin DVB-S → QAM**

- Reception of two DVB-S signals and transmodulation into two QAM-channels
- Optional remultiplexer funktion
- 2 CI interfaces
- Input frequency range 950–2150 MHz
- Output frequency range 47–862 MHz



**OH 85 H**  
**Twin DVB-S/S2 → QAM**

- Reception of two DVB-S/S2 signals and transmodulation into two QAM-channels
- Optional remultiplexer funktion
- 2 CI interfaces
- Input frequency range 950–2150 MHz
- Output frequency range 47–862 MHz



Module	OH 77 DVB-S/S2 – RF analogue channel processing with CI (MPEG-4)
Input frequency range	950–2150 MHz
Input frequency steps	1 MHz
Input level range	47–70 dBμV
AFC	± 10 MHz
Modulation scheme	QPSK, 8PSK
Symbol rate	1–45 MS/s
FEC inner code	LDPC (1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10)
Spectral inversion	C-Band/KU-Band
Output frequency range	45–862 MHz
Output frequency steps	250 kHz
Output stability	± 30 kHz
Output channel bandwidth	7/8 MHz
Output level (1 dB steps)	90–105 dBμV
Spurious outside TV channel	> 55 dB
TV standards	B/G, D/K, I, L, M, N
Video standards	PAL, SECAM, NTSC
Video format	4:3, 16:9, 4:3-Zoom
Video decoder	MPEG-2 (ML@MP) H.264 (MPEG-4)
Audio decoder	MPEG-2 (L1/L2), AAC
Audio format	Mono, A2-Stereo, Dual, NICAM
S/N video (CCIR-rec. 567-1)	> 57 dB
S/N audio (color test pattern)	> 50 dB
Stability of output level	± 1.5 dB
Connectors RF input/output	F-connector
Current consumption	ca. 0.80 A
Power consumption	< 10 W
LNB power	12 V/0.5 A max., DiSEqC 2.0
Operating temperature	-20 °C to +55 °C

Module	OH 79 DVB-T/C – RF analogue channel processing with CI (MPEG-4)
Input frequency range	110–878 MHz
Input frequency steps	250 kHz
Input level range	47–90 dBμV
Channel bandwidth	7/8 MHz
COFDM spectral	2 k and 8 k FFT
COFDM modulation scheme	QPSK, 16-QAM, 64-QAM
COFDM guard interval	1/32, 1/16, 1/8, 1/4
COFDM FEC inner code	Conv., K=7, G=1/2, 2/3, 3/4, 4/5, 5/6, 7/8
QAM modulation scheme	16-, 32-, 64-, 128-, 256-QAM
QAM symbol rate	1–7 MBaud
Output frequency range	45–862 MHz
Output frequency steps	250 kHz
Output stability	± 30 kHz
Output channel bandwidth	7/8 MHz
Output level (1 dB steps)	90–105 dBμV
Spurious outside TV channel	> 55 dB
TV standards	B/G, D/K, I, L, M, N
Video standards	PAL, SECAM, NTSC
Video format	4:3, 16:9, 4:3-Zoom
Video decoder	MPEG-2 (ML@MP) H.264 (MPEG-4)
Audio decoder	MPEG-2 (L1/L2), AAC
Audio format	Mono, A2-Stereo, Dual, NICAM
S/N video (CCIR-rec. 567-1)	> 57 dB
S/N audio	> 50 dB
Stability of output level	± 1.5 dB
Connectors RF	F-connector
Current consumption	ca. 0.80 A
Power consumption	< 10 W
Operating temperature	-20 °C to +55 °C

Module	OH 85 (SD) Twin DVB-S – QAM transmodulator with CI
Input frequency range	950–2150 MHz
Input frequency steps	1 MHz
Input level range	47–80 dBμV
AFC	± 10 MHz
Modulation scheme	QPSK, 8PSK
Symbol rate	1–45 MS/s
FEC inner code	LDPC (1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10)
Spectral inversion	C-Band/KU-Band
Output frequency range	47–862 MHz
Output frequency steps	500 kHz
Output stability	± 30 kHz
Output channel bandwidth	2x8 MHz
Output level	88–103 dBμV
Stability of output level	± 1 dB
Spurious outside TV channel	> 50 dB
SNR	≥ 45 dB
MER	≥ 40 dB
Modulation	16-, 32-, 64-, 128-, 256-QAM
Symbolrate	3.45–6.9 MS/s
FEC outer code	RS (204,188,16)
Spectral inversion	normal/inverted
Interleaving	Conv., I=12
Bit stuffing	yes
PCR correction	yes
PCR correction	yes
Connectors RF	F-connector
Current consumption	ca. 0.83 A/12 V
Power consumption	< 10 W
LNB power	12 V/0.5 A max., DiSEqC 2.0
Operating temperature	-20 °C to +55 °C

Module	OH 85 H (SD/HD) Twin DVB-S/S2 – QAM transmodulator with CI
Input frequency range	950–2150 MHz
Input frequency steps	1 MHz
Input level range	47–80 dBμV
AFC	± 10 MHz
Modulation scheme	QPSK, 8PSK
Symbol rate	1–45 MS/s
FEC inner code	LDPC (1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10)
Spectral inversion	C-Band/KU-Band
Output frequency range	47–862 MHz
Output frequency steps	500 kHz
Output stability	± 30 kHz
Output channel bandwidth	2x8 MHz
Output level	88–103 dBμV
Stability of output level	± 1 dB
Spurious outside TV channel	> 50 dB
SNR	≥ 45 dB
MER	≥ 40 dB
Modulation	16-, 32-, 64-, 128-, 256-QAM
Symbolrate	3.45–6.9 MS/s
FEC outer code	RS (204,188,16)
Spectral inversion	normal/inverted
Interleaving	Conv., I=12
Bit stuffing	yes
PCR correction	yes
PCR correction	yes
Connectors RF	F-connector
Current consumption	ca. 0.83 A/12 V
Power consumption	< 10 W
LNB power	12 V/0.5 A max., DiSEqC 2.0
Operating temperature	-20 °C to +55 °C

\* Dolby and the double-D symbol are trademarks of Dolby Laboratories.

**OH 86**  
Twin DVB-T/C → QAM

- Reception of two DVB-T/C signals and transmodulation into dual QAM-TV channels (bonded)
- Input frequency range 110–878 MHz
- Output frequency range 47–862 MHz



Module	OH 86 (SD/HD) Twin DVB-T/C – QAM-transmodulator
Input frequency range	110–878 MHz
Input frequency steps	250 kHz
Input level range	47–90 dBμV
COFDM spectral	2 k and 8 k FFT
Modulation scheme	QPSK, 16-QAM, 64-QAM
Guard interval	1/32, 1/16, 1/8, 1/4
FEC inner code	Conv., K=7, G=1/2, 2/3, 3/4, 4/5, 5/6, 7/8
QAM modulation scheme	16-, 32-, 64-, 128-, 256-QAM
QAM symbol rate	1–7 MBaud
Output frequency range	47–862 MHz
Output frequency steps	500 kHz
Output stability	±30 kHz
Output channel bandwidth	2x8 MHz
Output level	88–103 dBμV
Stability of output level	±1 dB
Spurious outside TV channel	≥50 dB
SNR	≥45 dB
MER	≥40 dB
Modulation	16-, 32-, 64-, 128-, 256-QAM
Symbolrate	3.45–6.9 MS/s
FEC outer code	RS (204,188,16)
Spectral inversion	normal/inverted
Interleaving	Conv., I=12
Bit stuffing	yes
PCR correction	yes
PCR correction	yes
Connectors RF	F-connector
Current consumption	0.83 A/12 V
Power consumption	<10 W
Operating temperature	-20 °C bis +55 °C

**OH 88 H**  
Twin DVB-S/S2 → COFDM

- Reception of two DVB-S/S2 signals and transmodulation into two COFDM-channels
- 2 CI interfaces
- Input frequency range 950–2150 MHz
- Output frequency range 47–862 MHz



Module	OH 88 H (SD/HD) Twin DVB-S/S2 – COFDM transmodulator with CI
Input frequency range	950–2150 MHz
Input frequency steps	1 MHz
Input level range	47–80 dBμV
AFC	±10 MHz
Modulation scheme	QPSK, 8PSK
Symbol rate	1–45 MS/s
FEC inner code	LDPC (1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10)
Spectral inversion	C-Band/KU-Band
Output frequency range	47–862 MHz
Output frequency steps	250 kHz
Output stability	±30 kHz
Output channel bandwidth (bonded)	2x7/8 MHz
Output level	82–97 dBμV
Stability of output level	±1 dB
Spurious outside TV channel	>50 dB
SNR	≥41 dB
MER	≥37 dB
Modulation	QPSK, 16-, 64-QAM
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Guard interval	1/4, 1/8, 1/16, 1/32
FFT Mode	2k, 8k
Bit stuffing	yes
PCR correction	yes
PID filtering	yes
NIT editing	yes
Connectors RF	F-connector
Current consumption	0.83 A/12 V
Power consumption	<10 W
LNB power	12 V/0.5 A max., DiSEqC 2.0
Operating temperature	-20 °C to +55 °C

**OH 89**  
Twin DVB-T/C → COFDM

- Reception of two DVB-T/C signals and transmodulation into two COFDM-channels (bonded)
- 2 CI interfaces
- Input frequency range 110–878 MHz
- Output frequency range 47–862 MHz



Module	OH 89 (SD/HD) Twin DVB-T/C – COFDM transmodulator with CI
Input frequency range	110–878 MHz
Input frequency steps	250 kHz
Input level range	47–90 dBμV
Channel bandwidth	7/8 MHz
COFDM spectral	2 k and 8 k FFT
COFDM modulation scheme	QPSK, 16-QAM, 64-QAM
COFDM guard interval	1/32, 1/16, 1/8, 1/4
COFDM FEC inner code	Conv., K=7, G=1/2, 2/3, 3/4, 4/5, 5/6, 7/8
QAM modulation scheme	16-, 32-, 64-, 128-, 256-QAM
QAM symbol rate	1–7 MBaud
Output frequency range	47–862 MHz
Output frequency steps	250 kHz
Output stability	±30 kHz
Output channel bandwidth (bonded)	2x7/8 MHz
Output level	82–97 dBμV
Stability of output level	±1 dB
Spurious outside TV channel	>50 dB
SNR	≥41 dB
MER	≥37 dB
Modulation (COFDM)	QPSK, 16-, 64-QAM
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Guard interval	1/4, 1/8, 1/16, 1/32
FFT Mode	2k, 8k
Bit stuffing	yes
PCR correction	yes
PID filtering	yes
NIT editing	yes
Connectors RF	F-connector
Current consumption	0.5 A/12 V
Power consumption	<10 W
Operating temperature	-20 °C to +55 °C

**OH 38**  
A/V Modulator

- Modulation of 2 A/V signals to 2 analog TV channels
- Multi standard operation
- Vestigial sideband stereo modulator, independently adjustable in 250 kHz steps
- Input for Video/audio with BNC/RCA
- Output frequency range 45–862 MHz



Module	OH 38 Twin A/V-Modulator
Video input level	1 V ± 0.4 V
Video input bandwidth	20 Hz–5 MHz
Audio input impedance	600/20 k Ohm
Audio input level	-4 dBm/0.5 V eff.
Audio level range	+6 dB...-6 dB
Audio input bandwidth	40–15000 Hz
Output frequency range	45–862 MHz
Output frequency steps	250 kHz
Output stability	±30 kHz
Output channel bandwidth	2x7/8 MHz
Output level (1 dB steps)	90–105 dBμV
TV standards	B/G, D/K, I, L
Audio format	Mono, A2-Stereo, Dual
S/N video (CCIR-rec. 567-1)	>57 dB
S/N audio	>50 dB
Stability of output level	±1.5 dB
Spurious outside TV channel	>55 dB
Current consumption	0.85 A/12 V
Power consumption	<10 W
Operating temperature	-20 °C to +55 °C

**OH 45  
RF Converter**

- Conversion of one analog TV channel in the range of 45–862 MHz
- Automatic gain control from 50–90 dB $\mu$ V
- Deactivation of AGC for manual gain adjustment
- High IF selection by two SAW filters. Adjacent channel operation at input and output



Module	OH 45 Channel Converter
Input frequency range	45–862 MHz
Input frequency steps	250 kHz
Input channel bandwidth	7/8 MHz
Input level range	50–90 dB $\mu$ V
AGC range	≥40 dB
Output frequency range	45–862 MHz
Frequency steps	250 kHz
Output channel bandwidth	7/8 MHz
Output level (1 dB steps)	95–105 dB $\mu$ V
Group delay (-0.5...4.43 MHz)	<80 ns
S/N video (CCIR-rec. 567-1)	>57 dB
S/N audio	>50 dB
Stability of output level	±1 dB
Spurious outside TV channel	>55 dB
Connectors RF	F-connector
Current consumption	0.5 A/12 V
Power consumption	<10 W
OH 45 module	
Operating temperatur	-20 °C to +55 °C

**Accessories for OH 50 –  
the scope of delivery includes**

**Wall mounting bracket/19" installation kit**

- Rail-type bracket for wall mounting or 19" cabinet mounting



**Accessories – optional**

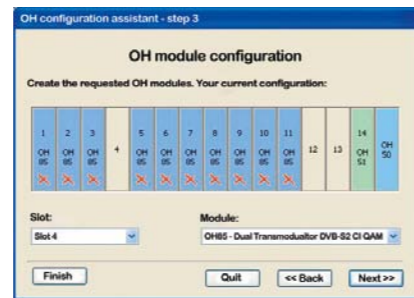
**OH 41 Handset**

- Programming of parameters
- With a data memory, illuminated display and LED lighting



**OH 51 Remote monitoring module**

- For programming and monitoring system parameters, for example in hotels or residences, with a self-explanatory German/English user interface
- Monitoring up to 2 basic units with 1 module



# COMPACT HEADEND OH

## Sample Application in a hotel

