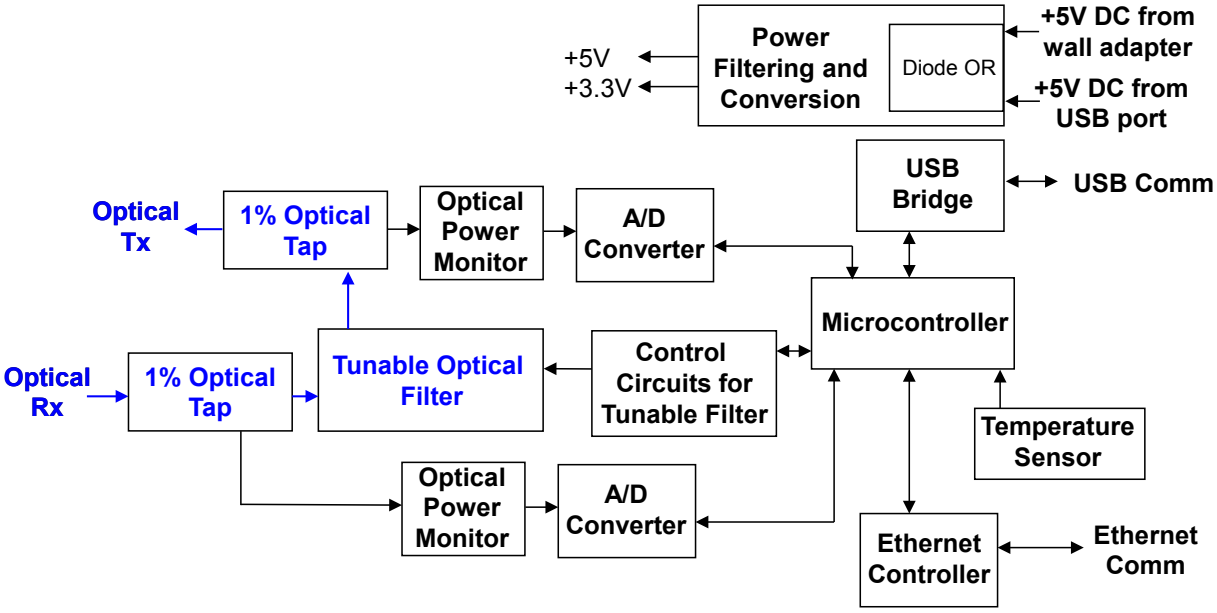
TF-1000

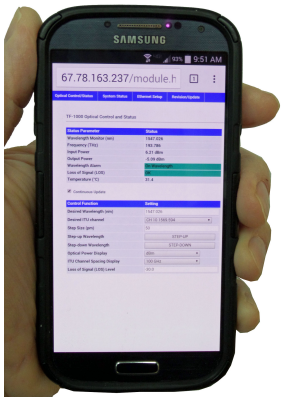
Tunable Optical Filter with Power Meters

Triple Play Communications
0101 0100 0101 0000 0100 0011

Key Features

- Wide C-Band or L-Band continuous tuning
- 50 GHz bandpass filter
- Powered directly from USB interface or AC/DC adapter
- User friendly USB GUI runs on Windows platform
- 10/100BaseT Ethernet interface
- Also provides HTML browser GUI and SNMP capability
- Optical power monitoring of input and output
- Latching filter, once set, no USB or DC power required
- High adjacent channel rejection
- Optional parameter logging over time
- Small footprint of 6.3" x 3.0" x 1.3"





Applications

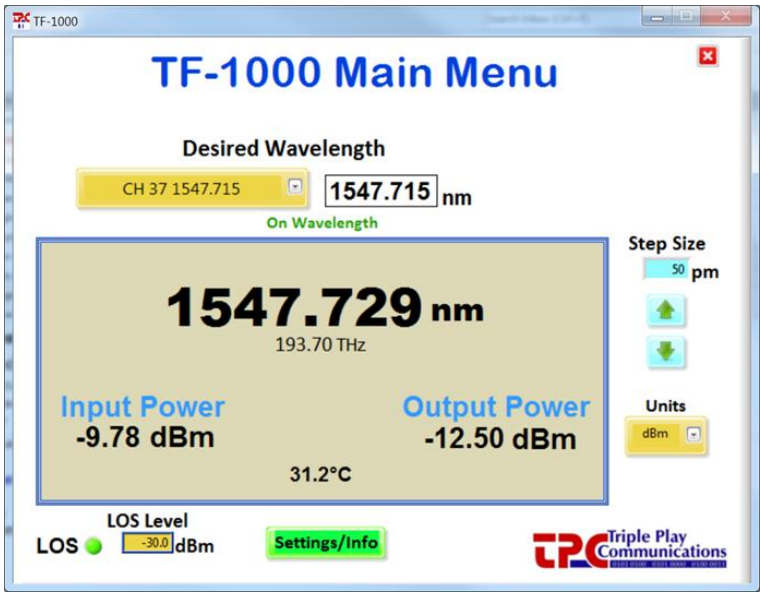
- Signal demux for DWDM system testing
- ASE suppression for EDFA's and tunable lasers
- 50 GHz or 100 GHz channel monitoring and tracking
- Dynamic wavelength selection for WDM systems with optical Add/Drops

Triple Play Communications
250 East Drive, Suite F
Melbourne, FL 32904

321-243-2671
www.3playcomm.com
sales@3playcomm.com

Triple Play Communications
0101 0100 0101 0000 0100 0011

TF-1000 Series



Overview

The TF-1000 is a tunable optical filter designed as a small, portable, cost-effective solution for use in R&D as well as production test applications. This band pass filter operates in either the C (1527 to 1570 nm) or L (1570 to 1610 nm) band and allows the center frequency to be set with a ±4 GHz (32 pm typ) accuracy.

The TF-1000 can be USB powered when connected directly to a Windows based computer running the USB graphical user interface (GUI) software. The USB GUI (see screen on left) provides complete control and status of all wavelength tuning and optical power monitoring functions. The internal optical filter latches the wavelength setting and is able to maintain its filter characteristics at the last commanded location even when the TF-1000 is completely unpowered (no USB or DC power connection).

The input and output optical power levels are measured using a 1% tap to minimize insertion loss. An onboard temperature sensor allows the power monitoring circuitry to be calibrated during production test.

The GUI application also has an optional capability which allows the user to perform time stamped data logging which includes capturing the input and output optical power levels as well as the corresponding filter wavelength and writing this information to a .csv file.

An AC/DC adapter is also provided to power the TF-1000 when its 10/100BaseT Ethernet interface is used to allow the module to be controlled via Static or Dynamic IP addressing. In this configuration, a standard HTML browser (e.g. Firefox, Chrome, Internet Explorer) provides the user interface and the various control and status HTML pages (see screen on right) are integrated into the microcontroller's firmware.

Additionally, any iPhone or Android device can provide the full user interface as shown below using the standard Ethernet connection and phone's browser.

The module also allows SNMP control via the Ethernet interface.

Triple Play Communications
250 East Drive, Suite F
Melbourne, FL 32904

321-243-2671
www.3playcomm.com
sales@3playcomm.com

Triple Play Communications
0101 0100 0101 0000 0100 0011

TF-1000 Series

Optical Filter Specifications

Parameter	Minimum	Typical	Maximum
Filter Shape		Band Pass	
C-Band Tuning Range	1527 nm		1570 nm
L-Band Tuning Range	1570 nm		1610 nm
Bandwidth at -3 dB		35 GHz	
Insertion Loss			4.9 dB
Center Frequency Setting Accuracy		± 4 GHz (32 pm)	±8 GHz (64 pm)
Center Frequency Setting Resolution		2 GHz (16 pm)	
Maximum Total Input Optical Power (all chan)			+23 dBm
Maximum Per Channel Input Optical Power			+10 dBm

Optical Power Meter Specifications

Parameter	Minimum	Typical	Maximum
Input Power Dynamic Measurement Range[1]	-33 dBm		+23 dBm
Output Power Dynamic Measurement Range[1]	-46 dBm		+10 dBm
Resolution	±0.01 dB		
Relative Accuracy/Linearity	±0.1 dB		
Absolute Accuracy	±1.0 dB		

Note 1: This 56 dB dynamic range can be shifted lower or higher based on the customer's desired range.

Electrical, Mechanical, and Environmental Specifications

Parameter	Minimum	Typical	Maximum
Power Interface		USB (+5V)	
AC/DC Adapter Operating Voltage		+5V	
Operating Current (USB, max while tuning)		320 mA	490 mA
USB Communications Interface		USB 2.0	
Ethernet Communications Interface		10/100BaseT	
User Interface		USB, HTML, SNMP	
User Platform		Windows	
Optical Connectors (standard, others available)		FC/PC, FC/APC	
Operating Temperature Range	0 °C		40 °C
Dimensions		6.3" x 3.0" x 1.3"	

Part Numbers for Ordering

Description	Part Number
TF-1000 Tunable Optical Filter and Power Meter	TF-1000-□□□-□-□□-□□
C-Band: **C**, L-Band: **L**	
USB and Ethernet control/status interface: **E**	
Data logging: **D**, No Data logging: **N**	
FC/UPC: **U**, FC/APC: **A**	
Two digits for min input power monitor level, (Std= -33dBm): **33**	
Two digits for min output power monitor level, (Std= -46dBm): **46**	

Triple Play Communications
250 East Drive, Suite F
Melbourne, FL 32904

Ordering Information:

XSoptix
800 Village Walk #316
Guilford, CT 06437
Ph: 203-401-8093
Email orders to: sales@xsoptix.com
Fax orders to: 800-878-7282

321-243-2671
www.3playcomm.com
sales@3playcomm.com