

TSMP range of analogue digital modulators receivers and re-modulators

DVB-T Digital modulators, HDMI in
 UHF-VHF analogue modulators with stereo options.
 Digital sat receivers for free to air
 Digital sat receivers with conditional access modules
 FM radio tuner remodulator modules
 Agile channel convert VHF/UHF DVB-T/T2 Freeview
 COFDM receiver to PAL Video
 Sat ,re mux to DVB-T

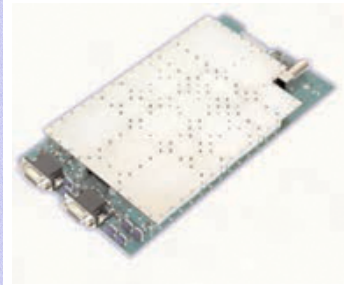
Specifications subject to change



19" RACK 4U

Brackets also supplied for wall mounting

TSMP-MMTQ



Twin analogue modulator

Remote programming & monitoring via internet ipm option



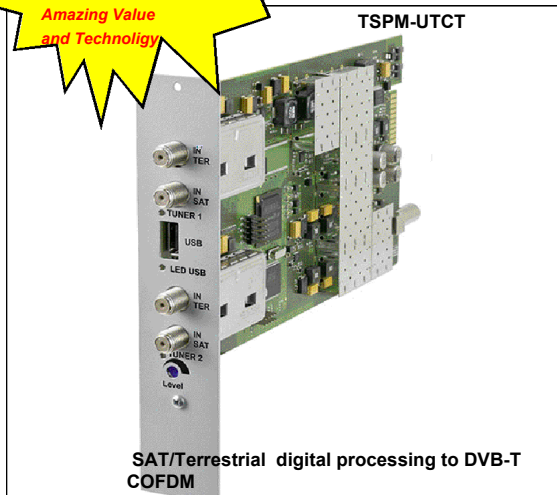
Digital Freesat or Digital Freeview Converted to Freeview in one compact unit
 Amazing Value and Technology



TSMP-PTTI
 Twin Freeview to PAL AV out receiver



Modulator
 Multistandard
 PAL/SECAM/NTSC
 Agile 47-860MHz



TSMP-UTCT

SAT/Terrestrial digital processing to DVB-T
 COFDM

TSMP-200 for two single modules



TSMP-H4TCT



DVB-T modulator
 MPEG4 encoding
 4x HDMI inputs

TSMP-H4TCT Specification

Video Encoding	MPEG-4 AVC / H.264
Input	HDMI
Encoding	1920x1080_60P ; 1920x1080_50P ; 1920x1080_60i ; 1920x1080_50i Full HD 1280x720_60P ; 1280x720_50P – HD ready
Audio Encoding	MPEG1 Layer II / AAC/LC
Sampling Rate / Sample rate	48 KHz
Output	DVB-C or DVB-T
Bandwidth	7, 8 MHz
Modulation	16 QPSK, 16 QAM, 64 QAM
MER	≥ 38 dB
Frequency	112–862 MHz
RF output level	80 dBμV
Power consumption	15 W
Operation temp.	0...45 °C

TCLP2.9 12VDC3A
 Switch mode psu
 For TSMP 200 £16.35



DTL 2
 Link lead between twin sat receiver and analogue modulators

£14.75



DTL 1
 Link lead between receiver and analogue modulator

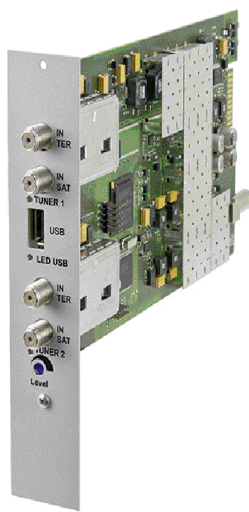


£4.90

Please note ,some older or non HD TV sets may need MPEG2 encoding .

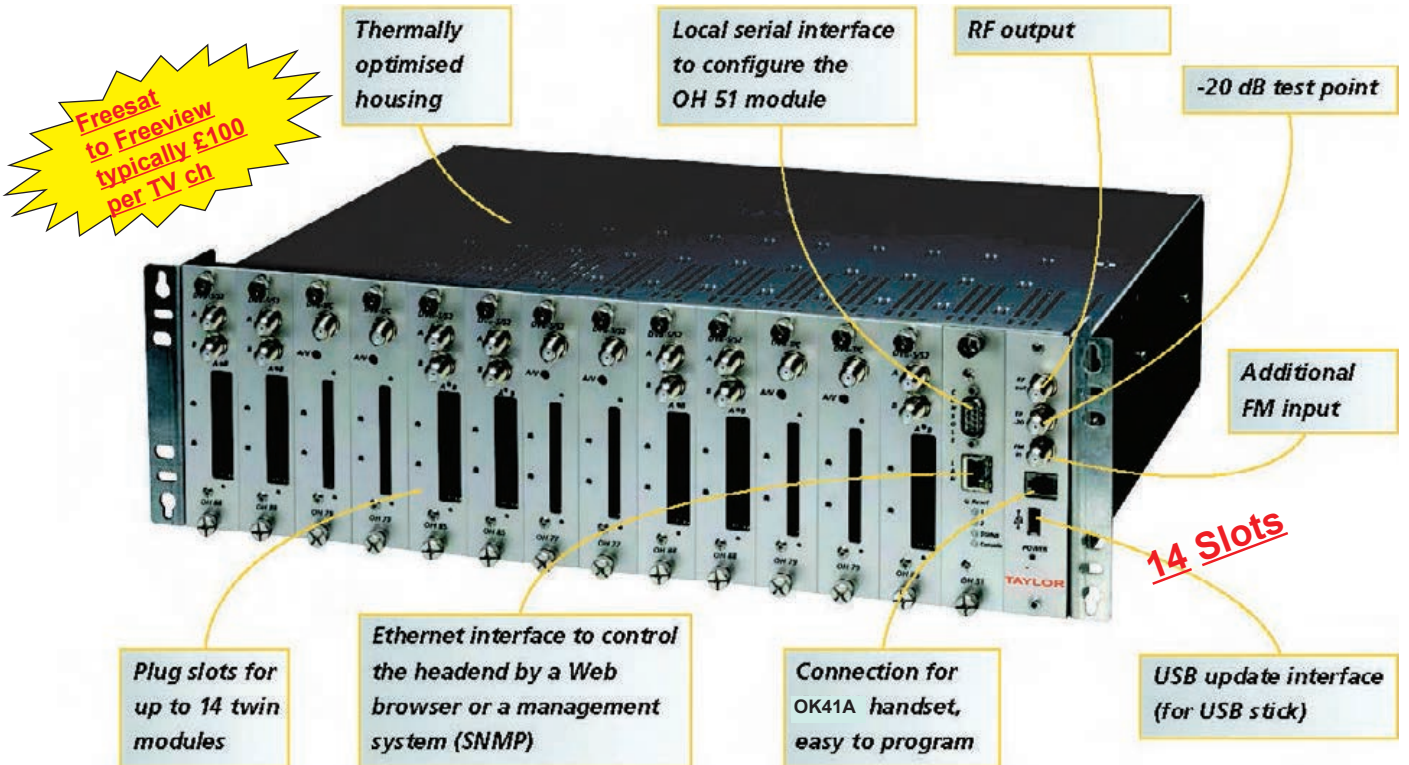
For MPEG 2 Encoding see page 40, 44, 47-49

Type	Description	Price
TSMP-2000ipm	4U 19" Rack base unit (177mm deep) and programmer. With remote monitoring and programming via the internet. PSU 180-265 AC > Includes combiner for ten modules, 20dB test socket. 180-265VAC , max power consumption 115W ,50/60Hz. Power available for LNB's 18VDC 500mA per LNB total 1A .	£487.00
TSMP-200T	Base unit and programme for two twin modules. Requires 12V PSU ,2.5A max	£210.00
TSMP-H4TCT	DVB-T Modulator , 4 HDMI Inputs, modules can be fitted into a TSMP2000 4U rack ,that s 24 , TV programs into digital TV format.Max six modules in TSMP 2000ip	£1,418.48
TSMP-UTCT	Converts 2 sat DVBS/S2 or 2 terrestrial digital DVB-T/2 multiplexes into, 2 DVB-T multiplexes ,Functions include editing LCN,NIT,and TSP, Via LAN connection using a PC.	£491.74
TSMP-UTCT-CI	As above (TSMP-UTCT) but with 2 x CAM slots.	£590.01
TSMP-MMQ	TV Modulator module Video in 1V pk -1dB 75%. Audio 500mV rms 10K%, adjustable -6dB . Frequency agile, adjacent channel performance, 47-860MHz. Multistandard B/G,D/K,I,M and N. Diff gain typ 5%, Diff phase typ 5 deg. Variable attenuator 10dB. Output level when fitted into base unit 100dBuV. AV in via 15 pin D socket	£113.74
TSMP-MMTQ	Twin TV Modulator module. Video in 1V pk -1dB 75%. Audio 500mV rms 10K%, adjustable -6dB. Frequency agile, adjacent channel performance, 47-860MHz. Multistandard B/G, D/K, I, M and N. Diff gain typ 5%, Diff phase typ 5 deg. Variable attenuator 10dB . Output level when fitted into base unit 100dBuV. AV in via 15 pin D socket	£180.41
TSMP-MSTQ	Twin TV Stereo Modulator module for B/G Video in 1V pk -1dB 75%. Audio 500mV rms 10K%, adjustable -6dB . Frequency agile, adjacent channel performance, 47-860MHz, PAL B/G, Diff gain typ 5%, Diff phase typ 5 deg. Variable attenuator 10dB . Output level when fitted into base unit 100dBuV. AV in via 15 pin d socket	£248.18
TSMP-MSTQ	Twin TV Stereo Modulator module for B/G Video in 1V pk -1dB 75%. Audio 500mV rms 10K%, adjustable -6dB . Frequency agile, adjacent channel performance, 47-860MHz, PAL B/G, Diff gain typ 5%, Diff phase typ 5 deg. Variable attenuator 10dB . Output level when fitted into base unit 100dBuV. AV in via 15 pin d socket	£248.18
TSMP-PSTI	QPSK Twin Digital Sat Receiver for free to air broadcasts.Sky and Free sat . AV output. . Requires modulator .LNB control 14-18V ,22kHz ,DISEqC. With CAM module .Two tuners ,select any programs from any multiplex.	£367.64
TSMP-S2T Discontinued see above TSMP-UTCT TSMP-UTCT-CI	QPSK Digital Sat receiver demodulator LNB control 14-18V ,22kHz ,DISEqC. With demodulation and remodulation to DVB-T COFDM. Output 90dB uV adjustable. Intergrated CAM slot. Up to 10 TV programs,selected from a sat multipexes depending on the compression and bandwidth of each TV program and can be processed and modulated on to 8MHz COFDM UHF or VHF channels. Check out FTA programs available on each sat multi[plex. Power consumption 12W . Max six modules in TSMP 2000ip.	£591.82
TSMP-TV-TVDTQ	Twin frequency agile UHF/VHF channel convertor with AGC. Freq range input and output 47-862MHz. Input 65-85dBuV, F connector. TV standards B/G, D/K I, M, N COFDM digital. Very low phase noise synthesizers,improves MER.	£380.86
TSMP-PT	Freeview DVB-T COFDM receiver 147-230mHz/470-862mHz .COFDM 2k,8k Video out 1vpk-pk,audio-6 to +6dB. Output connector 15 pin D socket	£225.11
TSMP-PTT	Twin Freeview DVB-T COFDM receiver 147-230mHz/470-862mHz .COFDM 2k,8k Video out 1vpk-pk,audio-6 to+6dB. Output connector via two 15 pin D sockets.One tuner ,select any two programs from one multiplex.	£251.61
TSMP-T2C-AVT	Twin Freeview DVB/T2 COFDM receiver 147-230mHz/470-862mHz .COFDM 2k,8k Video out 1vpk- pk,audio-6 to+6dB. Output connector both channels via one 15 pin D socket.Use this on new installations!	£428.59
TSMP-PTTI	Twin Freeview DVB-T COFDM receiver 147-230mHz/470-862mHz .COFDM 2k,8k Video out 1vpk-pk,audio-6 to+6dB. Output connectors two 15 pin D sockets. Two tuners ,select any two programs from any multiplex.	£309.84



- TSMP DBP 2m D plug to AV Phono lead £7.65
 - TSMP DB 2m D plug to BNC Video Phono audio lead £7.65 for 5m leads add £1.90
 - TSMP DS 2m D plug to scart lead £7.65
 - TSMP DBPS 2m D plug to AV stereo Phono lead £8.90
- [See bottom of page 37 for D to D leads](#)

- *Rack mounted head end that can be customized and monitored and controlled via the internet.
- *Composite Video Audio modulated to PAL B/G D/K I,L
- *DVB-S free to air MPEG 2&4 to PAL B/G D/K I,L M,N with CI interface
- *DVB-S /S2 free to air MPEG 2&4 to PAL B/G D/K I,L M,N with CI interface
- *DVB-T/C free to air MPEG 2&4 to PAL B/G D/K I,L M,N with CI interface
- *DVB-S /S2 free to air MPEG 2&4 to COFDM with CI interface
- *DVB-T/C free to air MPEG 2&4 to COFDM with CI interface
- *DVB-S /S2 free to air MPEG 2&4 to COFDM with CI interface
- *DVB-S /S2 free to air MPEG 2&4 to QAM with CI interface
- *Composite Video Audio and SDI ,modulated to QAM and COFDM

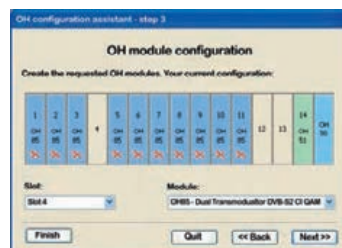


OH50 Base unit



OH41 Programmer £49.00

OH51 Remote Monitoring module





Wall or rack mounting brackets

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

OH 50	Base Unit (3U)
Amplifier Frequency range	
TV	47–862 MHz
FM	87.5–108 MHz
Output level	110 dB _V
Output attenuator	15 dB / 1 dB steps
Input level (FM)	70–100 dB _V
FM attenuator	31 dB / 1dB steps
Test output	- 20 dB
Power supply	
Input voltage	180...265 V AC (47-63 Hz)
Max. power consumption	< 195 W
Efficiency	≥ 85 %
LNB power	12.5 V 1.2 A
Dimensions	443 x 132 (3 HU) x 351 mm
Connectors	
FM input/RF output	2 x F-connector
Test output	1 x F-connector
Control	RJ 11
Software update	USB
Master slave operation	RJ 12
Operating temperature range	- 20 °C to + 40 °C

- * Reception of a DVB-T/C signal and processing to an analog-TV-channel per module
- * Demultiplexing and decoding of MPEG-2 and MPEG-4 signals
- * Built-in CI interface
- * NICAM audio processing
- * Input frequency range 110–858 MHz
- * Output frequency range 45–862 MHz
- * Vestigial sideband modulator



OH79D	DVB-T/C to Analogue UHF/VHF
with CI (MPEG-4)	
Input frequency range	110–858 MHz
Input frequency steps	250 kHz
Input level range	47–90 dB _V
Channel bandwidth	7/8 MHz
COFDM spectral	2k and 8k FFT
COFDM modulation scheme	QPSK, 16QAM, 64QAM
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
Frequency steps	250 kHz
Stability of output frequency	± 30 kHz
Output channel bandwidth	7/8 MHz
Output level (1dB steps)	95–105 dB _V
Spurious inside TV channel	> 55 dB
Spurious outside a TV channel	> 55 dB
TV standards	B/G, D/K, I, L, M, N
Video standard	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, Stereo, Dual, NICAM
S/N video (CCIR-rec. 567-1)	> 58 dB
S/N audio (color test pattern)	> 50 dB
Stability of output level	± 1 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.
Operating temperature range	- 20 °C to + 40 °C

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



OH 76	DVB-S to Analogue UHF/VHF
With CI	
Input frequency range	950–2150 MHz
Input frequency steps	1 MHz
Input level range	47–70 dB _V
Modulation scheme	QPSK
Frequency steps	1 MHz
Symbol rate	1–45 MS/s
FEC outer code	RS (204,16)
FEC inner code	Conv. (1/2, 2/3, 3/4, 5/6, 7/8)
Output frequency range	45–862 MHz
Frequency steps	250 kHz
Stability of output frequency	± 30 kHz
Output channel bandwidth	7/8 MHz
Output level (1dB steps)	95–105 dB _V
TV standards	B/G, D/K, I, L, M, N
Video standard	PAL, SECAM, NTSC
Video format	4:3, 16:9, 4:3-Zoom
Video decoder	MPEG-2 (ML @ MP)
Audio decoder	MPEG-2 (L1/L2)
Audio format	Mono, Stereo, Dual
S/N video (CCIR-rec. 567-1)	≥ 58 dB
S/N audio (color test pattern)	> 50 dB
Stability of output level	± 1 dB
Spurious inside TV channel	> 55 dB
Spurious outside TV channel	> 55 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.
Operating temperature range	- 20 °C to + 40 °C

* with 22 kHz/DiSEqC modulator to control multiswitches

- * Reception of a DVB-S/S2 signal and processing to an analog-TV-channel
- * Demultiplexing and decoding of MPEG-2 and MPEG-4 signals
- * Built-in CI interface
- * NICAM audio processing
- * Input frequency range 950–2150 MHz
- * Output frequency range 45–862 MHz
- * Vestigial sideband modulator



OH77	DVB-S/S2 to Analogue UHF/VHF
with CI (MPEG-4)	
Input frequency range	950–2150 MHz
Input frequency steps	1 MHz
Input level range	47–70 dB _V
AFC	± 10 MHz
Modulation scheme	QPSK, 8PSK
Symbol rate	10–30 MS/s
FEC inner code LDPC	(1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10)
Spectral inversion X	C-Band/KU-Band
Output frequency range	45–862 MHz
Frequency steps	250 kHz
Stability of output frequency	± 30 kHz
Output channel bandwidth	7/8 MHz
Output level (1dB steps)	95–105 dB _V
Spurious inside TV channel	> 55 dB
Spurious outside a TV channel	> 55 dB
TV standards	B/G, D/K, I, L, M, N
Video standard	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, Stereo, Dual, NICAM
S/N video (CCIR-rec. 567-1)	> 58 dB
S/N audio (color test pattern)	> 50 dB
Stability of output level	± 1 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.
Operating temperature range	- 20 °C to + 40 °C

* with 22 kHz/DiSEqC modulator to control multiswitches

- * Modulation of 2 AV or SDI signals to 2 QAM or COFDM TV channels
- * Video resolution adjustable from 1.5-9Mb/s
- * Connectors for audio/video with BNC/3.5mm jack
- * Connectors for SDI with BNC/3.5mm /jack
- * SDI audio input embedded or 2 x 3.5mm Jack



OH66	Twin AV/SDI, MPEG 2 to QAM, COFDM.
Composite video Input level 1 V _{ss} (± 0.4V), Frequency range 20 Hz ... 5 MHz	
MPEG 2 Video processing ,ISO/IEC 13818-2, MP@ML (4:2:2)	
Bit rate ,CBR & VBR 1,5 – 9 Mb/s in 1.5Mb/s steps;	
Picture size 720 pixel horizontal, 576 pixel vertical	
Teletext extraction from analogue video signal	
Picture format support for 4:3 and 16:9 automatic detection by WSS	
PID setting automatic;	
Manual overwriting possible	
PSI/SI settings automatic creation of PAT/PMT/SDT	
NIT setting with LCN Optional with CS77	
Input audio	
Input format Analogue (left/right) or digital (SDI with embedded audio)	
Frequency range 40 Hz ... 15 kHz	
Audio processing	
Sampling frequency 32/44,1/48 kHz	
Encoding standard MPEG 1 L1/L2 ISO/IEC 13818-3	
Bit rate up to 192 kbit/s	
Mode stereo, joint stereo, dual, mono	
Output	
QAM or COFDM* modulation can be selected by the control software	
Output frequency range 47–862 MHz	
Spurious outside TV channel ≥ 50 dB	
QAM-Mode	
Modulation scheme 16-, 32-, 64-, 128-, 256-QAM	
Output frequency steps 500 kHz	
Output channel bandwidth 8 MHz	
Output level 88–103 dB _μ V	
MER ≥ 40 dB	
Symbolrate 3.45–6.9 MS/s	
Bit stuffing yes	
PCR correction yes	
COFDM-Mode*	
Modulation scheme COFDM	
Output frequency steps 250 kHz	
Output channel bandwidth 7/8 MHz	
Output level 82–97 dB _μ V	
MER ≥ 37 dB	
Modulation of single carriers 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	
General data	
Connectors	
Video- / Audio-input per channel 1 x BNC / 1 x stereo jack socket 3.5 mm	
RF-output F-connector	
Operating temperature range - 20°C to +55°C	

- * Modulation of 2 AV signals to 2 analog TV channels
- * Multi standard operation
- * Stereo capable vestigial sideband modulator, independently adjustable in 250 kHz steps
- * Interface for audio/video with BNC/Phono(RCA)
- * Output frequency range 45–862 MHz



OH38	Twin AV-Analogue Modulator
Video input level	1 V ± 0.4 V
Video input bandwidth	20 Hz–5 MHz
Audio input impedance	600 / 10 k Ohm
Audio input level (for nom. deviativ)	- 4 dBm / 1 kHz
Audio level range -	9 dB... + 5 dB
Audio input bandwidth	40–15000 Hz
Output impedance	75 Ohm
Output frequency range	45–862 MHz
Frequency steps	250 kHz
Stability of output frequency	± 30 kHz
Output channel bandwidth	7/8 MHz
Output level (1 dB steps)	± 1 dB
TV standards	B/G, D/K, I, L
Audio format	Mono, Stereo, Dual(not NICam)
S/N video (CCIR-rec. 567-1)	> 58 dB
S/N audio (color test pattern)	> 50 dB
Stability of output level	± 1 dB
Spurious inside TV channel	> 55 dB
Spurious outside TV channel	> 55 dB
Power consumption	< 8 W
Operating temperatur range	- 20 °C to + 40 °C

- Reception of two DVB-S/S2 signals and transmodulation into dual COFDM-TVchannels
- 2 built-in CI interfaces
- Input frequency range 950–2150 MHz
- Output frequency range 110–858 MHz



OH88H	Twin DVB-S/S2 to COFDM
with CI	
Input frequency range	950–2150 MHz
Input frequency steps	1 MHz
Input level range	47–70 dB_V
AFC	± 10 MHz
Modulation scheme	QPSK, 8PSK
Symbol rate	2–45 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	110–858 MHz
Frequency steps	1 MHz
Stability of output frequency	± 30 kHz
Output channel bandwidth	2 x 8 MHz
Output level	95–105 dB_V
Stability of output level	± 1 dB
Spurious inside TV channel	> 50 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
PID filtering	yes
Connectors RF input/output	F-connector
Current consumption	ca. 0.85 A
Power consumption	< 10 W
LNB power* 1	2 V / 0.5 A max.
Operating temperature range	- 20 °C to + 40 °C

* with 22kHz/DiSEqC modulator to control multiswitches

- * Reception of two DVB-T/C signals and transmodulation into dual COFDM-TVchannels (bonded)
- * Input frequency range 110–858 MHz
- * Output frequency range 110–858 MHz



OH892	Twin DVB-T/C to COFDM
with CI	
Input frequency range	110–858 MHz
Input frequency steps	250 kHz
Input level range	47–90 dB_V
Channel bandwidth	7/8 MHz
COFDM spectral	2k and 8k FFT
COFDM modulation scheme	QPSK, 16QAM, 64QAM
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	110–858 MHz
Frequency steps	1 MHz
Stability of output frequency	± 30 kHz
Output channel bandwidth	2 x 8 MHz
Output level	95–105 dB_V
Stability of output level	± 1 dB
Spurious inside TV channel	> 50 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
PID filtering	yes
Connectors RF input/output	F-connector
Current consumption	ca. 0.85 A
Power consumption	< 10 W
LNB power* 1	2 V / 0.5 A max.
Operating temperature range	- 20 °C to + 40 °C

OH51A.
Remote Monitoring module. Two OH50 units can be monitored and config-ured via the internet.



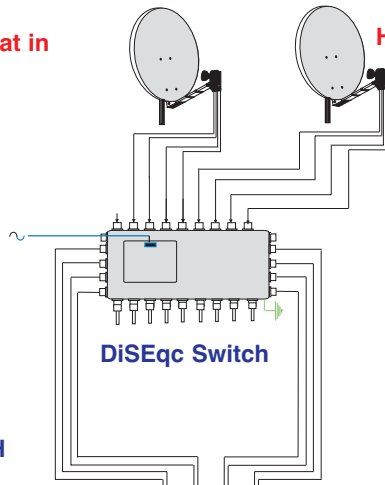
OH45
DVB-T/T2 ch converter

Useful for changing to lower frequencies and consequently lower cable losses



Freesat in

Hotbird in



1 x OH 50
4 x OH 88H
Dual units

8 x Freeview DVB-T muxes out using 4 modules ,add more modules for more multiplexes



OH 50	Basic unit for 14 modules; FM amplifier, power supply; USB interface	£429.75
OH 51A	Management module, Web browser, SNMP	£108.47
OH 38	Dual AV modulator, no channel bonding	£246.38
OH 45	Terrestrial DVB-T/T2 channel converter 45-862 MHz,internal SAW filter.7/8 MHz	£240.38
OH 66	Twin AV or SDI input MPEG 2 encoder to QAM or COFDM. 82- 97dBuV , 47-862MHz	£684.18
OH 76	DVB-S to PAL/Secam/NTSC	£212.89
OH 77	DVB-S/DVB-S2/MPEG2/MPEG4 to PAL/Secam/NTSC	£378.55
OH 79D	DVB-S2/MPEG4 to PAL/Secam/NTSC	£447.57
OH 85H	Dual DVB-S/DBV-S2 to QAM transmodulator; HD, 2 CI, bit stuffing,	£459.08
OH 88H	Dual DVB-S/DVB-S2 to COFDM transmodulator, HD, 2 CI, bit stuffing,	£564.26
OH 892	Dual DVB-T/DVB-C to COFDM transmodulator, 2 CI, bit stuffing, PCR,	£619.04

USB Interface Updates:
Received via internet can be transferred to the Headend by USB stick without PC.
Preprogramming:
Can be done in office and transferred
To the Headend for quick installation.



High definition DVB-T
COFDM modulator encoder.
30-860MHZ

MPX-HDMI-AV DVBT



Inputs Video Audio, via
RCA, or HDMI

£167.95

HDMI input only
version £120.00

Crisp Clear HD pictures
on large screen TV

Shipping post office
3 days £3.90
UPS next day £9.90 Ex VAT

Supplied with HDMI and RCA (Phono) Cables

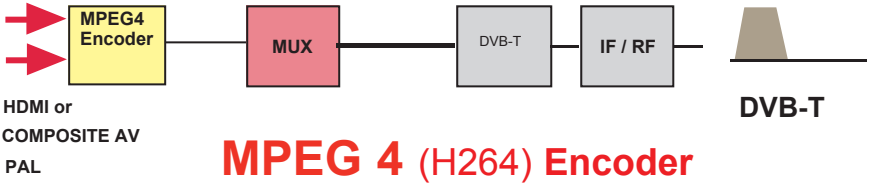
Full HD
1080

1080p & 1080i encoding

HDMI Encoding Section		
Video	Encoding	H.264 MP@L 3.0/3.1/4.0
	Input	Output
	480@59.94/60p	480@60p
	480@59.94/60i	480@30p
	576@50i	576@25p
Resolution	720@50/59.94/60p	720@50/59.94/60p
	1080@50i	1080@25p
	1080@59.94/60i	1080@30p
	1080@59.94/60p	1080@30p
Aspect Ratio	16:9, 4:3	
Bit rate	1.000~18.000 Mbps	
Audio	Encoding	MPEG1 layer 2
	Sample rate	48KHz
	Bit rate	64, 96, 128, 192, 256, 320kbps



DVB-T Modulator Section	
Standard	DVB-T COFDM
Bandwidth	6M, 7M, 8M
Constellation	QPSK, 16QAM, 64QAM
Code rate	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval	1/32, 1/16, 1/8, 1/4
Transmission Mode:	2K, 8K
MER	≥31dB
RF frequency	150~950 MHz, 0.1KHz step
RF output level	-47~0 dBm (60~107 dBμV), 1db step
System	
RF mix in ATT	10 dB
Management	Local LCD + control buttons
Upgrade	USB
General	
Power supply	DC 12V
Dimensions	183*110*50mm
Weight	< 1kg



PSU Included

For MPEG 2 Encoding see page 40 .44. 47-49 .

HDMI sources sometimes have HDCP. (High bandwidth digital protection) that sometimes restricts use. OK with most set top boxes

HDMI video ,can also can be unstable if impulse electrical noise gets into the HDMI lead , a common problem with set top boxes , TV screens and DVR,s. Also satellite receiver software updates ,sometimes require a re boot! A simple solution is to fit a remote power reset that can be purchased from B&Q for about £10.00 .



Control via front panel or PC connected to modulator

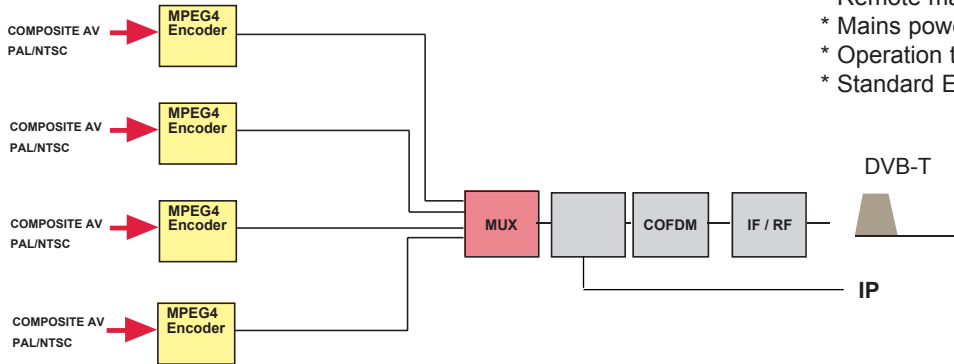
Video and Audio MPEG 4 and 2 encoders to IP. DVB-T COFDM version includes both DVB-T and IP out

Composite Audio Video (PAL).

Into MPEG4 or 2 encoder and then modulated into DVB-T

- * RF loop through
- * MPEG2/4 AVC H.262.H264 encoding available
- * LCN Function
- * Modulation QPSK, 16QAM, 64QAM COFDM
- * FFT mode 2K or 8K
- * Channel bandwidth 7-8MHz
- * Output level 97dBuV
- * Level adjustment 15dB
- * Audio Encoding MPEG1 Layer (1*Stereo or 2*mono)
- * MER typ ≥42dB
- * Guard intervals 1/4,1/8,1/16,1/32
- * Code rate 1/2,2/3,3/4,5/6,7/8
- * IP out
- * ASI out
- * LCD + control buttons
- * Remote management Web NMS
- * Mains power 100-240V AC
- * Operation temperature 0-35 Deg C
- * Standard EN300744

Example



Please note ,some older or non HD TV sets may need MPEG2 encoding.

All DVB-T modulators on this page also have IP out so as well as distributing on a CATV system for TV sets ,the IP out can be connected to a computer network and PC,s or tablets used to receive video and audio. The local area network needs to have the capacity in bandwidth to accommodate the number of TV programmes distributed.

MPX AV4 DVB-T AV R	MPEG 4. Quad Encoder, COFDM modulator,rack mounted	4 x AV input,PAL/NTSC stereo audio	£829.84
MPX AV8 DVB-T AV R	MPEG 4. Eightfold Encoder, COFDM modulator,rack mounted	8 x AV input,PAL/NTSC stereo audio	£1,185.97
MPX AV4 DVB-T AV R 2	MPEG 2. Quad Encoder, COFDM modulator,rack mounted	4x AV input,PAL/NTSC stereo audio	£829.84

Specification and [prices](#) subject to change without notice. Prices excluding VAT

MPEG 4 (H264) and MPEG 2 (option) (H262) Encoder Modulators

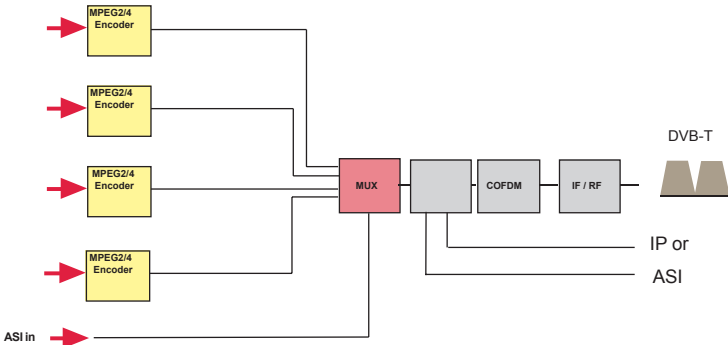
High definition or Standard definition DVB-T encoder. COFDM modulator. 30-860MHZ



DVB-T COFDM version includes both DVB-T and IP out, systems can be configured to provide all modulated programmes, distributed via coax and via a local area network at the same time.

Embedded Audio Encoding MPEG1 Layer II(1x Stereo or 2 x mono)

Example of MPEG 2 and 4 encoding



MPEG4 or MPEG2 can be configured, then modulated into DVB-T.
 DVB-T2 available on request at an additional cost.
 DVB-T2 is not normally needed on CATV systems due to available bandwidth. A modulator above with 4 HD inputs has the capacity to modulate up to 16 mgbits per HD TV program.

Very low latency when using MPEG 2 encoding, mode 1.
 Example, 1080i@50, Encoding, typical latency utilising maximum available bandwidth (mgbits) 0.17 seconds, 720p@50, 0.086 seconds. This is typical latency using a good quality set top box or TV. MPEG4 encoding can have latency at approximately double of MPEG2. Very useful for time critical applications

Specifications

Encoding section

Video

Encoding [MPEG2 or MPEG4 H.264, see options below](#)

Input HDMI x 4 & x 8 or SDI x 4

Resolution 1920*1080_60i, 1920*1080_50i, 1280*720_60p, 1280*720_50P 720*480_60i, 720*576_50i

[Option on request 1920*1080_60P, 1920*1080_50P, MPEG4 AVC/H.264 only](#), not recommended uses excessive bandwidth in mux, no noticeable difference compared to 1080i, not normally used for broadcasting or CATV networks

Low delay Normal, mode 1 mode 2

Symbol rate 5.000~9.000Mpsps adjustable

J 83A

Constellation 16/32/64/128/256QAM

bandwidth 8M

J 83B

Constellation 64QAM/ 256QAM

bandwidth 6M

J 83C

Constellation 64QAM/ 256QAM

bandwidth 6M

Modulation options

DVB-T

Standard EN300744

Bandwidth 6M, 7M, 8M

Constellation QPSK, 16QAM, 64QAM,

Code rate 1/2, 2/3, 3/4, 5/6, 7/8.

Guard Interval 1/32, 1/16, 1/8, 1/4

Transmission Mode: 2K, 8K

MER ≥42dB

RF frequency 30 to 960MHz, 1KHz steps

RF Out COFDM DVB-T out

RF output level 77 to 97 dbμV Adjustable

DVB-C

Standard J.83A, J.83B, J.83C

MER ≥42dB

RF frequency 30 to 960MHz, 1KHz steps

RF output level 77 to 97 dbμV Adjustable

MPX-HD/SDI 4DVBT,R HDMI-P	MPEG 4. Quad Encoder, COFDM modulator, rack mounted	4 x HDMI inputs,	£1,550.23
MPX-HD/SDI 8DVBT,R HDMI-P	MPEG 4. Eightfold Encoder, COFDM modulator, rack mounted	8 x HDMI inputs	£2,229.25
No IP out on the two above .			
MPX-HD/SDI 2DVBT,R SDI	MPEG 4 Dual Encoder, COFDM modulator, rack mounted	2 x SDI inputs, embedded audio	£1,351.10
MPX-HD/SDI 4DVBT,R SDI	MPEG 4 Quad Encoder, COFDM modulator rack mounted	4 x SDI inputs, embedded audio	£1,799.00
MPX-HD/SDI 4 IP,R SDI	MPEG 4 Quad Encoder, IP Output rack mounted	4 x SDI inputs, embedded audio	£1,590.00
MPX-HD/SDI 2DVBT,R HDMI 2/4	MPEG 4/2 Dual Encoder, COFDM modulator, rack mounted	2 x HDMI inputs	£1,541.20
MPX-HD/SDI 4DVBT,R HDMI 2/4	MPEG 4/2 Quad Encoder, COFDM modulator, rack mounted	4 x HDMI inputs	£1,771.65
MPX-HD/SDI 2DVBT,R SDI 2/4	MPEG 4/2 Dual Encoder, COFDM modulator, rack mounted	2 x SDI inputs, embedded audio	£2,015.00
MPX-HD/SDI 4DVBT,R SDI 2/4	MPEG 4/2 Quad Encoder, COFDM modulator, rack mounted	4 x SDI inputs, embedded audio	£2,371.00

All DVB-T COFDM modulators on this page also come with IP out unless otherwise stated.

Specification and prices subject to change without notice.
 Prices plus VAT

HDMI input is sometimes unable to capture from some copy protected HDMI sources, such as blue ray players, if HDCP encryption is embedded in the video /audio stream, doesn't normally apply to set top boxes or normal DVD player. HDCP strippers are available from other vendors.

HDMI video, can also can be unstable if impulse electrical noise gets into the HDMI lead, this can be due to the HDCP master key going corrupt due to electrical noise, so ensure screened HDMI cables are used and high voltage cables are not installed nearby.

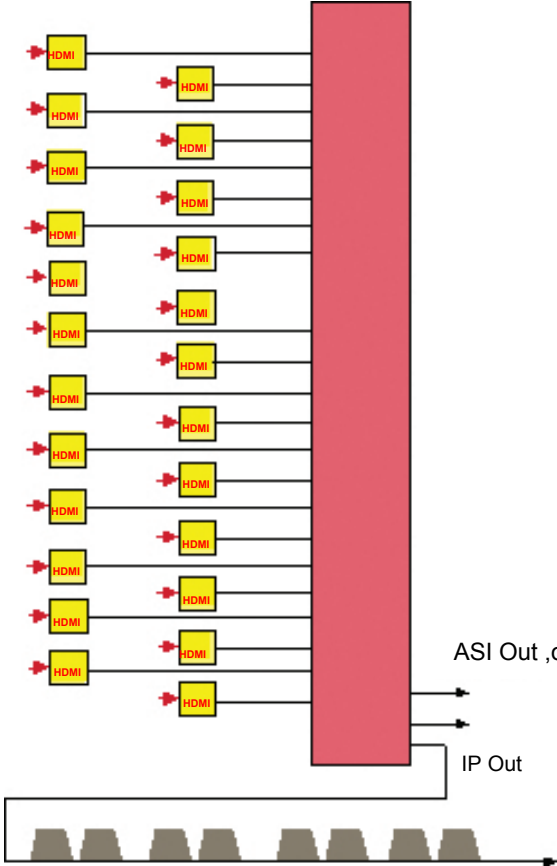
MPEG 4 (H264) HDMI DVB-T Modulators
Up to 24 HDMI inputs in one, 1 U rack
High definition or Standard definition encoder. DVB-T COFDM modulator. 30-860MHZ
Output Includes IP, into standard local area network.
Costs as less than £130.00 per HD/SD TV programme

Set up and control via web management



MPX-HD/SD/1 8DVBT,R HDMI B	MPEG 4 Eightfold, Encoder ,rack mounted	8 x HDMI inputs	£995.00
MPX-HD/SD/1 16DVBT,R HDMI B	MPEG 4. Sixteenfold Encoder,COFDM modulator,rack mounted	16 x HDMI inputs	£1,861.31
MPX-HD/SD/1 24DVBT,R HDMI B	MPEG 4. Twentyfourfold Encoder,COFDM modulator,rack mounted	24 x HDMI inputs	£2,408.76

24 HDMI input version illustrated



4-8 DVB-T Multiplexes out depending on number of inputs.A

Specifications

Video MPEG4 H264

Input options HDMI 8, 16, 24

Input resolutions 1920x1080_60P, 1920x1080_60i, 1920x1080_50P, 1920x1080_50i, 1280x720_60P, 1280x720_50P, 720x576_50i, 720x480_60i,

Output resolutions 1920x1080_30P, 1920x1080_25P, 1280x720_30P, 1280x720_25P, 720x576_25P, 720x480_30P,

Bit-rate 1Mbps~13Mbps each channel

Rate Control CBR/VBR

GOP Structure IP...P (P Frame adjustment, without B Frame)

Audio	Encoding	MPEG-1 Layer 2
	Sampling rate	48KHz
	Resolution	24-bit
	Audio Gain	0-255 Adjustable
	Bit-rate	64kbps, 128Kbps, 192kbps, 224kbps, 256kbps, 320kbps, 384kbps

Multiplexing	Maximum PID Remapping	180 input per channel
	Function	PID remapping (automatically or manually)
	Maximum simulcrypt CA	Accurate PCR adjusting, Generate PSI/ SI table automatically

RF output Options	DVB-C	QAM	16 non-adjacent carriers output (maximum bandwidth 192MHz)
		Standard	EN300 429/ITU-T J.83A/B
		MER	≥40db
		RF frequency	50~960MHz, 1KHz step
		RF output level	-20~+10dbm (87~117 dbμV), 0.1db step
	Symbol Rate	5.0Mpsps~7.0Mpsps, 1kpsps stepping	
		J.83A	J.83B
	Constellation	16/32/64/128/256QAM	64/256 QAM
	Bandwidth	8M	6M

DVB-T	QPSK, 16QAM, 64QAM	Maximum 8 non-adjacent carriers.
	Standard	EN300744
	FFT mode	2K, 4K, 8K
	Bandwidth	6M, 7M, 8M
	Guard Interval	1/4, 1/8, 1/16, 1/32
	FEC	1/2, 2/3, 3/4, 5/6, 7/8
	MER	≥42 dB
	RF frequency	50~960MHz, 1KHz step
	RF output level	-20~ +10 dBm (87~117 dbμV), 0.1db step

Stream output	1000M Base-T Ethernet interface
Power	AC 110V± 10%, 50/60Hz, AC 220 ± 10%, 50/60Hz

For low latency applications use MPEG 2 Encoding, MPEG2 Encoding occupies more bandwidth and consequently needs less compression.

Specification and [prices subject to change without notice.](#)
 Prices plus VAT

HDMI input is sometimes unable to capture from some copy protected HDMI sources, such as blue ray players, if HDCP encryption is embedded in the video /audio stream, doesn't normally apply to set top boxes or normal DVD player. HDCP strippers or HDMI splitters are available from other vendors.

TXS

UHD Digital modulator.

DVB-T or C output

One HDMI input + redundancy.



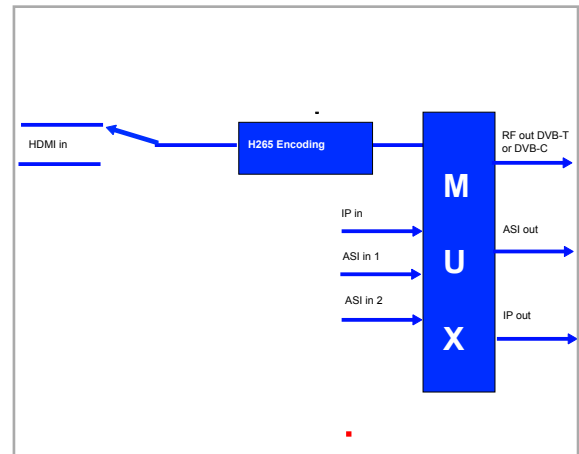
H.265/HEVC and H.264/AVC, multiplexing and modulating functions in one standard 1U case.

£7,538.00
Ex Vat



Logo, Caption, QR code insertion

Video Input	Resolution		Chroma		
	3840×2160_60P, 3840×2160_59.94P, 3840×2160_50P, 3840×2160_30P, 3840×2160_29.96P, 3840×2160_25P, 3840×2160_24P, 1920×1080_60P, 1920×1080_59.94P, 1920×1080_50P, 1920×1080_30P, 1920×1080_25P, 1920×1080_24P,		RGB, YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0 (2160P_50/60Hz only)		
Video Encoding	Encoding	H.265/HEVC, H.264/AVC			
	Chroma	4:2:2, 4:2:0			
	Bit-rate	1Mbps~23Mbps			
	Rate Control	CBR			
Audio Encoding	Encoding	MPEG-1 Layer 2, LC-AAC			
	Sampling rate	48KHz			
	Bit-rate	64Kbps~256Kbps each channel			
Multiplexing	2 ASI input multiplexed with local 1 channel of TS				
	PID remapping (automatically or manually)				
	Accurate PCR adjusting				
	Generate PSI/SI table automatically				
Modulator Section	DVB-C	Standard	J.83A, J.83B		
		MER	≥43dB		
		RF frequency	50~960MHz, 1KHz step		
		RF output level	-25.0~ -1 dbm, 0.1db step		
		Symbol rate	5.0 - 7.0 Msps		
			J.83A	J.83B	
	Constellation	16/32/64/128/ 256 QAM		64/ 256 QAM	
	Bandwidth	8M		6M	
	RF out	1*RF DVB-C out			
	DVB-T	Standard	EN300744		
		FFT mode	2K/4K/8K		
		Bandwidth	6M, 7M, 8M		
		Constellation	QPSK, 16QAM, 64QAM		
		Guard Interval	1/4, 1/8, 1/16, 1/32		
		Code rate	1/2, 2/3, 3/4, 5/6, 7/8		
		MER	≥42dB		
		RF frequency	50~960MHz, 1KHz step		
		RF output level	-30 to -3dbm, 79-106dBuV 0.1db step		
RF out		1*RF DVB-T out			
Stream output		1*ASI output through 4 BNC interfaces			
		1 MPTS over UDP/RTP, 1000M/100M Base-T Ethernet interface (unicast/ multicast)			



Specification and prices subject to change without notice.