OPTEL
OPTOELETTRONICA
TELECOMUNICAZIONI

OTX - 2250
OTX - 2252
OTX - 2254
OTX - 2255

300–2200 MHZ ANALOG WIDEBAND FIBEROPTIC TRANSMITTERS

FEATURES

- **0.3–2.2 GHz bandwidth**
- **1310 and 1550 nm wavelength**
- **DFB Optoisolated Laser CLASS 1**
- **Very low noise (RIN < -150 dB/Hz)**
- **Very low distorsion (IP3 > +30 dBm)**
- **High output optical power (> +4dBm @I>28mA)**
- **RF input power detector and monitoring**
- **15 dB, 1 dB step, 4 bit RF step attenuator**
- **Built-in Micro for Remote Control & Monitoring**
- **Built-in FSK DC-19.2 Kbps Data Modulator**
- **Compact shielded BOX (140x92x24 mm)**
- **Optional EUROCARD front panel for rack mount**
- **MTBF > 1 Million hours at Ta = 40 °C**
- **-20 to +60 °C operating Temp. range**
- **From 20 to 72 V DC direct supply voltage**
- **Very low power consumption**
- **Compliancy with the normative EN 61000 6-3; EN 61000 6-4; EN 60825-1**

APPLICATIONS

- **VHF, UHF, RF transmission systems**
- **450 MHz, 900 MHz 1200 MHz, 1800 MHz, 2100 MHz CELLULAR RADIO Remotization Systems**

PRODUCT DESCRIPTION

The OTX–225x series are the BOX (EUROCARD optional front panel for rack mounting) package versions of Analog Fiberoptic LASER Transmitters, designed and developed by OPTEL, to be used with the ORX–225x series Receivers.

The units provide OEMs an excellent solution to link on a singlemode fiber two RF communication stations, for any kind of signal operating in the frequency spectrum range of 0.3 to 2.2 GHz.

The very high performance of the units is very attractive for CELLULAR RADIO Fiberoptic remotization systems.

MAIN PRODUCT VERSIONS

The OTX–225x family incloudes the following versions:

Model	Wavelength (nm)	Low Gain	High Gain
OTX–2250	1310	X	
OTX–2254	1550	X	
OTX–2252	1310		X
OTX–2255	1550		X

OTX–225x SERIES TECHNICAL SPECIFICATIONS (typ)

OPTICAL SPECIFICATIONS	**OTX–2250–52**	**OTX–2254–55**
OPERATING WAVELEGTH (nm)	1310	1550
LASER DIODE	DFB (optoisolated)	
OPTICAL ISOLATION (dB)	30	
OUTPUT POWER (dBm)	> +4 with I_{bias} > 28 mA	
PWR STAB. IN TEMP. RANGE (dB)	0.5	
OPTICAL CONNECTOR (Opt)	FC–APC (SC–APC)	
CONNECTOR RETURN LOSS (dB)	>60	
RIN (dB/Hz)	<–150	

RF SPECIFICATIONS

MODULATION BANDWIDTH (GHZ)	0.3 – 2.2
FREQ. RESP. FLATNESS (dB)	+/–1.5(Linked with ORX–225x)
CONNECTOR	SMA / 50 Ohm
GAIN (Step Att = 0 dB) (dB)	0 (2250–4) 10 (2252–5)
RETURN LOSS (dB)	>12
Input IP3 (dBm)	>+30 (2250–4) >+20 (2252–5)
STEP RF ATTENUATOR RANGE	0 – 15 dB (1 dB step)
RF ATTENUATOR ADJUST	Remote (Micro)

POWER SUPPLY

VOLTAGE (V)	20 – 72
CONSUMPTIONS (W)	< 2

MECHANICS

HOUSING	Shielded Box
STAND–ALONE BOX (Size, mm)	140Lx92x24H
EUROCARD (Size, mm)	100x160x40 (19" 3U Subrack plug–in)

ENVIRONMENTAL

OPERATING TEMPERATURE	–20 to +60 oC
STORAGE TEMPERATURE	–40 to +70 oC

DATA MODULATOR & MICRO INTERFACE

MODULATION TYPE	FSK
DATA RATE (KBAUD)	DC – 19.2
DATA FORMAT	Asinchronous NRZ
DATA INTERFACE	MICRO 0–5 V
CONNECTOR	Submiature DB–9

ALARMS

LOCAL ALARMS	(APOT) LASER out of power tracking (APS) No power supply
FRONT PANEL LEDs	(APOT) RED–ON when alarm (APS) GREEN–OFF when no power
REMOTE ALARM	MICRO

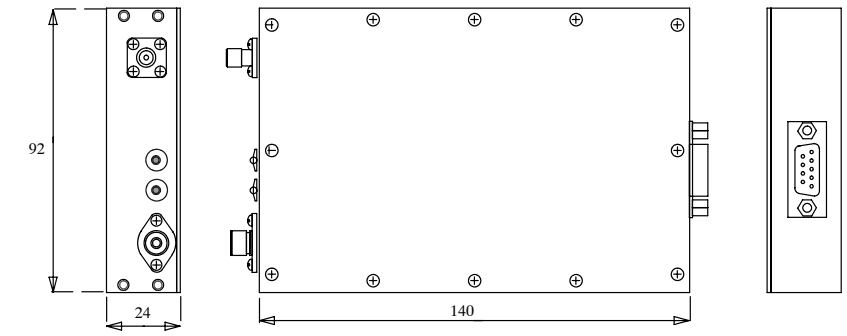
MONITORING

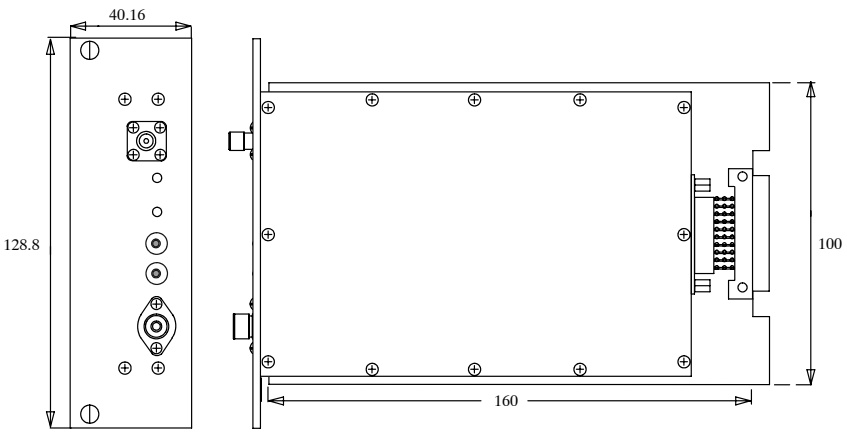
RF INPUT AVERAGE POWER	law as TAB given
LASER OPTICAL POWER OUT	1000 mV = Nominal (+/– 5%)
LASER BIAS CURRENT	10 mV = 1 mA (+/– 5%)

REMOTE CONTROL & MONITORING

TYPE	MICRO on–board

MECHANICAL DRAWING AND INTERFACES





DB–9 PIN ASSIGNEMENT (without / with MICRO)

PIN 1	(20–72) +
PIN 2	RS 232 / Micro 2
PIN 3	(20–72) –
PIN 4	RF Monitoring / Micro 4
PIN 5	Opt. power Monitoring / Micro 5
PIN 6	LASER Bias Monitoring / Micro 6
PIN 7	GND
PIN 8	Dry contact n. 1 / Micro 8
PIN 9	Dry contact n. 2 / Micro 9

(*) – Without the MICRO on–board the data interface is RS 232 and the remote alarm are given by dry contacts.

DIN 41612 B/2 PIN ASSIGNEMENT

PIN 4	ab	(20–72) +
PIN 13	ab	(20–72) –
PIN 8	ab	Data input RS 232 / Micro 2
PIN 1–3	ab	GND
PIN 5	ab	RF Monitoring / Micro 4
PIN 7	ab	Opt. power Monitoring / Micro 5
PIN 6	ab	LASER Bias Monitoring / Micro 6
PIN 14–16	ab	GND
PIN 11	ab	Dry contact n. 1 / Micro 8
PIN 12	ab	Dry contact n. 2 / Micro 9
PIN 2–15	ab	NC

OPTEL
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