



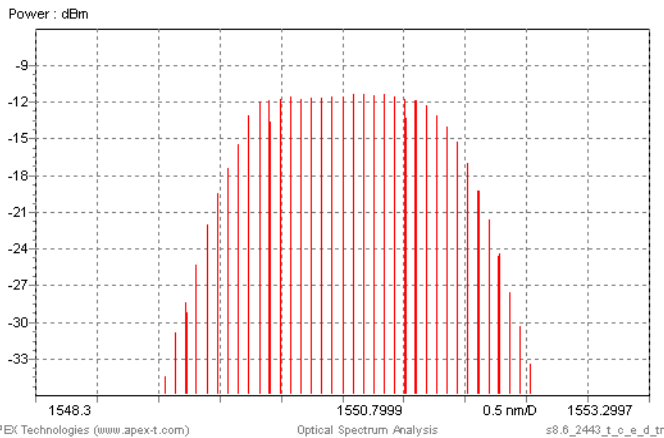
Pilot Photonics Optical Frequency Comb Source

Pilot Photonics' Optical Frequency Comb Source is based on our patented technology and offers best-in-class performance including excellent stability, low optical linewidth and tuneable free spectral range. A wide range of free spectral ranges and wavelengths are available.



Features

- Stable and robust optical frequency comb.
- Low Optical linewidth (<300 kHz).
- Tuneable free spectral range with high accuracy, through an external voltage.
- Strong phase correlation between comb lines.
- Tuneable centre wavelength (on request).
- PM Fibre coupled output.
- Simple, push-button operation.



Applications

- Terabit Superchannel transmitters
- Flexgrid Wavelength Division Multiplexing
- Generation of millimetre-wave and Terahertz signals
- Generation of 5G signals
- Ultra-wideband (UWB) over fibre HD-video distribution
- Optical signal processing (e.g. optical clock recovery)
- Precision optical measurements
- Spectroscopy
- Sensor interrogation

Optical comb generated using PP-OWCS – 16 lines separated by 10.7 GHz with a spectral flatness of 1dB

Wavelength	1530-1610nm/765-805nm/others on request
Free Spectral Range*	5-15 GHz/others on request
Number of comb lines	8 - 25
Spectral Flatness	2 dB
Linewidth	< 300 kHz
Carrier to Noise Ratio	> 35 dB
Average power	> 5 dBm 1530-1610 nm

* Preferred FSR selected on ordering

Specification	Min.	Typ.	Max.	Unit	Notes
Optical Characteristics					
Centre Wavelength	1530 765 (SHG)	1550	1610 805 (SHG)	nm	Other wavelengths 500-1100 nm and 1200-2000 nm available on request.
Centre wavelength tuning range	- 1	-	+ 1	nm	Centre wavelength is factory set. On request, the unit can be accessed through USB to tune the centre wavelength over the specified range.
Free Spectral Range	5	10	15	GHz	Larger free spectral ranges under development. The free spectral range can be tuned over a range by an external voltage.
Total Spectral Bandwidth		250		GHz	Measured at 20 dB down from envelope peak.
Number of comb lines	4		25		Within a 2 dB spectral flatness for free spectral ranges between 5-25 GHz.
Average Output Power	0	5	10	dBm	
Optical Linewidth	100	300	600	kHz	
Carrier to Noise Ratio	30	40	50	dB	
Relative Intensity Noise			-120	dBc/Hz	
RF Beat Tone Linewidth			30	Hz	
Comb Line Power Stability				dB	Measurements taken every 30 s with Apex XX OSA (Res: XX pm).
Comb Line Wavelength Stability				pm	Measurements taken every 30 s with Apex XX OSA (Res: XX pm).
Physical Specifications					
Dimensions		190x110x31		mm ³	
Power Consumption			30	W	
AC Voltage	100		240	V	
DC Supply Voltage	10	12	13		AC-DC power supply is provided.
DC Supply Noise (1 kHz – 200 kHz)		20	60	mVpp	
Operating Temperature	+5		+35	°C	
Storage Temperature	-20		+70	°C	
Humidity, non-condensing			90	%RH	
RF Input Connector		SMA			Female.
Optical Output		FC/APC PM			
Other Specifications					
Turn on time			7	s	From the moment of DC power application.
Cold start settling time (system warm-up)	20	30	90	min	
Rise time of optical signal	30	50	100	ms	
Fall time of optical signal	1		3	µs	