

# OCR1016E-WDM

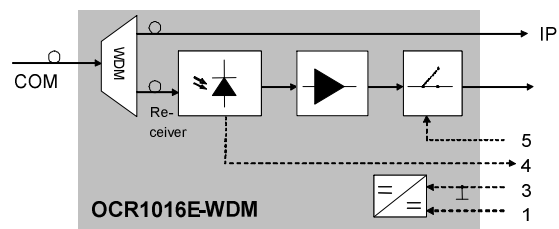
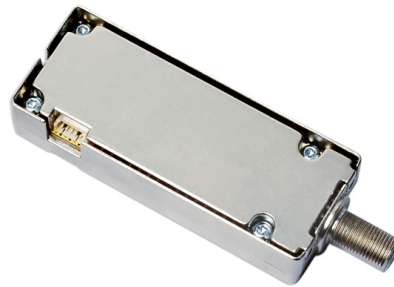
COMPACT OPTICAL RECEIVER MODULE WITH INTEGRATED WDM

## Application

- ▶ Optical receiver module for CATV video overlay in FTTH networks

## Features

- ▶ Optical receiver module with integrated 1310&1490 / 1550 nm WDM
- ▶ 1 common in/out port (1550 nm video overlay + 1310&1490 nm PON Data)
- ▶ 1 in/out port 1310&1490 nm PON Data
- ▶ Ultra low noise push-pull technology
- ▶ Bandwidth of 1 GHz
- ▶ 46 dB CNR (typ.) for NTSC with OMI = 4% at -10 dBm optical input power @ 1550 nm
- ▶ 28 dBmV RF output level (-5 dBm, 1550 nm, OMI = 4%)
- ▶ Very low intermodulations
- ▶ Low power consumption
- ▶ Small die cast housing with single-mode fiber pigtail
- ▶ Monitor voltage output
- ▶ Output disable
- ▶ Status - LEDs for input power ok and output enabled



## Technical Data

### Electrical/Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit
Optical Input Power	$P_{IN}$	-10		-3	dBm
Optical Wavelength	$\lambda$	1539	1550	1565	nm
Optical Return Loss	ORL	40	45		dB
Power Supply Voltage	$V_{CC}$		5		V
Power Supply Current	ICC		180	200	mA
Monitor Voltage	UCRXPO		$I_{photo} * 1000 \text{ Ohms}$		V
Optical Connector			single-mode fiber pigtail		
RF-Connector			F – female		

### RF Characteristics

Parameter	Symbol	Min	Typ	Max	Unit
RF Bandwidth	B	47	-	1000	MHz
Receiver Noise Current	$I_{ENC}$		4	4.5	pA/√Hz
RF Impedance	Z	-	75	-	Ω
RF Return Loss		14 @ 47 MHz, -1 dB/oct.			dB
Flatness	ΔL	-1.0		+1.0	dB
Output Isolation (output disabled)		40			dB
RF Output Level *)	L	26	28	30	dBmV
CSO for Cenelec 42 **)	CSO	63 (P <sub>IN</sub> =-3dBm)	66 (P <sub>IN</sub> =-5dBm)		dB
CTB for Cenelec 42 **)	CTB	61 (P <sub>IN</sub> =-3dBm)	67 (P <sub>IN</sub> =-5dBm)		dB

\*) P<sub>IN</sub> = -5 dBm, 1550 nm, OMI = 4%, RF level decreases with 2:1 law with optical input power

\*\*) CSO/CTB contribution of OCR for Cenelec 42 signal according IEC 60728-3 / EN 50083-3, OMI = 4.1%, 1550 nm

### Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Operating Temperature Range	T <sub>OP</sub>	-10	+60	°C
Storage Temperature Range	T <sub>stg</sub>	-40	+85	°C
Optical Input Power	P <sub>IN</sub>		0	dBm
Power Supply Voltage	V <sub>CC</sub>	4.5	6.0	VDC

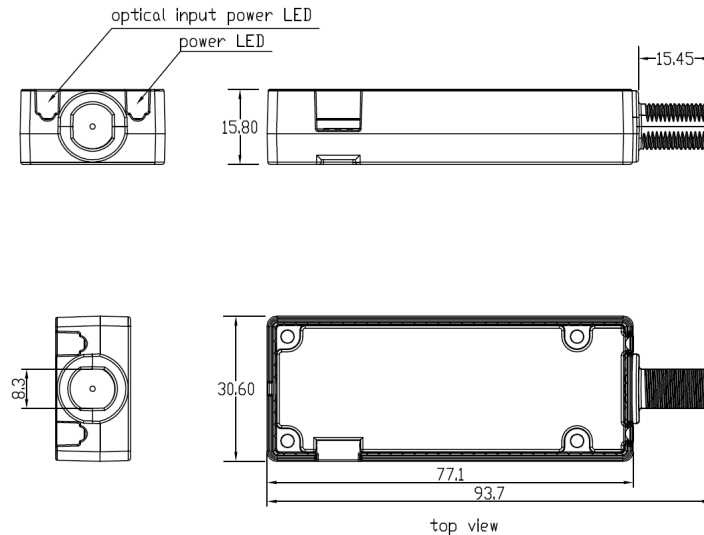
### CATV Disable

The CATV disable pin 5 allows to deactivate the RF output by a 0-0.8V logic signal level; a 10 kOhms pull-up to V<sub>CC</sub> is internally connected to this pin (low=deactivated).

### Diagnostic LEDs

Normal Operation	Optical Input Power LED: lightening green
Optical Input Power low	Optical Input Power LED: off preadjusted for -14 +/- 1 dBm
CATV Disabled	Power LED: off
CATV Enabled	Power LED: lightening green

### Mechanical Outlines



**Connector Pin Description**

Pin No.	Description	
1	V <sub>CC</sub>	Power Supply
2	N.C.	not connected
3	GND	GND
4	UCRXPO	Received optical power: The measured monitor voltage is the product of photodiode current and 1000 Ohms resistance
5	Output Disable	OCR1016E-WDM: 10 kOhms pull-up to V <sub>CC</sub> , CATV signal disabled, if connected to GND

**Technical Data WDM**

Parameter	Min	Max	Unit
Operating wavelength pass band (Optical receiver input)	1539	1565	nm
Operating wavelength reflect band			
PON Data in	1260	1360	nm
PON Data out	1480	1500	nm
Insertion loss reflect port (COM → IP)		0.8	dB
Return loss		35	dB
Isolation pass	35		dB
Isolation reflect	20		dB
PDL		0.2	dB