FW-OS8600SMA

1×8 Mechanical Optical Switch, 800-2500um, 600um fiber, SMA905 connectors，204*220*48MM Box

FW-OS8600SMA is a high-performance 1×8 mechanical optical switch produced by FIBERWDM, featuring a precision mechanical switching structure, enabling fast and reliable switching between one input optical signal and eight output channels. With an operating wavelength range of 800–2500 nm, it is compatible with multimode fiber applications and is widely used in optical communication systems, fiber-optic sensing networks, laser measurement, and optical path switching.



Feratures

- **Wide operating wavelength range**: 800–2500 nm, covering visible to mid-infrared bands, suitable for various light sources and detectors
- **Large-core fiber:** 600 μm core diameter with 0.22 numerical aperture (NA), ideal for high-power and multimode optical signal transmission with high coupling efficiency
- **Low Loss and High Reliability**
- **RS232 communication interface:** Serial command control, easy integration into automated test systems and host computer software
- **Standard SMA905 connectors:** Universal fiber interface, convenient plug-and-play with stable and reliable connection
- **Modularized Design**

Applications

- Optical fiber communication systems and optical network testing
- Distributed fiber-optic sensing systems
- Laser output optical path switching
- Spectral analysis and optical measurement instruments
- Multi-channel optical path selection in scientific research

Specifications

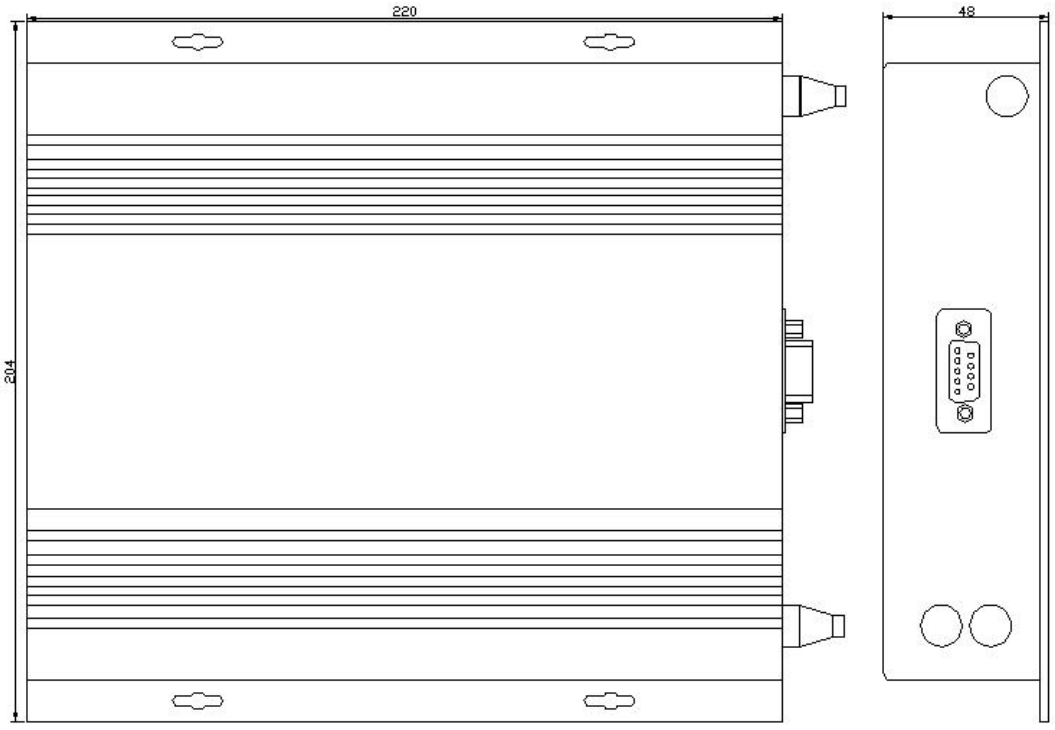
Parameter	Parameter Values
Model	FW-OS8600SMA
Insertion Loss	≤1.5dB

Wavelength Range	800-2500nm
Fiber Type	600 μm core diameter with 0.22 numerical aperture (NA)
Return Loss	≥30dB
Crosstalk	≥ 50dB
PDL	≤0.1dB
WDL	≤0.25dB
TDL	≤0.25dB
Repeatability	≤0.1dB
Lifetime	$>10^7$
Switching Time	≤20 ms（Adjacent channel）
Connector	SMA905
Control Mode	RS232
Working Power Supply	5V/1000 mA
Product Sze	220 x 204 x 48
Operating Temperature	-20 ℃ to +70 ℃
Operating Temperature	-40 ℃ to +85 ℃

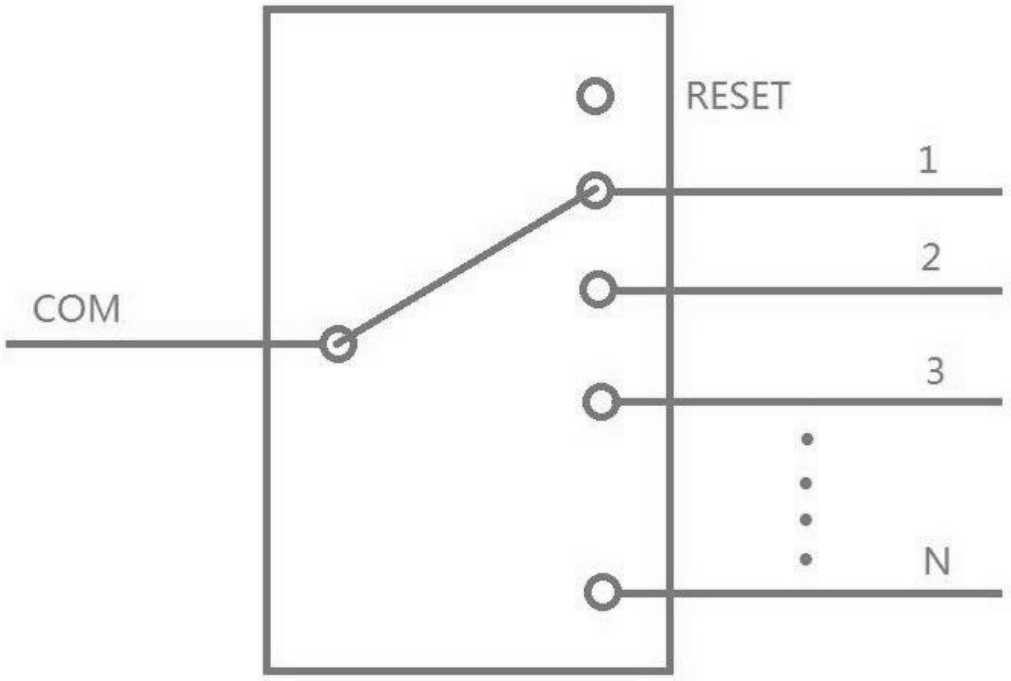
Pin Specifications

DB-9 Male Connector			
Pin No.	**I / O**	**Signal**	**Description**
2	Input	RXD	Receive Data
3	Out	TXD	Send Data
5,8	Power	GND	Ground
9	Power	VCC	5.0±5% VDC Power Supply (max 1000mA)
1,4,6,7	NC	NC	NC

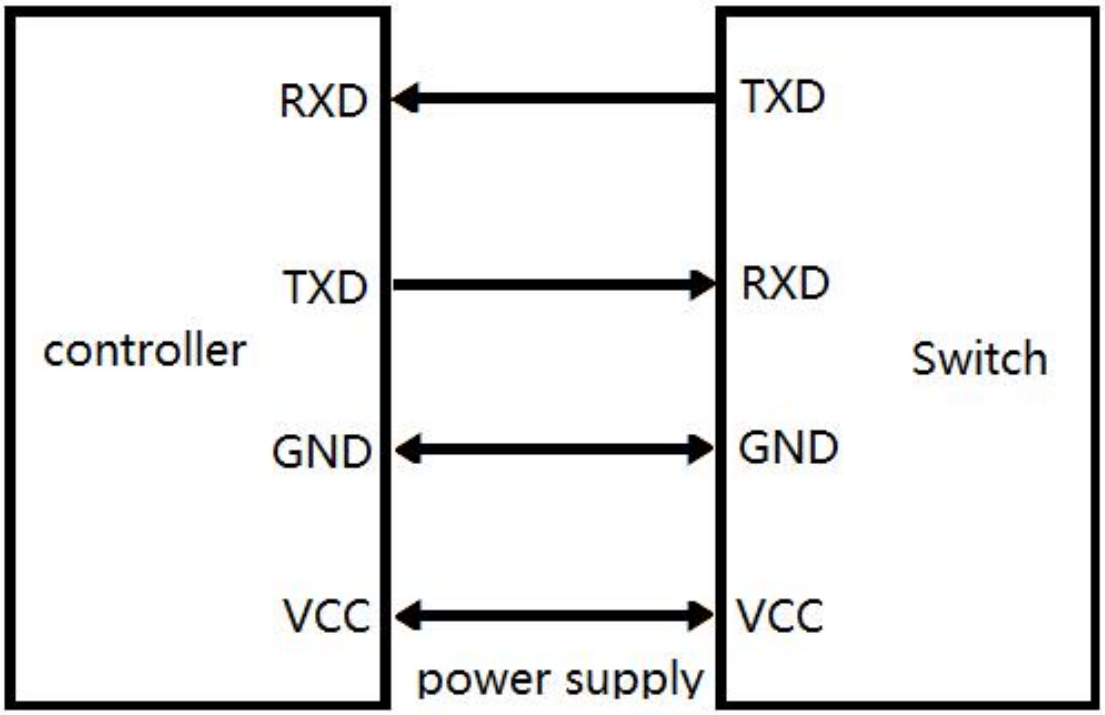
Dimension



Optical Route



Control Chart



Communication Protocol

●"_" expression underline.

● Communication protocols are all capital letters.

● The communication protocol commands, "<" as the start,">" as a terminator.

Usage	Instruction	Description
Set optical switch channels	Send: <OSW_OUT_XX>	Set the "XX" value to select the fiber channel. When "XX" is 00, the switch will be reset. Set 01 to select channel 1. A successful setup will return 1. It returns 2 when "XX" is larger than total channel amount.
	Return1: <OSW_OUT_OK> Return2: <OSW_OUT_OVERFLOW>	

Query optical switch channels	Send: <OSW_OUT_?>	Send the query command and it will return an "XX" value to indicate the current channel.
	Return: <OSW_OUT_XX>	
Query optical switch type	Send: <OSW_TYPE_?>	Send the query command and it will return following basic information of the switch.
	Return: <OSW_TYPE_OSW-1X8_800~2500_300UM_R_SMA>	Model: OSW-1X8 Wavelength Range: 800~2500nm Control Interface: RS-232 Connector: SMA905

Note: COM settings , Baud rate: 9600, Data bits: 8 bit, Stop bit: 1 bit , parity bit: None, Command error return “<OSW_ERROR>” .

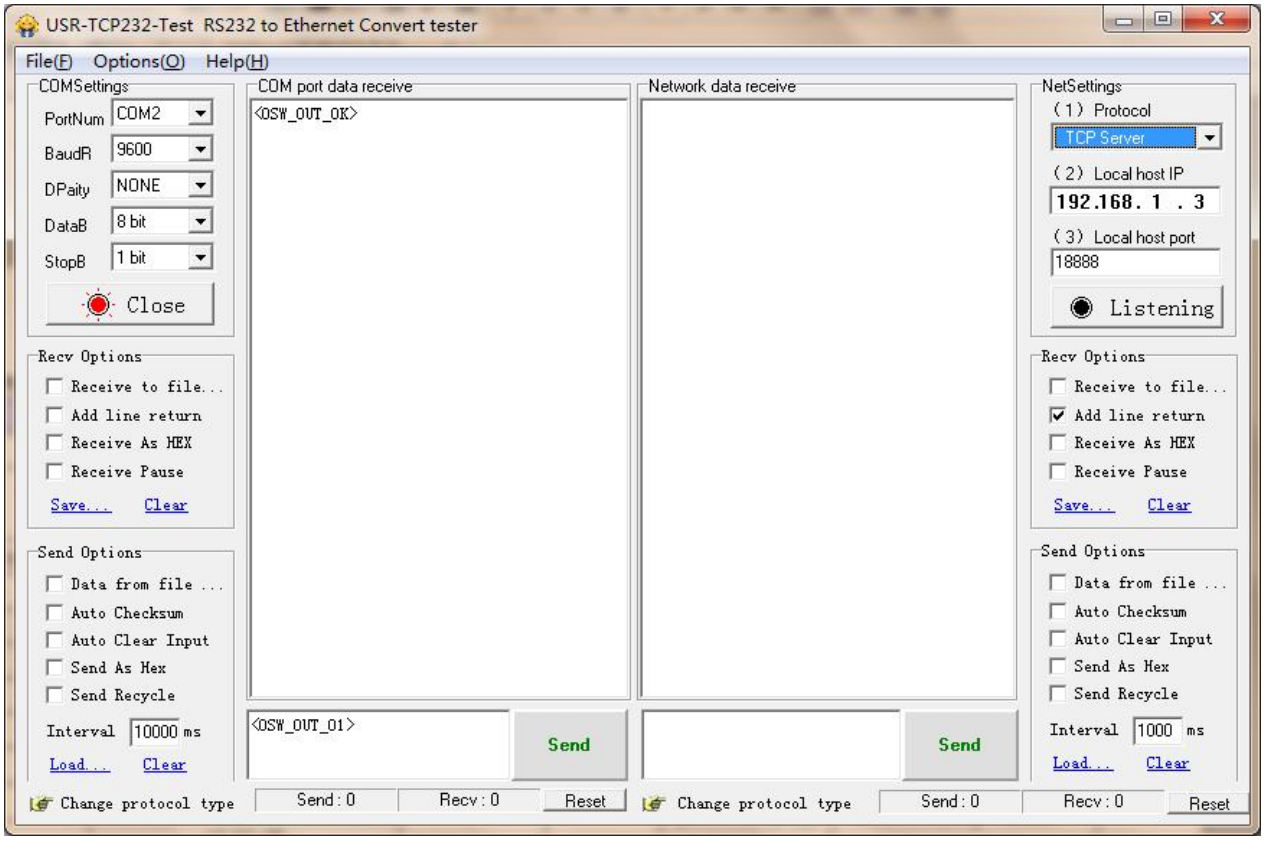
Operation

(1) The optical switch transmits the command to control the optical switch through RS232 serial communication. The optical switch receives the command successfully and returns the response.

(2)To program the switch directly over USB (RS232 control), we would throw in a DB9 to USB adaptor (connector), and then the switch can be connected to the USB port on your device.

(3) The optical switch is bidirectional in operation.

Software Control Chart (For Reference Only)


USR-TCP232-Test RS232 to Ethernet Convert tester
File(F) Options(O) Help(H)
COMSettings
PortNum COM2
BaudR 9600
DPaity NONE
DataB 8 bit
StopB 1 bit
Close
Recv Options
Receive to file...
Add line return
Receive As HEX
Receive Pause
Save... Clear
Send Options
Data from file ...
Auto Checksum
Auto Clear Input
Send As Hex
Send Recycle
Interval 10000 ms
Load... Clear
Change protocol type
COM port data receive
<OSW_OUT_OK>
<OSW_OUT_01>
Send
Send : 0
Recv : 0
Reset
Network data receive
Send
Change protocol type
Send : 0
Recv : 0
Reset
NetSettings
(1) Protocol
TCP Server
(2) Local host IP
192.168. 1 . 3
(3) Local host port
18888
Listening
Recv Options
Receive to file...
Add line return
Receive As HEX
Receive Pause
Save... Clear
Send Options
Data from file ...
Auto Checksum
Auto Clear Input
Send As Hex
Send Recycle
Interval 1000 ms
Load... Clear