

USB Absorptive Coaxial SP2T Switch 0.5GHz-43.5GHz



Features

- USB Controlled and Powered
- Control SW included.
- Low Power Cold Switching
- Insertion Loss 4.0dB
- Isolation 60dB
- 50 Ohm Matched

Product Description

RFSP2TA5M43GUSB2 is an absorptive USB controlled coaxial single pole two throw switch with a frequency range of 0.5 to 43.5GHz.

The power input of this switch is 23dBm max. The insertion loss is 4.0dB with a typical isolation of 60dB.

This product features fast switching speed, low insertion loss and high isolation.

The working temperature of this product is between - 40°C and + 85°C

Typical Applications

- Wireless Infrastructure
- Military and Aerospace Applications
- Test Instrumentation
- Radar Systems
- 5G Wireless Communications
- Microwave Radio Systems
- TR Modules
- Research and Development
- Cellular Base Stations

Electrical Specifications(TA = +25°C), USB Powered

Parameter	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range	0.5		8	8		26.5	26.5		43.5	GHz
Insertion Loss		2.0	2.5		4.0	4.5		4.5	5.2	dB
Insertion Loss Temperature Coefficient		0.003			0.003			0.003		dB/ °C
Isolation	60	85		50	60		45	55		dB
Input VSWR		1.6	2.0		2.5	2.8		1.8	2.5	: 1
Output VSWR		1.6	2.0		2.5	2.8		1.8	2.5	: 1
RF Input power (CW)			23			23			23	dBm
DC Power Dissipation		0.6			0.6			0.6		W
0.1dB Compression Point (P 0.1dB)		23			23			23		dBm
IIP3		55			50			45		dBm
Switching Speed					500 Typ.					ns
Bias Current					110 Max.					mA
Control Interface					USB 2.0 (Control Cable Included)					
Weight					0.08 Max.					lbs
Impedance					50					Ω
Input / Output Connectors					2.92mm-Female(Input) – 2.92mm-Female(Output)					
Package					Epoxy Sealed (Standard)					
					Hermetically Sealed (Optional)					

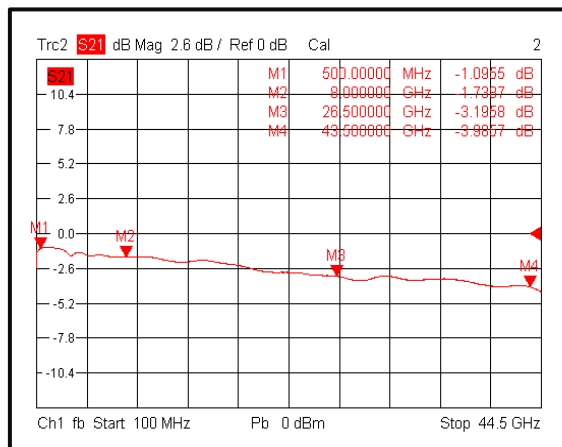
Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-40°C to +85°C (Case Temperature)
Storage Temperature	-50°C to +105°C
Thermal Shock	-40°C → +85°C (5 Cycles / 10 hours)
**Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +85°C for 72 Hours
Shock	1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude	Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)	MIL-STD-883 (For Hermetically Sealed Units)

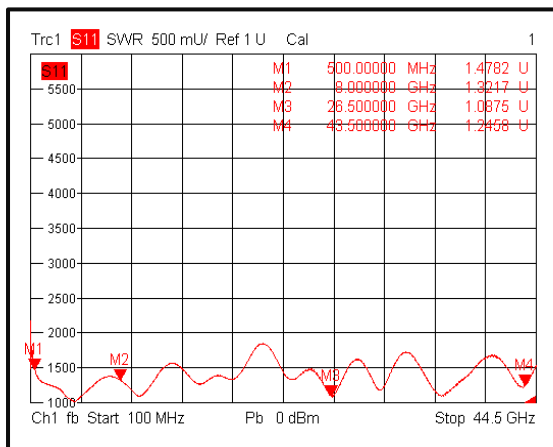
*For vibration testing details please see additional information section.

Typical Performance Plots

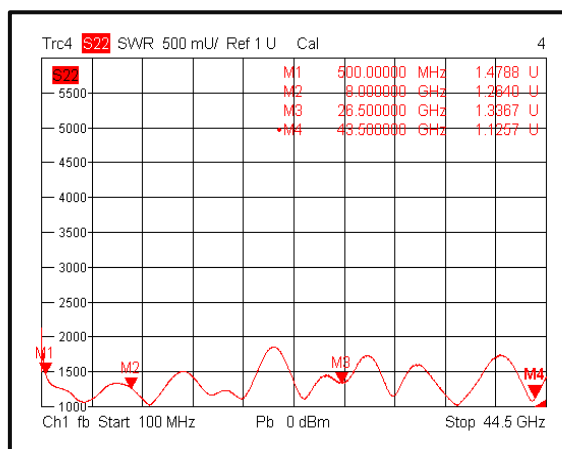
Insertion Loss @+25°C



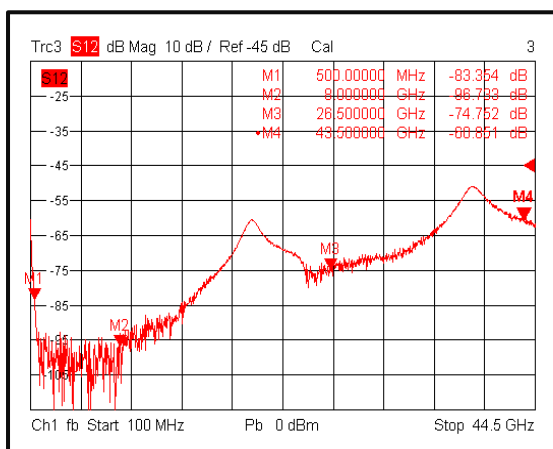
Input VSWR @+25°C



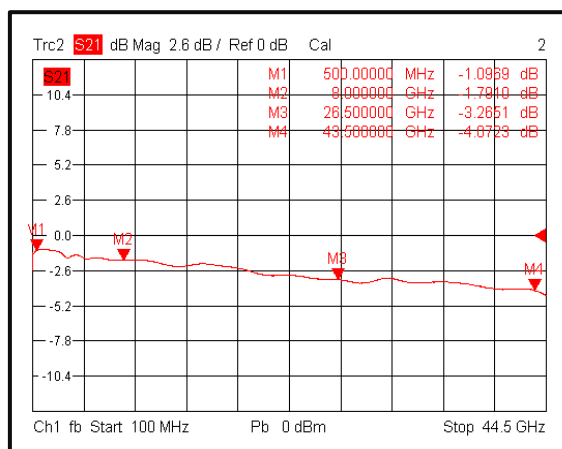
Output VSWR @+25°C



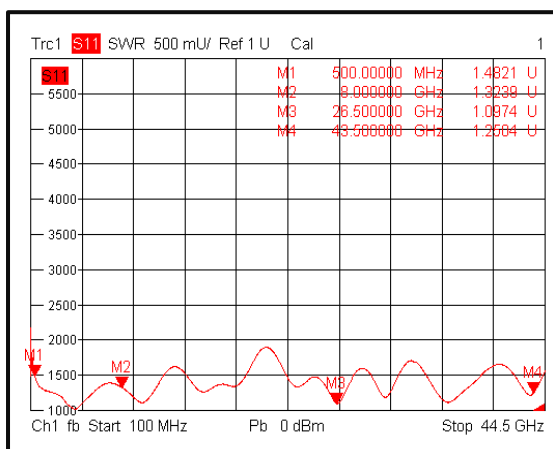
Isolation @+25°C



Insertion Loss @-40°C

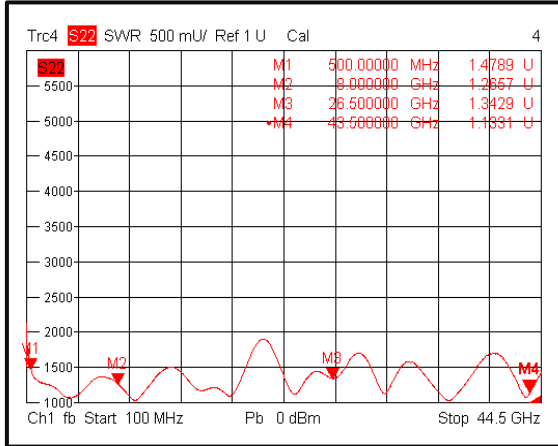


Input VSWR @-40°C

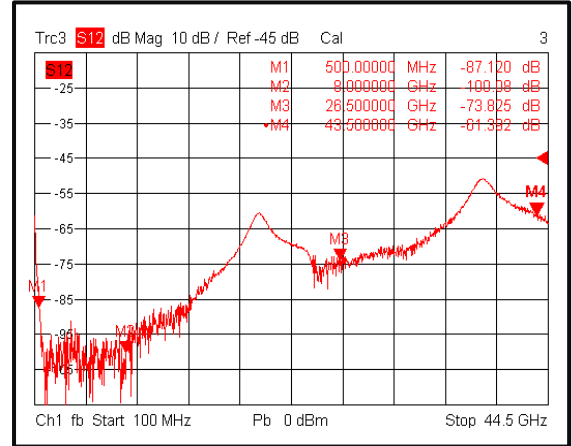


Typical Performance Plots

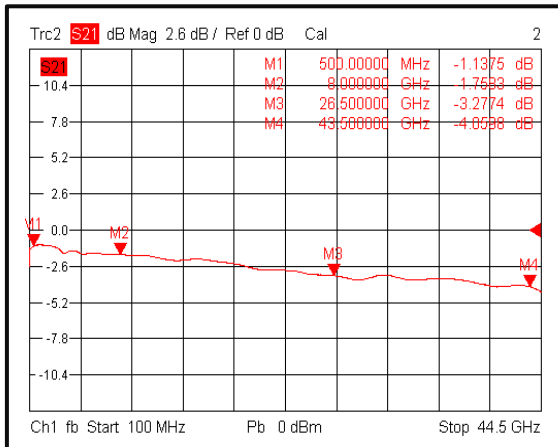
Output VSWR @-40°C



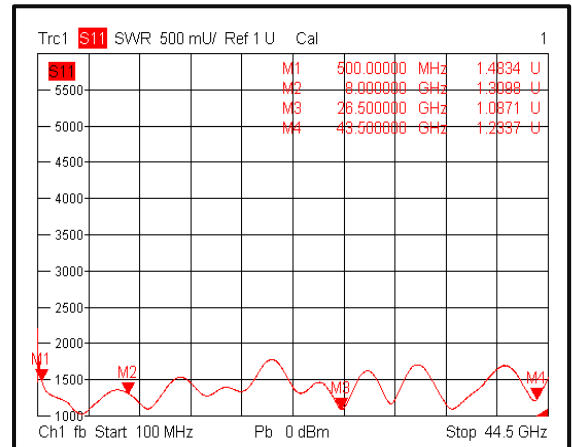
Isolation @-40°C



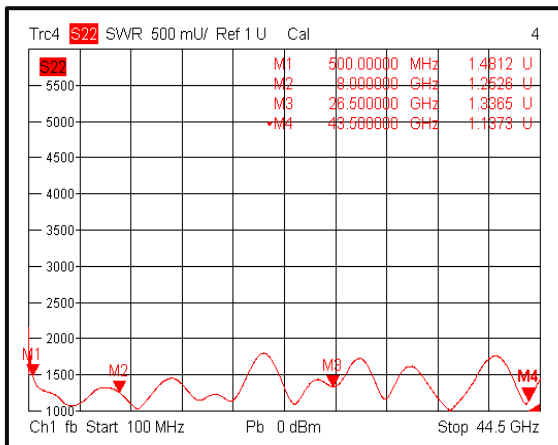
Insertion Loss @+85°C



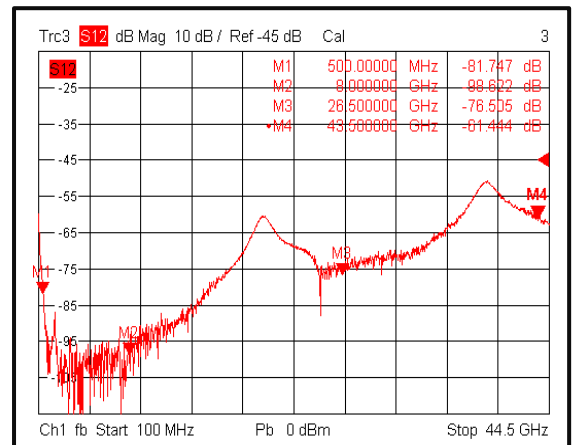
Input VSWR @+85°C



Output VSWR @+85°C

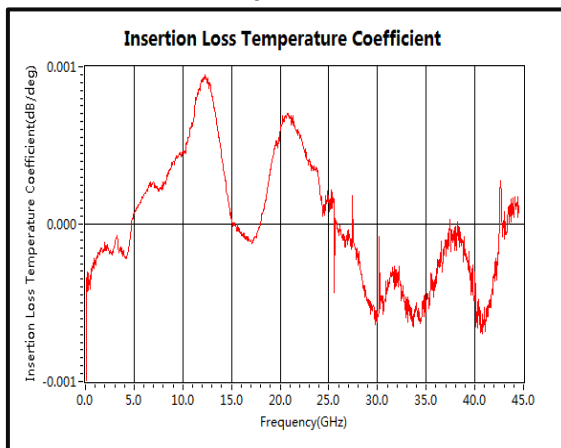


Isolation @+85°C

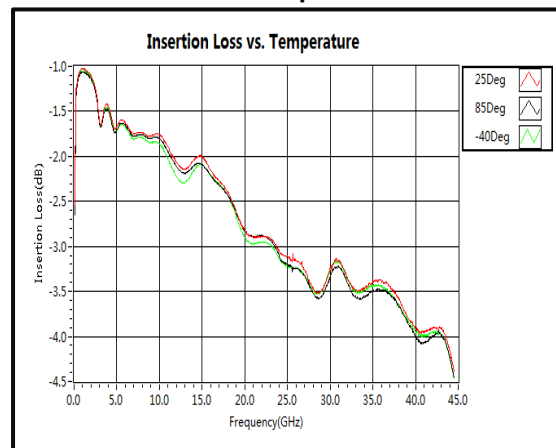


Typical Performance Plots

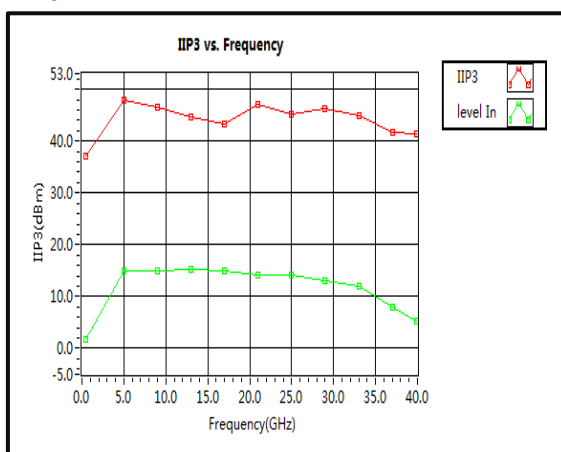
Insertion Loss Temperature Coefficient



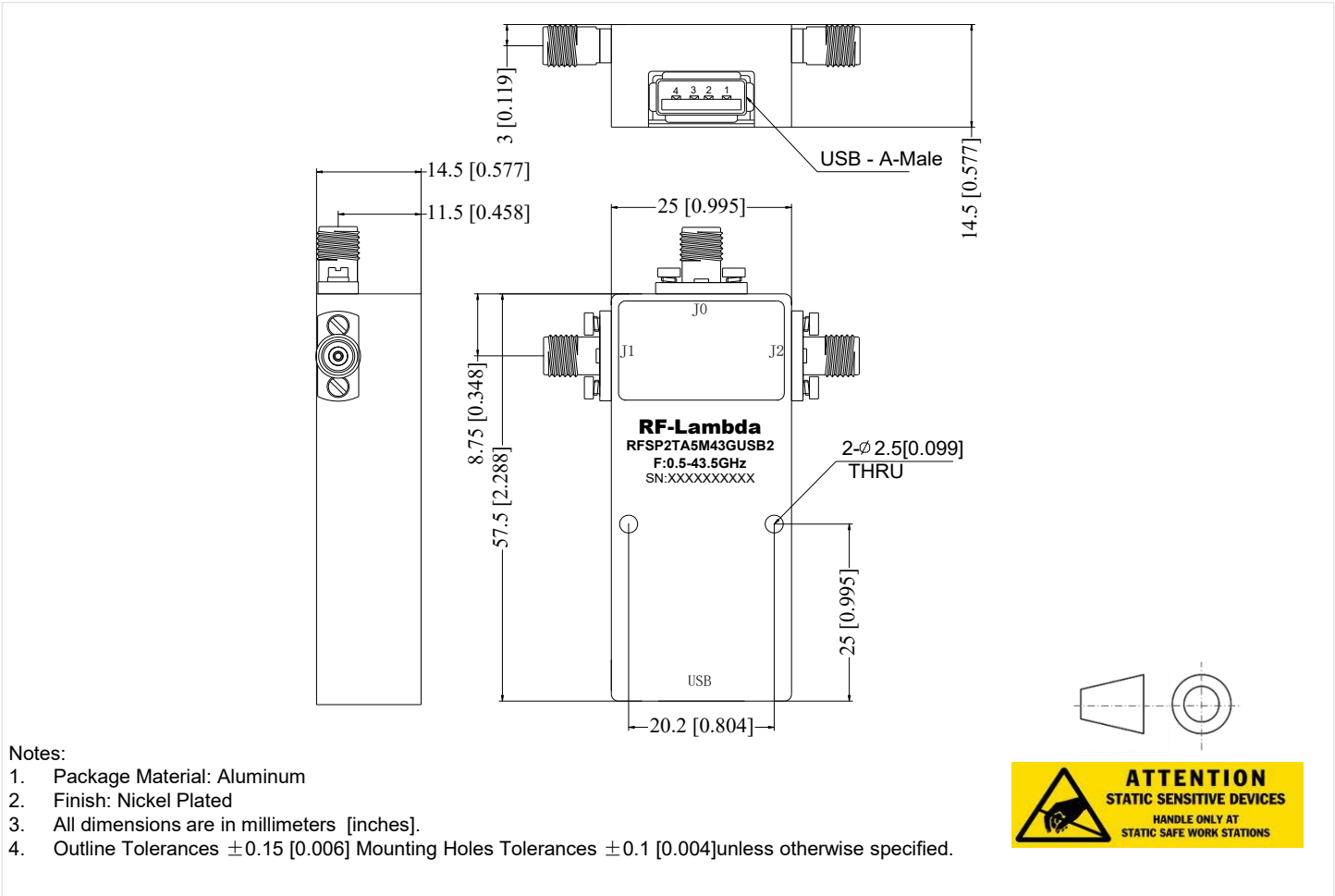
Insertion Loss vs. Temperature



IIP3



Outline Drawing



Notes:

1. Package Material: Aluminum
2. Finish: Nickel Plated
3. All dimensions are in millimeters [inches].
4. Outline Tolerances ± 0.15 [0.006] Mounting Holes Tolerances ± 0.1 [0.004] unless otherwise specified.

Packing List

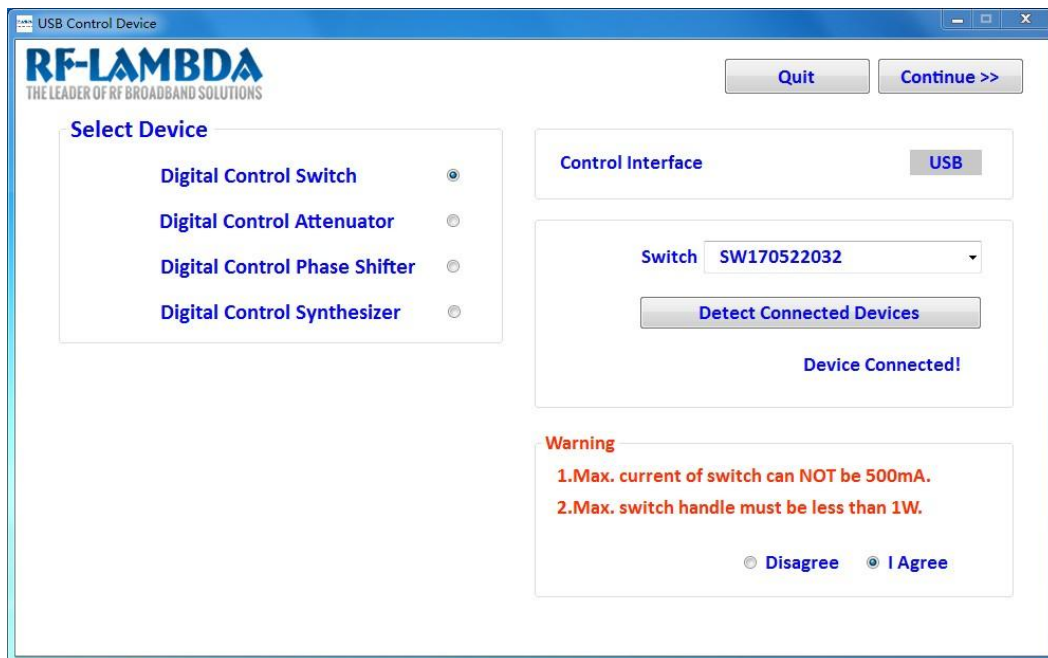
ID	Description	QTY
1	Fig a. USB/Ethernet Control RF Switch	1
2	Fig b. USB 2.0 Cable (5 feet / 1.5 meter)	1

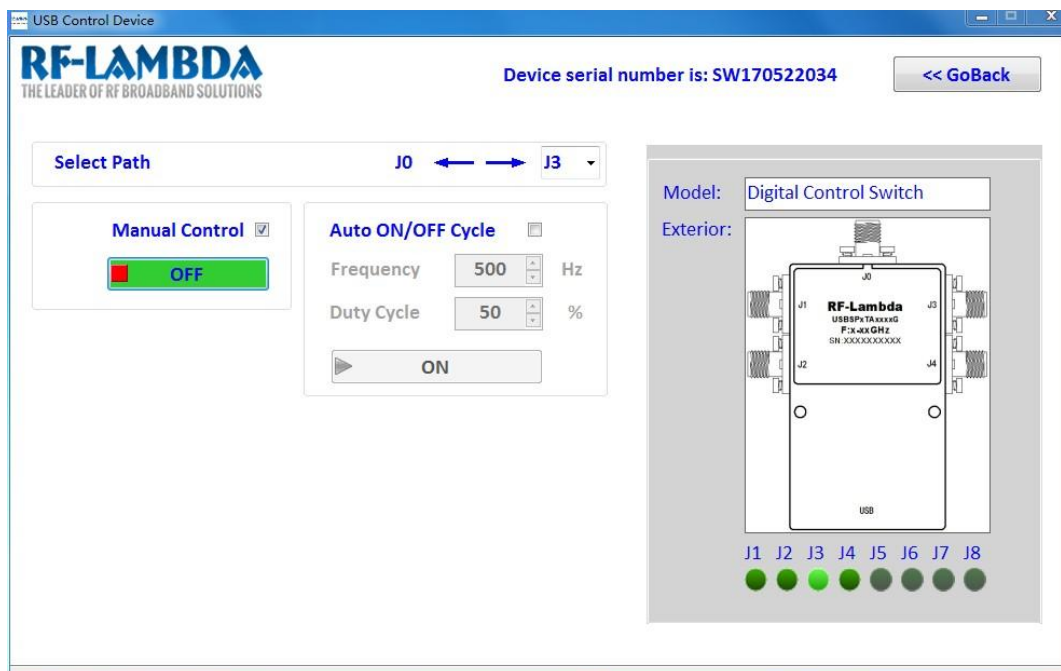
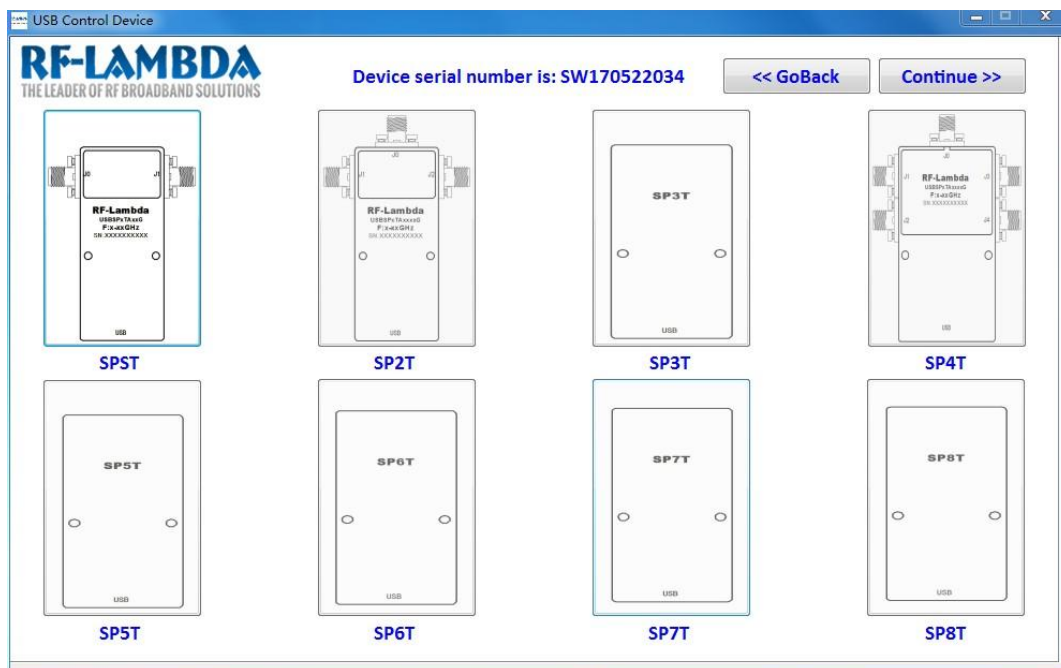


Fig b.



Figure 1 (USB Control Panel)





Additional Information

Documentation	Webpage
ESD Policy	https://rflambda.com/pdf/rflambda_esd_control.pdf
Connector Torque Specifications	https://www.rflambda.com/pdf/Torque_Specifications.pdf
Random Vibration Test Standard	https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf

Ordering Information

Part Number	Modification	Description
RFSP2TA5M43GUSB2	Connectors 2.92mm-Female	0.5-43.5GHz SP2T USB Controlled Switch

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