



## OneDriver High Efficiency Broadband Doherty



OneDriver is ONEtastic's most amazing achievement, as it combines a complete transmitter with output power up to 130W rms or 220W p.s. and multiple input interfaces in a single 1U 19" rack chassis. This astonishing engineering is today a unique and unequalled solution in the market.

Supporting DVB-T/H/T2, ISDB-T/Tb, DAB/DAB+/T-DMB, ATSC, PAL and NTSC modulations (dual-cast Analog and Digital is also supported), OneDriver natively offers adaptive pre-correction circuits and built in GPS / GLONASS receiver for accurate synchronization and SFN operations.

Whether you need a Terrestrial or Satellite

fed transmitter, an on channel repeater, a re-transmitter or even a transposer, then OneDriver is the required solution as it can be equipped and configured with different input interfaces (Satellite Receiver, ASI, Gigabit Ethernet or RF).

Gap-filling operation is made possible by a powerful echo-canceller and, if necessary, by an additional high performance cancellation circuit.

For the South American ISDB-Tb market, OneDriver is today the only solution in the market combining Satellite Receiver, Re-Multiplexer/Layer Combiner/TS to BTS (188 to 204 byte) converter and up to 130W Transmitter in a single 1U box 19" rack!

## MAIN FEATURES

- Compact 1U 19" Rack chassis
- Output Power up to 130W rms in digital or up to 220W p.s. in analogue
- High efficiency broadband amplifier technology
- DVB-T/H/T2, ISDB-T/Tb, DAB/DAB+/T-DMB, ATSC, PAL, NTSC modulations fully supported
- Embedded Re-Multiplexer/Layer Combiner/TS to BTS (188 to 204 byte) converter for ISDB-Tb
- Adaptive pre-correction circuits
- Powerful echo canceller when OneDriver is used as an on-channel repeater
- Optional high-performance additional echo cancellation circuit
- On-board high stability GPS / GLONASS receiver with battery
- Flexible input interfaces:
  - 4 x ASI inputs (TS, BTS, T2MI, SMPTE-310M) + Analog input
  - 2 x ASI inputs and 2 x Gigabit Ethernet
  - 1 x DVB-S/S2 Satellite Receiver input
  - 1 x RF input
- SNMP, Web Interface and Touch Screen display



OneDriver transmitter dual cast (ASI and analog inputs)



OneDriver transmitter IP and ASI inputs



OneDriver repeater



OneDriver with satellite receiver, IP and ASI inputs



OneDriver with satellite receiver

# SPECIFICATIONS

## TRANSMITTERS

<b>UHF digital output power:</b>	30 W, 50 W, 80 W and 130 W rms @ MER 40 dB typ.
<b>UHF analogue output power:</b>	50 W, 100 W, 220 W p.s.
<b>VHF digital output power:</b>	up to 100 W rms @ MER 38 dB typ.
<b>VHF analogue output power:</b>	220 W p.s.
<b>Frequency agility:</b>	UHF Band IV and V or VHF Band III
<b>Frequency resolution:</b>	1 Hz
<b>Pre-correction:</b>	Adaptive
<b>RF connector:</b>	N(f), 50 Ohm

## MODULATOR

### DVB-T/H/T2

<b>Standard:</b>	EN300744, EN302304, EN302755, TS101191, TS102773 (T2-MI), TS102034
<b>Inputs:</b>	4x ASI BNC (f), 75 Ohm or 2x ASI BNC (f), 75 Ohm and 2x RJ45 TS oIP 10/100/1000 Switch seamless between ASI inputs. Hierarchical and non hierarchical (DVB-T)
<b>FFT:</b>	1K (DVB-T2), 2K, 4K, 8K, 8K ext. (DVB-T2), 16K & 16K ext. (DVB-T2), 32K & 32K ext. (DVB-T2)
<b>Code rate:</b>	All modalities available according to the standard Block Short or Normal (DVB-T2) DVB-T: Reed-Solomon (204, 188) DVB-T2: BCH, LDPC
<b>Guard interval:</b>	1/32, 1/16, 1/8, 1/4, 19/256 (DVB-T2), 19/128 (DVB-T2), 1/128 (DVB-T2)
<b>Constellation:</b>	QPSK, 16QAM, 64QAM, 256QAM (DVB-T2). Rotated and non rotated (DVB-T2)
<b>MISO processing:</b>	Supported

### ISDB-Tb

<b>Standard:</b>	ABNT NBR 15601, ABNT NBR 15603
<b>Inputs:</b>	4x ASI TS/BTS BNC (f), 75 Ohm or 2x ASI TS/BTS BNC (f), 75 Ohm and 2x RJ45 TS/BTS oIP 10/100/1000
<b>FFT:</b>	Mode 1 (2K), Mode 2 (4K), Mode 3 (8K)
<b>Code rate:</b>	1/2, 2/3, 3/4, 5/6, 7/8
<b>Guard interval:</b>	1/4, 1/8, 1/16, 1/32
<b>Hierarchical modulation:</b>	Up to 3 layers
<b>Constellation:</b>	QPSK, 16QAM, 64QAM
<b>Time interleaver:</b>	Fully supported
<b>Partial reception:</b>	Supported

### DAB/DAB+/T-DMB

<b>Standard:</b>	EN 300401, ETS 300 799
<b>Inputs:</b>	4x ETI (NI[G703], NA5376[G704] or NA5592[G704]) BNC (f), 75 Ohm
<b>Transmission modes:</b>	Mode I, II, III, IV (Automatically detected from the ETI stream, or user selectable)
<b>Operation:</b>	MFN or SFN operations

### ATSC

<b>Standard:</b>	A/53, A/110
<b>Inputs:</b>	4x ASI / SMPTE-310M BNC (f), 75 Ohm or 2x ASI / SMPTE-310M BNC (f), 75 Ohm and 2x RJ45 TS oIP 10/100/1000
<b>Modulation:</b>	8-VSB
<b>Input bit rate:</b>	19.39 Mbit/s
<b>Bandwidth:</b>	6 MHz
<b>Max processing delay:</b>	Up to 1 second (programmable)

### Analogue

<b>Standard:</b>	B, G, D, K, M, N, I
<b>Inputs:</b>	Video BNC (f), 75 Ohm, audio Tini-OG "Mini XLR", 6 Pin (m), 600 Ohm
<b>Color system:</b>	PAL, NTSC

## SATELLITE RECEIVER (Option)

<b>Standard:</b>	ETSI EN 300 421 (QPSK) (DVB-S) ETSI EN 302 307 (QPSK, 8PSK, 16APSK) (DVB-S2) ETSI EN 50083-9 (ASI) ETSI EN 50221 (Common Interface)
<b>DVB-S2:</b>	VCM, CCM, Multi Stream and Single Stream, Normal & Short FEC frames
<b>Symbol rate:</b>	1 - 45 Msym/s (DVB-S) 2 - 45 Msym/s (DVB-S2)
<b>Constellation:</b>	QPSK, 8PSK, 16APSK
<b>FEC:</b>	Automatic, all modalities available according to the standard Block Short or Normal DVB-S: Reed-Solomon (204,188) DVB-S2: BCH, LDPC
<b>Roll-Off:</b>	0.2, 0.25, 0.35
<b>Input connector:</b>	F (f), 75 Ohm
<b>Frequency:</b>	L-band 930÷2250 MHz
<b>LNB control voltage:</b>	Off, +13/18 Vdc, 22 kHz, 0.25 A (overload protection)
<b>RF input level:</b>	40 ÷ 100 dB $\mu$ V (with attenuator)
<b>Output connector:</b>	BNC (f), 75 Ohm
<b>Modality:</b>	188 bytes

<b>Max input bit rate:</b>	80 Mbps (CAM limit: 72 Mbps)
<b>CAM interface:</b>	PCMCIA DVB-CI Common Interface
<b>CA mode (Conditional Access):</b>	Multicrypt, Simulcrypt
<b>CAS support:</b>	Mediaguard, Viaccess, Irdeto, Conax, BISS with Professional multiprogram CAM (descrambling of up to 24 Elementary Streams) Betacrypt, Cryptoworks, Nagravision with standard consumer CAM (descrambling of up to 4 services)

## REPEATER/GAP FILLER

### RF Input

<b>Signal type:</b>	One DTV channel (DVB-T/H/T2, ISDB-T/Tb, ATSC)
<b>Frequency range:</b>	170 ÷ 862 MHz (agile tuning)
<b>Sensitivity:</b>	-75 ÷ -15 dBm
<b>Selectivity:</b>	> 60 dB $\pm$ 4.2 MHz
<b>NF (Pi=-50 dBm):</b>	< 6 dB
<b>Conversion type:</b>	Direct Base Band Conversion (Zero IF)
<b>Return losses:</b>	> 15 dB
<b>Connector:</b>	N (f), 50 Ohm

### Echo Canceller

<b>Cancellation level:</b>	40 dB, typical
<b>Cancellation window:</b>	20 $\mu$ s
<b>Selective cancellation window:</b>	1.6 $\mu$ s (time shift from 2 to 820 $\mu$ s)
<b>Doppler cancellation:</b>	yes
<b>Maximum echo/signal ratio:</b>	+15 dB (over the main signal), typical
<b>Total delay:</b>	< 10 $\mu$ s

### Echo Canceller + additional high performance cancellation option

<b>Cancellation level:</b>	65 dB, typical (over the main signal)
<b>Maximum echo/signal ratio:</b>	> +35 dB (over the main signal), typical
<b>Maximum echo level at input:</b>	-10 dBm
<b>Max. delay compensation:</b>	200 $\mu$ s (extendable)

## GPS / GLONASS (Option)

<b>Input connector:</b>	N (f), 50 Ohm
<b>Input/Monitor output 10 MHz:</b>	BNC (f), 75 Ohm
<b>Input/Monitor output 1 PPS:</b>	BNC (f), 75 Ohm
<b>Phase noise:</b>	-140 dBc/Hz @ 10 kHz -150 dBc/Hz @ 100 kHz
<b>Stability:</b>	1e-12 / 24 H with disciplined OCXO
<b>Hold-over stability:</b>	5 $\mu$ s after 5 hours (optional 1 $\mu$ s after 24 hours)

## MECHANICAL

<b>Chassis:</b>	1U rack 19"
<b>Width:</b>	482 mm
<b>Height:</b>	43.6 mm
<b>Depth:</b>	460.5 mm without fans
<b>Weight:</b>	7.5 Kg

## CONTROLS

TFT touchscreen
Web GUI
SNMP
GPIO

## ENVIRONMENTAL

<b>Operating temperature range:</b>	-5°C ÷ 40°C
<b>Max. relative humidity:</b>	90% non condensing
<b>Max. operating altitude:</b>	2500 m. a.s.l. (>2500 m. optional)

## ELECTRICAL

<b>Power supply:</b>	Single Phase 100÷240 V- 50/60 Hz, IEC320 C14 Plug
<b>Maximum consumption:</b>	196 W @ 30 W rms (Onedriver 30U) 215 W @ 50 W rms (Onedriver 50U) 290 W @ 80 W rms (Onedriver 80HU) 470 W @ 130 W rms (Onedriver 130HU)  380 W @ 100 W rms (Onedriver 100V)

## NOTES

To comply with the applicable standards and limit values for the suppression of out-of-band emissions (and in the case of digital standards, also for maintaining the required shoulder distance), the transmitter may only be operated with suitable filters at the RF output.

Specifications are subject to change without notice.

## ORDERING INFO

DESCRIPTION	Model
30 W rms / 50 W p.s. UHF TV transmitter, 1RU	ONEDRIVER 30U
50 W rms / 100 W p.s. UHF TV transmitter, 1RU	ONEDRIVER 50U
80 W rms / 220 W p.s. UHF TV transmitter, High efficiency, 1RU	ONEDRIVER 80HU
130 W rms / 220 W p.s. UHF TV transmitter, High efficiency, 1RU	ONEDRIVER 130HU
100 W rms / 220 W p.s. VHF Band III TV transmitter, 1RU	ONEDRIVER 100V
OPTIONS	
GPS / GLONASS integrated receiver	Opt. G
26 dB LNA GPS / GLONASS antenna including mounting kit and 25 mt. coaxial cable	Opt. KA
DVB-S/S2 integrated receiver board, single and multistream, with CAM slot	Opt. S
Additional input board, 4x ASI	Opt. IA
Additional input board, 2x ASI + 2x GbE	Opt. IG
Additional input board, RF in	Opt. R
Software option for ISDB-Tb Remux/Layer Combiner/TS to BTS (188 to 204 byte) converter	Opt. L
Dual-cast software option, adds DVB-T modulation	Opt. T
Dual-cast software option, adds DVB-T2 modulation	Opt. T2
Dual-cast software option, adds ISDB-T modulation	Opt. I
Dual-cast software option, adds ATSC modulation	Opt. AT
Dual-cast software option, adds PAL modulation	Opt. P
Dual-cast software option, adds NTSC or PAL-M modulation	Opt. N



OneDriver back panel



OneDriver back panel + GPS / GLONASS



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