

*Xtra Long Life 10 million cycles*

## USB/Ethernet RF Switch Matrix RC-3SPDT-A18

50Ω DC to 18 GHz

### The Big Deal

- 3 mechanical SPDT switch box
- High reliability, 10 million switch cycles
- 20W power rating (cold switching)
- High isolation, 85 dB typ



Case Style: LM1850



Software Package

### Applications

- R&D
- Automated Test equipment
- Controlling RF signal paths

| Model No.                   | Description                              | Qty.     |
|-----------------------------|------------------------------------------|----------|
| <b>RC-3SPDT-A18</b>         | <b>USB/Ethernet RF Switch</b>            | <b>1</b> |
| <b>Included Accessories</b> |                                          |          |
| AC/DC-24-3W1                | AC/DC 24V Adapter                        | 1        |
| CBL-3W1-XX                  | AC Power Cord (see Ordering Information) | 1        |
| USB-CBL-AB-3+               | 2.7 ft USB cable                         | 1        |

#### RoHS Compliant

See our web site for RoHS Compliance methodologies and qualifications

### Product Overview

Mini-Circuits' RC-3SPDT-A18 is a general purpose RF switch matrix controlled via either USB or Ethernet-TCP/IP (supports HTTP and Telnet protocols). The model contains 3 electromechanical SPDT, absorptive fail-safe RF switches constructed in break-before-make configuration and powered by +24VDC with switching time of 25 ms typical. The RF switches operate over a wide frequency band from DC to 18 GHz, have low insertion loss (0.2 dB typical) and high isolation (85 dB typical), making the switch matrix perfectly suitable for a wide variety of RF applications.

The RC-3SPDT-A18 is constructed in a compact, rugged metal case (4.5" x 6.0" x 2.25") with 9 SMA (F) connectors (COM, 1 and 2 for each switch) USB type B port, standard RJ45 network socket and DC power input. Full software support is provided and can be downloaded from our website any time at <https://www.minicircuits.com/softwaredownload/rfswitchcontroller.html>. The package includes our user-friendly GUI application for Windows and a full API with programming instructions for Windows and Linux environments (both 32-bit and 64-bit systems). Also included is a 2.7 ft USB cable and AC/DC power adapter. Longer USB cables, Ethernet cables and a mounting bracket are available as optional accessories.

### Key Features

| Feature                                                                                   | Advantages                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ethernet-TCP/IP- <b>HTTP</b> and <b>Telnet</b> Protocols<br>(Supports DHCP and Static IP) | The RC-3SPDT-A18 switch matrix can be controlled from any Windows®, Mac®, or Linux® computer, or even a mobile device with a network connection and Ethernet-TCP/IP (HTTP or Telnet protocols) support. Using a VPN would allow remote control from anywhere in the world. |
| USB HID (Human Interface Device)                                                          | User may also control the switch matrix via USB connection. Plug-and-Play, no driver required. Compatible with Windows® or Linux® operating systems using 32 and 64 bit architecture.                                                                                      |
| RF SPDT absorptive electromechanical switches                                             | Wideband (DC to 18 GHz) with low insertion loss (0.2 dB typ.), very high isolation (85 dB typ.), and high power rating (20W cold switching).                                                                                                                               |
| Switch Cycle Counters                                                                     | Allows user to monitor the exact usage and plan test requirements accordingly.                                                                                                                                                                                             |
| Break-before-make configuration                                                           | Prevents the momentary connection of the old and new signal paths and reduces transient phenomena.                                                                                                                                                                         |

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**Patents:** Protected by US Patents 5,272,458; 6,414,577; 6,650,210; 7,633,361 and 7,843,289



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Rev. D  
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RC-3SPDT-A18  
RAV  
200713  
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## USB/Ethernet RF Switch Matrix

## RC-3SPDT-A18

### Electrical Specifications

| Parameter                                                                                                                               | Port                 | Conditions                            | Min. | Typ. | Max. | Units                    |
|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------------------------|------|------|------|--------------------------|
| Frequency                                                                                                                               | All RF Ports         | —                                     | DC   |      | 18   | GHz                      |
| <b>Power On Sequence: Connect the 24V power, followed by the USB control and/or Ethernet cable before turning on the Switch Matrix.</b> |                      |                                       |      |      |      |                          |
| RF Insertion Loss (per switch)                                                                                                          |                      | DC to 1 GHz                           | –    | 0.10 | 0.15 | dB                       |
|                                                                                                                                         |                      | 1 GHz to 8 GHz                        | –    | 0.15 | 0.30 |                          |
|                                                                                                                                         |                      | 8 GHz to 12 GHz                       | –    | 0.25 | 0.40 |                          |
|                                                                                                                                         |                      | 12 GHz to 18 GHz                      | –    | 0.30 | 0.50 |                          |
| RF VSWR                                                                                                                                 |                      | DC to 1 GHz                           | –    | 1.05 | 1.10 | :1                       |
|                                                                                                                                         |                      | 1 GHz to 8 GHz                        | –    | 1.20 | 1.30 |                          |
|                                                                                                                                         |                      | 8 GHz to 12 GHz                       | –    | 1.20 | 1.35 |                          |
|                                                                                                                                         |                      | 12 GHz to 18 GHz                      | –    | 1.25 | 1.40 |                          |
| RF Isolation (per switch)                                                                                                               |                      | DC to 1 GHz                           | 85   | 100  | –    | dB                       |
|                                                                                                                                         |                      | 1 GHz to 8 GHz                        | 75   | 90   | –    |                          |
|                                                                                                                                         |                      | 8 GHz to 12 GHz                       | 70   | 80   | –    |                          |
|                                                                                                                                         |                      | 12 GHz to 18 GHz                      | 60   | 66   | –    |                          |
| Switching Time                                                                                                                          |                      | –                                     | –    | 25   | –    | ms                       |
| RF Power (cold switching) <sup>1,2</sup>                                                                                                |                      | –                                     | –    | –    | 20   | W                        |
| Rated Voltage                                                                                                                           | 24V <sub>DC</sub> IN | provided via external power adapter   | 23   | 24   | 25   | V                        |
|                                                                                                                                         | USB Port             | –                                     | –    | 5    | –    |                          |
| Rated Current                                                                                                                           | 24V <sub>DC</sub> IN | All switches in COM -> 2 position     | –    | 610  | 850  | mA                       |
|                                                                                                                                         |                      | All switches in COM -> 1 position     | –    | 105  | 130  |                          |
|                                                                                                                                         | USB Port             | All switches in COM -> 2 position     | –    | 10   | 20   |                          |
|                                                                                                                                         |                      | All switches in COM -> 1 position     | –    | 10   | 20   |                          |
| Life (per switch)                                                                                                                       |                      | @ 100 mW (hot switching) <sup>3</sup> | 10   | –    | –    | million switching cycles |
|                                                                                                                                         |                      | @ 1 W (hot switching) <sup>3</sup>    | –    | 3    | –    |                          |

<sup>1</sup> Power handling is specified with RF applied to the COM port and external load connected to either 1 or 2 of the respective switch

<sup>2</sup> Cold switching describes switch operation where there is no significant user signal present at the moment the switch contacts open or close.

<sup>3</sup> Exceeding these limits will result in reduced life.

### Absolute Maximum Ratings<sup>4</sup>

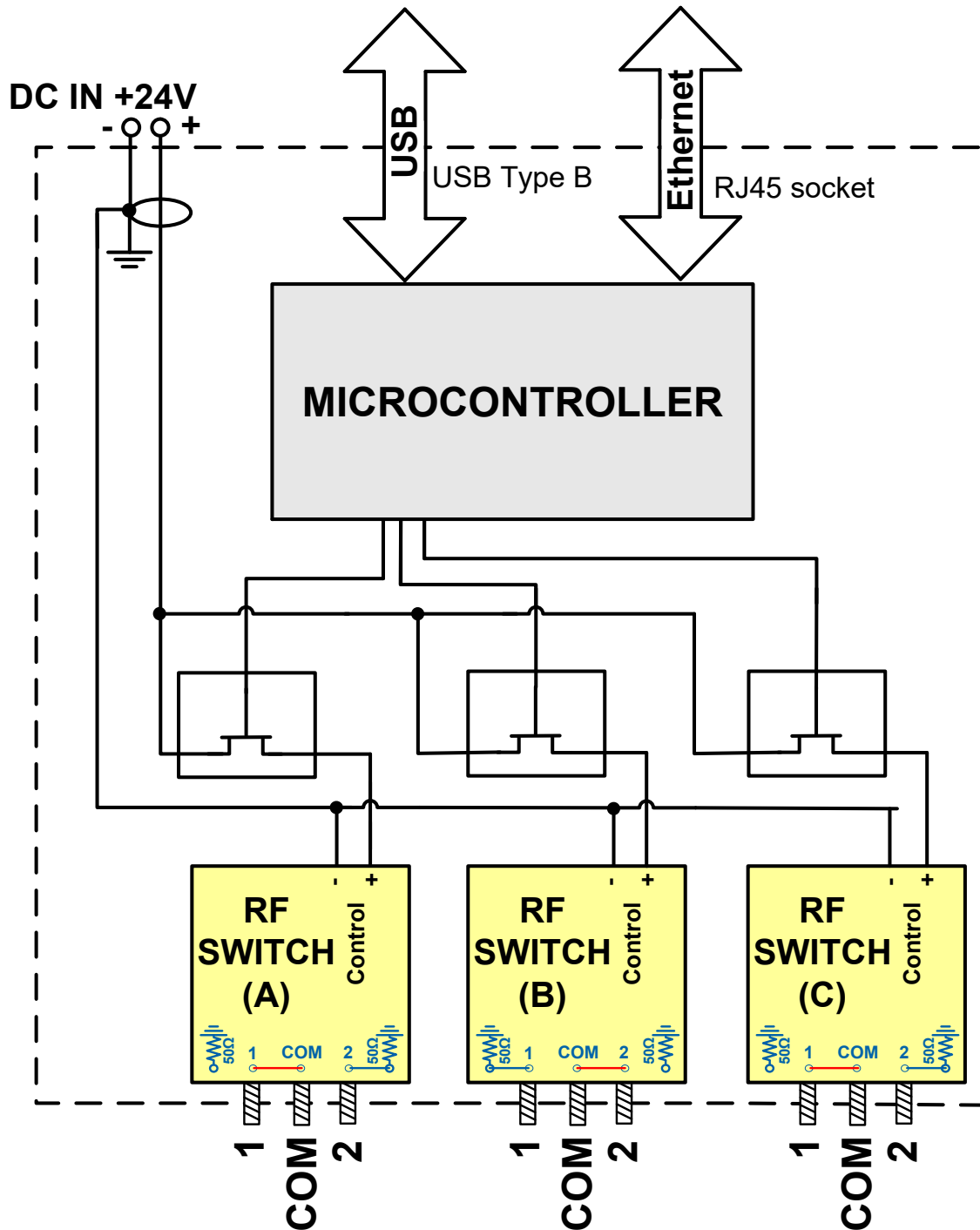
|                                      |               |
|--------------------------------------|---------------|
| Operating Temperature                | 0°C to 40°C   |
| Storage Temperature                  | -15°C to 85°C |
| DC Voltage max.                      | 26V           |
| RF power (through path)              | 20W           |
| RF power (into internal termination) | 1W            |

<sup>4</sup> Permanent damage may occur if any of these limits are exceeded.

### Connections

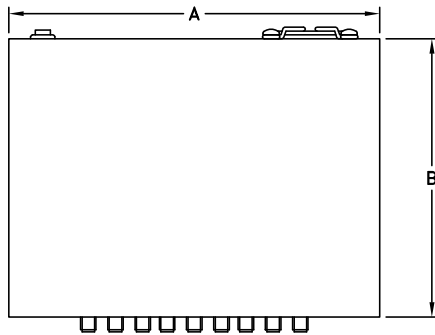
|                         |                                    |
|-------------------------|------------------------------------|
| 24V <sub>DC</sub> IN    | (2.1 mm center positive DC Socket) |
| RF Switch A (1, COM, 2) | (SMA female)                       |
| RF Switch B (1, COM, 2) | (SMA female)                       |
| RF Switch C (1, COM, 2) | (SMA female)                       |
| USB                     | (USB type B receptacle)            |
| Network (Ethernet/LAN)  | (RJ45 socket)                      |

### Block Diagram

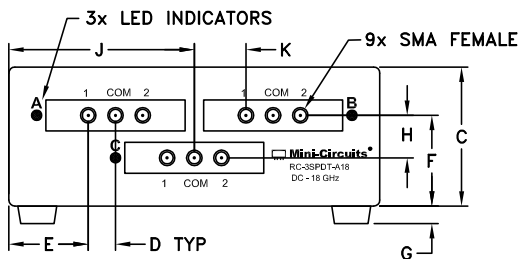


### Outline Drawing (LM1850)

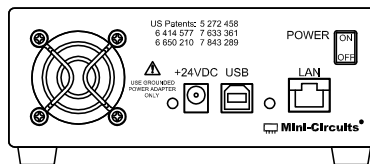
TOP VIEW



FRONT VIEW

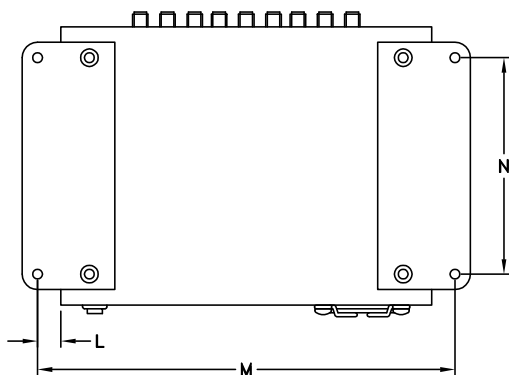


REAR VIEW

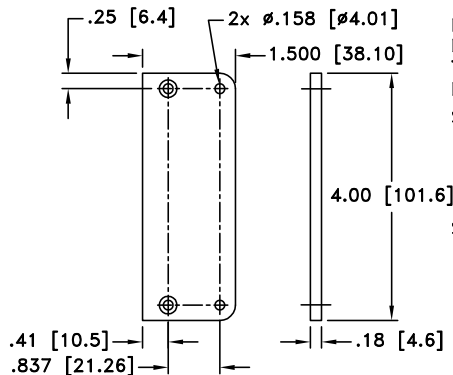


BOTTOM VIEW

Shown with Rubber feet removed and Brackets Installed.



BRACKET OPTION  
ONE SET OF 2 EACH.



TOLERANCE:  $\pm 0.005$

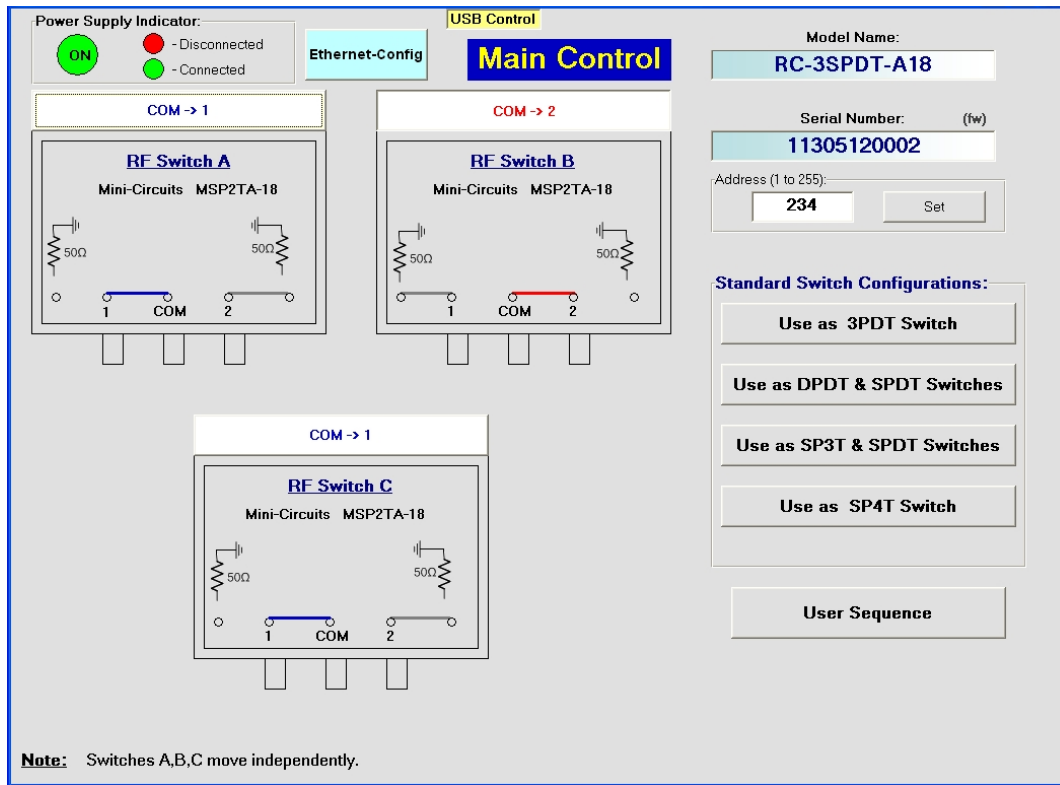
INSTRUCTION FOR MOUNTING BRACKETS:  
TOOL REQUIRED:  
PHILLIPS HEAD SCREW DRIVER  
STEP 1: REMOVE RUBBER FEET FROM THE BOTTOM OF THE UNIT. DO NOT DISCARD THE FASTENERS.  
STEP 2: MOUNT THE BRACKETS WITH THE FASTENERS REMOVED IN STEP 1, USING THE COUNTER-BORE HOLES IN THE BRACKET.

### Outline Dimensions (inch/mm)

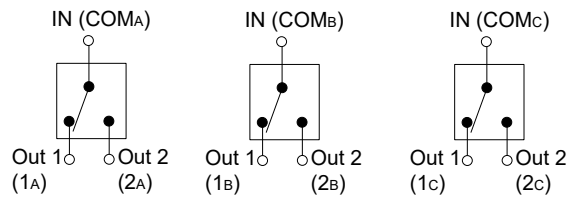
| A     | B     | C    | D     | E    | F    | G    | H     | J    | K     | WT. GRAMS |
|-------|-------|------|-------|------|------|------|-------|------|-------|-----------|
| 6.00  | 4.50  | 2.25 | 0.440 | 1.28 | 1.47 | 0.28 | 3.500 | .375 | 6.75  | 875       |
| 152.4 | 114.3 | 57.2 | 11.18 | 32.5 | 37.3 | 7.1  | 88.9  | 9.52 | 171.4 |           |

### Configuration A: 3 SPDT switches

- Power handling is specified with RF applied to the COM port and output load connected to either 1 or 2 of the respective switch.
- When connecting a coaxial semi flex cable, tighten connectors alternately using an 8in/lb torque wrench to insure proper contact at each end.



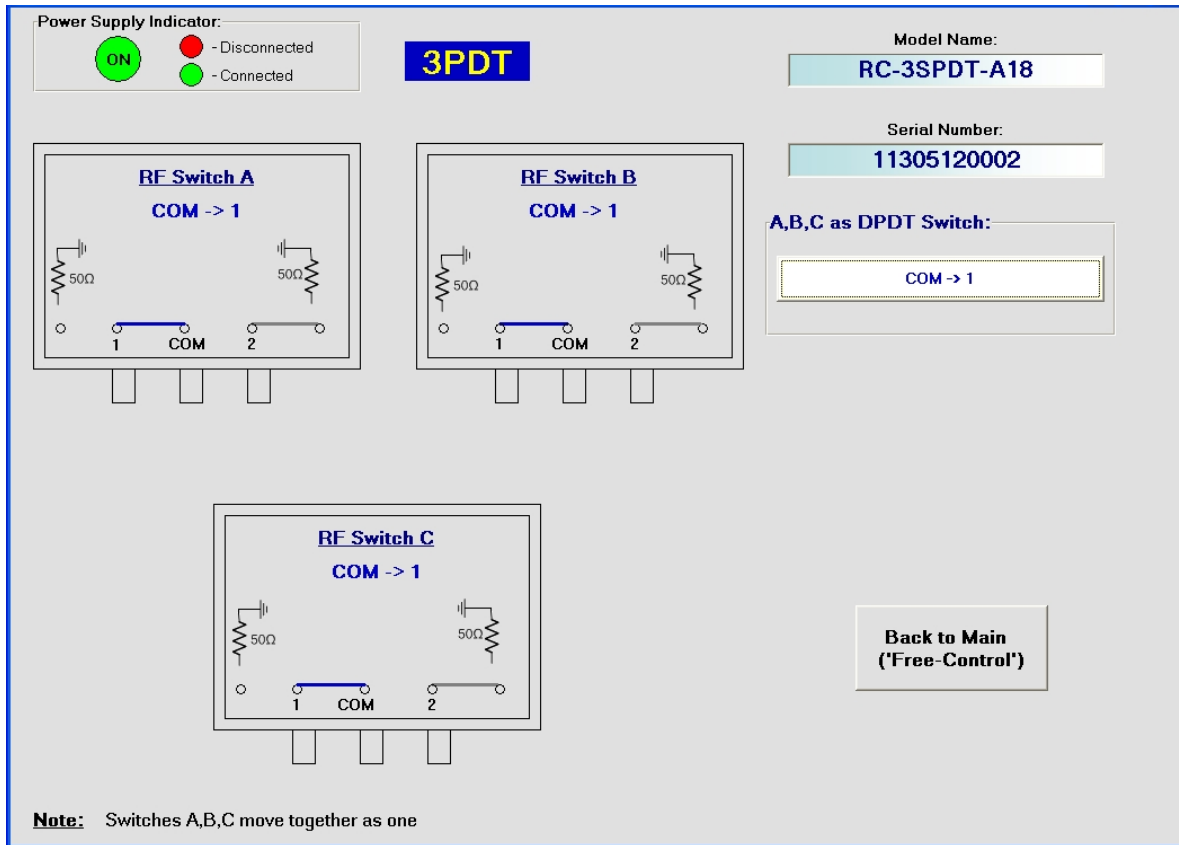
### Config. A



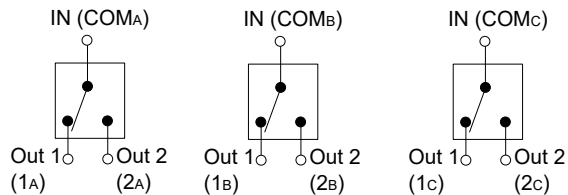
**SPDT:** Switch A, B or C Logic  
 IN  $\longleftrightarrow$  Out1 : 0  
 IN  $\longleftrightarrow$  Out2 : 1  
 Switches move independently.

### Configuration B: 3PDT switch

- Power handling is specified with RF applied to the COM port and output load connected to either 1 or 2 of the respective switch.
- When connecting a coaxial semi flex cable, tighten connectors alternately using an 8in/lb torque wrench to insure proper contact at each end.



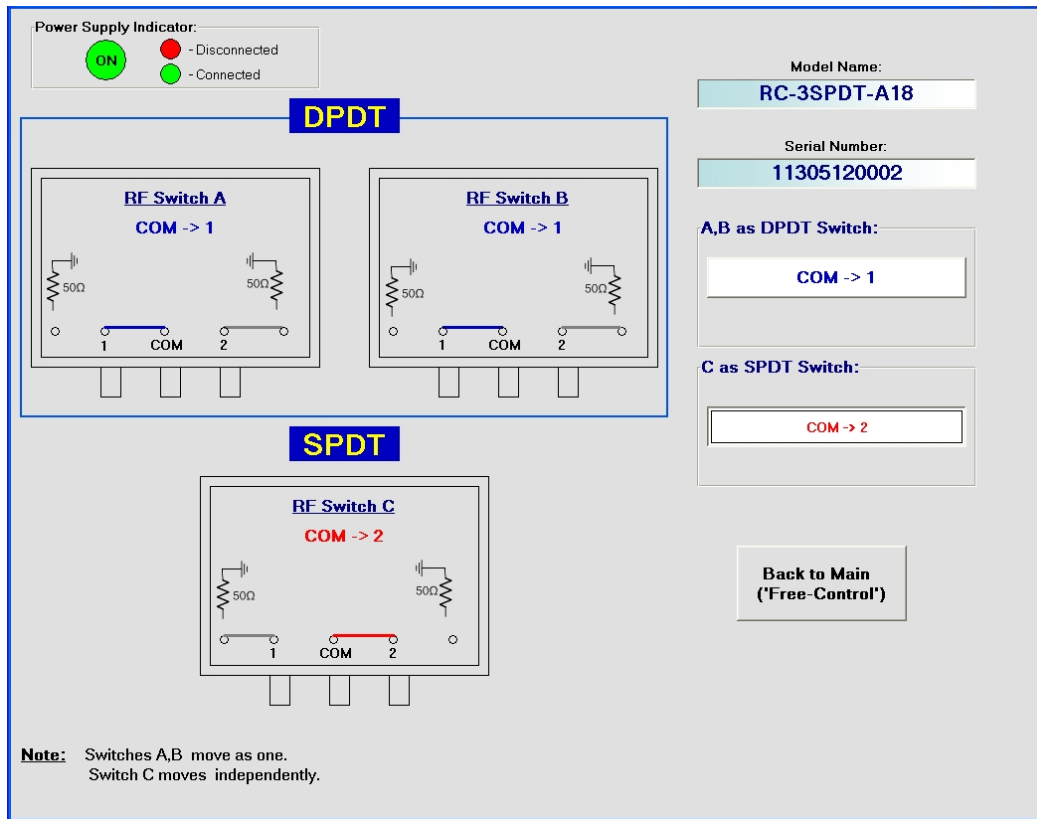
### Config. C



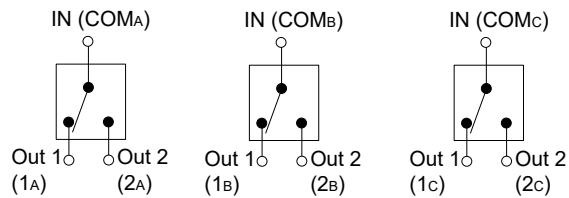
**3PDT:** Switch A, B & C Logic  
 IN  $\longleftrightarrow$  Out1 : 0, 0, 0  
 IN  $\longleftrightarrow$  Out2 : 1, 1, 1  
 All three switches move together as one.

### Configuration C: DPDT & SPDT switches

- Power handling is specified with RF applied to the COM port and output load connected to either 1 or 2 of the respective switch.
- When connecting a coaxial semi flex cable, tighten connectors alternately using an 8in/lb torque wrench to insure proper contact at each end.



### Config. B



#### DPDT: Switch A & B Logic

IN  $\longleftrightarrow$  Out1 : 0, 0

IN  $\longleftrightarrow$  Out2 : 1, 1

Switches A&B move together as one,  
 switch C is separate.

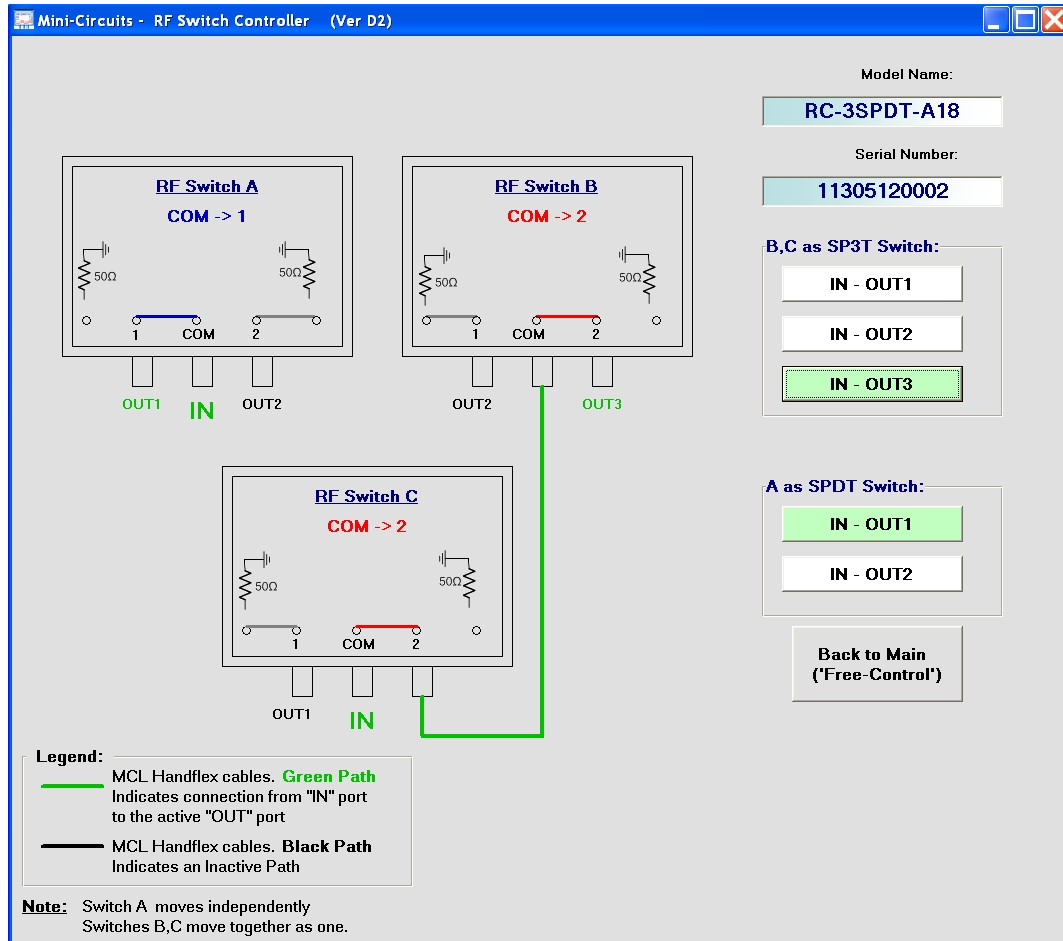
#### SPDT: Switch C Logic

IN  $\longleftrightarrow$  Out1 : 0

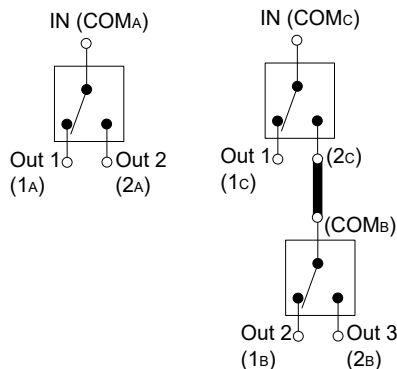
IN  $\longleftrightarrow$  Out2 : 1

### Configuration D: SPDT & SP3T switches

- Power handling is specified with RF applied to the COM port and output load connected to either 1 or 2 of the respective switch.
- When connecting a coaxial semi flex cable, tighten connectors alternately using an 8in/lb torque wrench to insure proper contact at each end.



### Config. D



#### SPDT: Switch A Logic

IN  $\longleftrightarrow$  Out1 : 0

IN  $\longleftrightarrow$  Out2 : 1

#### SP3T:

Switch B & C Logic

IN  $\longleftrightarrow$  Out1 : 0, 0

IN  $\longleftrightarrow$  Out2 : 1, 0

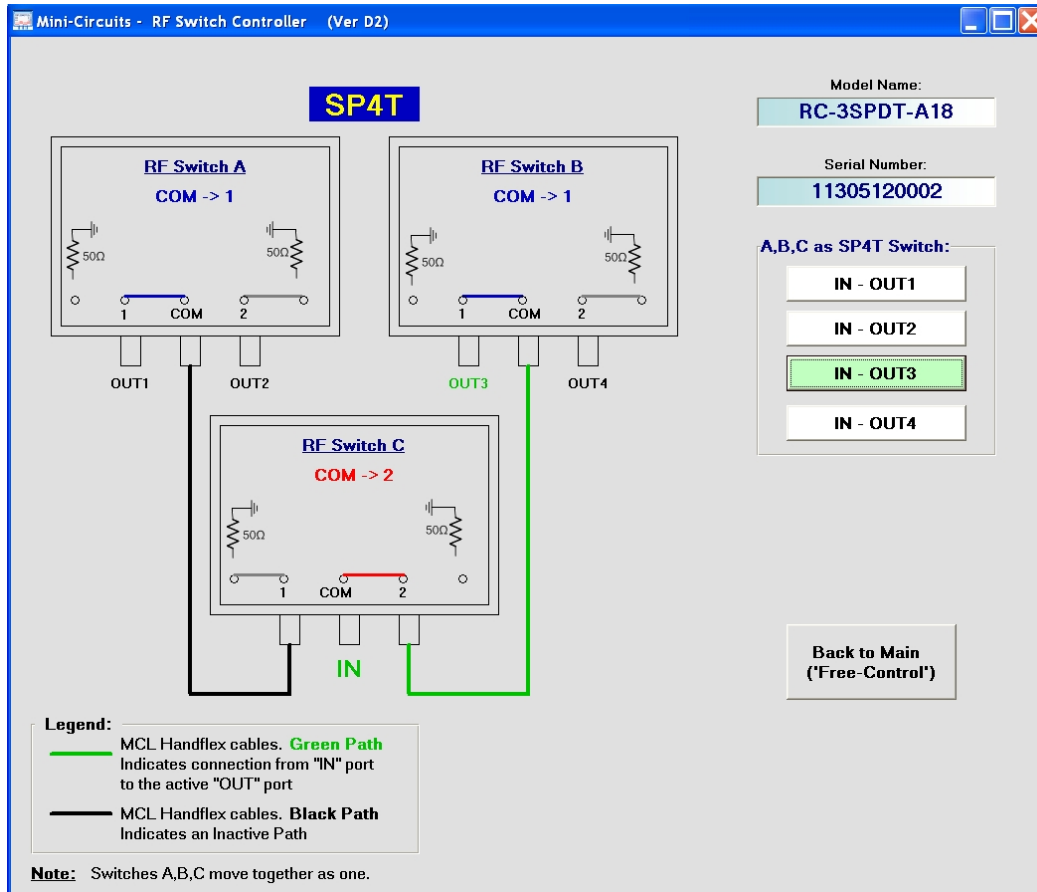
IN  $\longleftrightarrow$  Out3 : 1, 1

Switches B & C move together as one, switch A is separate

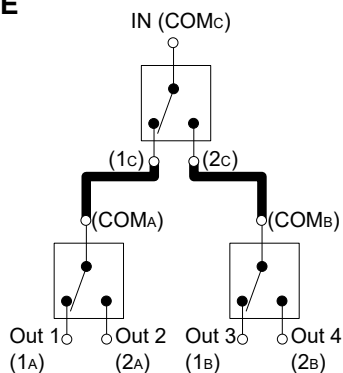


### Configuration C: SP4T switch

- Power handling is specified with RF applied to the COM port and output load connected to either 1 or 2 of the respective switch.
- When connecting a coaxial semi flex cable, tighten connectors alternately using an 8in/lb torque wrench to insure proper contact at each end.



### Config. E



### SP4T:

Switch A, B & C Logic

IN  $\longleftrightarrow$  Out1 : 0,  $\emptyset$ , 0

IN  $\longleftrightarrow$  Out2 : 1,  $\emptyset$ , 0

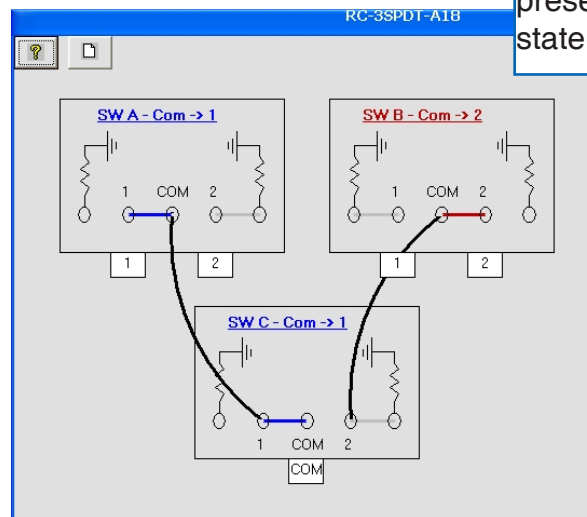
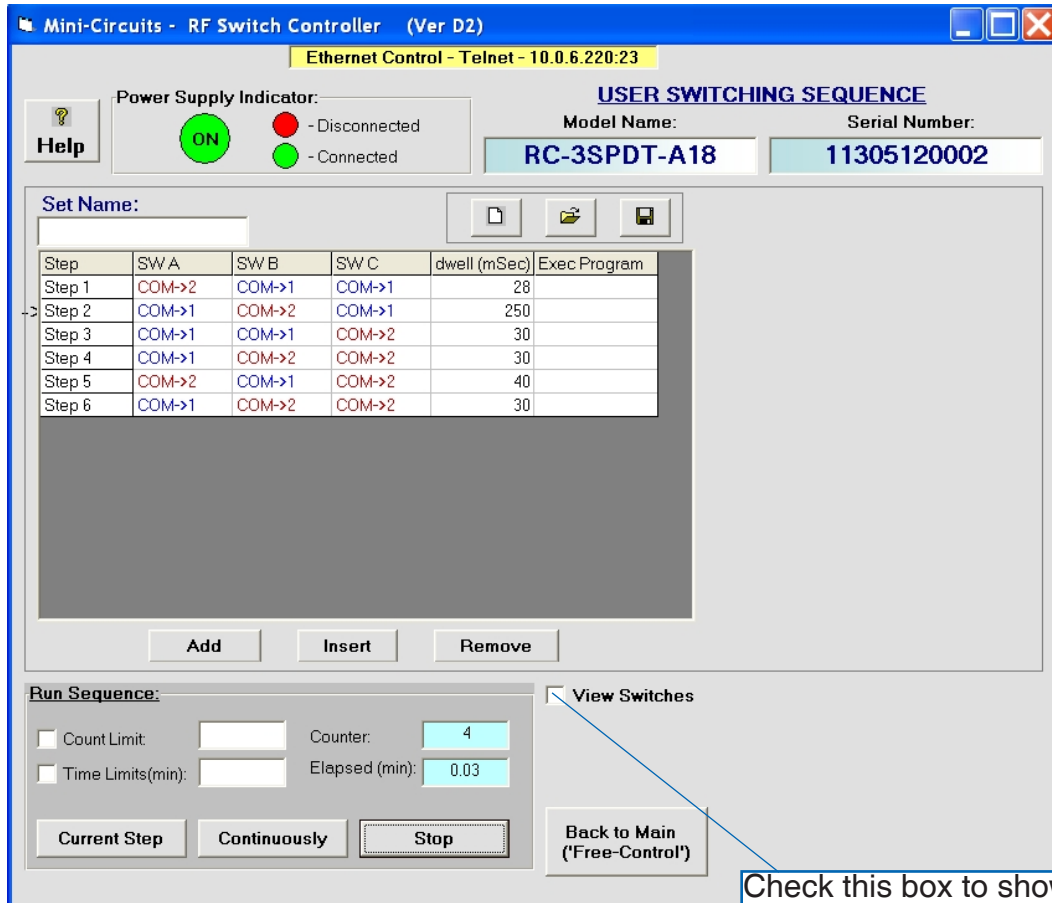
IN  $\longleftrightarrow$  Out3 :  $\emptyset$ , 0, 1

IN  $\longleftrightarrow$  Out4 :  $\emptyset$ , 1, 1

All three switches move together as one.

### User Switching Sequence - for setting any configuration or sequence needed

- Power handling is specified with RF applied to the COM port and output load connected to either 1 or 2 of the respective switch.
- When connecting a coaxial semi flex cable, tighten connectors alternately using an 8in/lb torque wrench to insure proper contact at each end.



- For instructions on using the GUI See the [user guide](#) on Mini-Circuits' website
- For programming instructions of the switch matrix see the [programming guide](#) and [AN-49-001](#) on Mini-Circuits' website

### Software & Documentation Download:

- Mini-Circuits' full software and support package including user guide, Windows GUI, DLL files, programming manual and examples can be downloaded free of charge from:  
<https://www.minicircuits.com/softwaredownload/rfswitchcontroller.html>
- Please contact [testsolutions@minicircuits.com](mailto:testsolutions@minicircuits.com) for support.

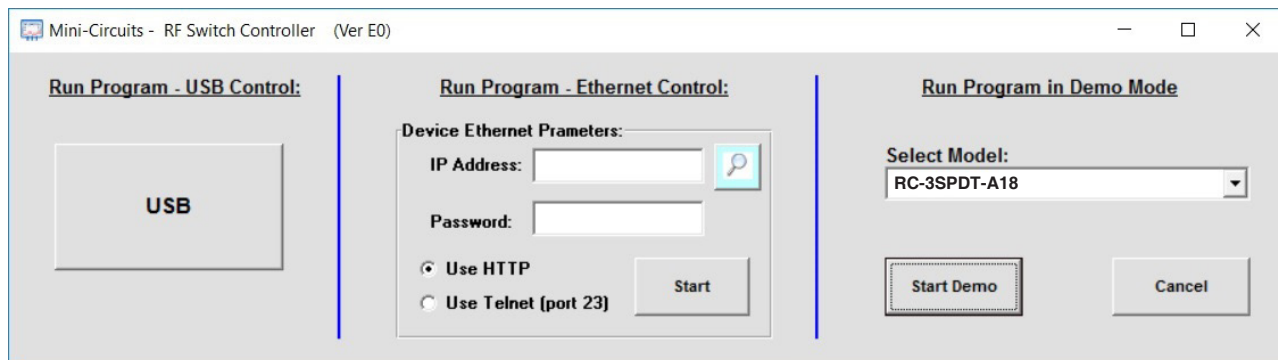
### Minimum System Requirements

| Parameter           | Requirements                                 |                                                                                                                |
|---------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Interface           | USB HID or HTTP Get/Post or Telnet protocols |                                                                                                                |
| System requirements | GUI:                                         | Windows 32 & 64 bit systems from Windows 98 up to Windows 10                                                   |
|                     | API DLL (USB)                                | Windows 32 & 64 bit systems with ActiveX or .Net support from Windows 98 up to Windows 10                      |
|                     | USB interrupt API                            | Linux, Windows systems from Windows 98 up to Windows 10                                                        |
|                     | Telnet & HTTP                                | Any Windows, Mac, or Linux computer with a network port and Ethernet-TCP/IP (HTTP or Telnet protocols) support |
| Hardware            | Pentium® II or higher                        |                                                                                                                |

### Graphical User Interface (GUI) for Windows

#### Key Features:

- Set each switch manually
- Set timed sequence of switching states
- Configure switch address and upgrade Firmware



#### Steps to start RC-3SPDT-A18 GUI via USB

- Click on USB button.
- If more than one unit is connected select S/N from list and click OK.
- Start working.

#### Steps to start RC-3SPDT-A18 GUI via Ethernet

- Click on search icon.
- Select unit from list of IP addresses and click select
- The selected IP will appear in the IP Address field.
- Select communication protocol (Telnet or HTTP)
- Click on Start and begin working.

### Application Programming Interface (API)

#### Windows Support:

- API DLL files exposing the full switch matrix functionality.
  - ActiveX COM DLL file for creation of 32-bit programs
  - .Net library DLL file for creation of 32 / 64-bit programs
- HTTP Get/Post and Telnet protocols use SCPI commands to provide full control.
- Supported by most common programming environments (refer to application note [AN-49-001](#) for summary of tested environments)

#### Linux Support:

- Full switch matrix control in a Linux environment is achieved by way of USB interrupt commands. See programming manual at [https://www.minicircuits.com/softwaredownload/Prog\\_Manual-2-Switch.pdf](https://www.minicircuits.com/softwaredownload/Prog_Manual-2-Switch.pdf) for details

## USB/Ethernet RF Switch Matrix

## RC-3SPDT-A18

Ordering, Pricing & Availability Information see our web site

| Model        | Description                        |
|--------------|------------------------------------|
| RC-3SPDT-A18 | USB/Ethernet RF SPDT Switch Matrix |

| Included Accessories                                                              | Part No.      | Description                                                                                                    |
|-----------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------|
|  | AC/DC-24-3W1  | AC/DC 24V <sub>DC</sub> Grounded Power Adaptor.<br>Operating temperature: 0°C to +40°C, I <sub>Max</sub> =2.5A |
|                                                                                   | CBL-3W1-XX    | AC Power Cord (Select one power cord from below with each Switch Matrix box)                                   |
|  | USB-CBL-AB-3+ | 2.7 ft (0.8 m) USB Cable: USB type A(Male) to USB type B(Male)                                                 |

| AC Power Cords <sup>5</sup>                                                         | Part No.   | Description                        |
|-------------------------------------------------------------------------------------|------------|------------------------------------|
|    | CBL-3W1-US | Power Cord for United States       |
|    | CBL-3W1-EU | Power Cord for Europe              |
|   | CBL-3W1-UK | Power Cord for United Kingdom      |
|  | CBL-3W1-AU | Power Cord for Australia and China |
|  | CBL-3W1-IL | Power Cord for Israel              |

<sup>5</sup>. Power cords for other countries are also available, if you need a power cord for a country not listed in the table please contact [testsolutions@minicircuits.com](mailto:testsolutions@minicircuits.com).

| Optional Accessories  | Description                                                        |
|-----------------------|--------------------------------------------------------------------|
| USB-CBL-AB-3+ (spare) | 2.7 ft (0.8 m) USB Cable: USB type A(Male) to USB type B(Male)     |
| USB-CBL-AB-7+         | 6.8 ft (2.1 m) USB Cable: USB type A(Male) to USB type B(Male)     |
| USB-CBL-AB-11+        | 11 ft (3.4 m) USB Cable: USB type A(Male) to USB type B(Male)      |
| CBL-RJ45-MM-5+        | 5 ft (1.5 m) Ethernet cable: RJ45(Male) to RJ45(Male) Cat 5E cable |
| BKT-272-08+           | Bracket (One set of 2 each)                                        |

### Additional Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)



# Xtra Long Life USB/Ethernet RF SPDT

## RC-3SPDT-A18

### Typical Performance Data

TEST CONDITIONS: @Temperature = 0degC

| FREQUENCY<br>(MHz) | INSERTION LOSS<br>ON<br>(dB) |       | ISOLATION<br>OFF<br>(dB) |        | VSWR COM<br>(:1) |      | VSWR<br>COM->2<br>(:1) |      | VSWR<br>COM->1<br>(:1) |      |
|--------------------|------------------------------|-------|--------------------------|--------|------------------|------|------------------------|------|------------------------|------|
|                    | COM-1                        | COM-2 | COM-1                    | COM-2  | ON               | OFF  | 1                      | 2    | 1                      | 2    |
| 10                 | 0.01                         | 0.00  | 95.10                    | 86.47  | 1.01             | 1.01 | 1.01                   | 1.01 | 1.01                   | 1.01 |
| 20                 | 0.02                         | 0.01  | 93.18                    | 87.42  | 1.00             | 1.00 | 1.00                   | 1.01 | 1.01                   | 1.01 |
| 30                 | 0.03                         | 0.01  | 95.85                    | 86.46  | 1.00             | 1.01 | 1.00                   | 1.00 | 1.00                   | 1.01 |
| 40                 | 0.03                         | 0.02  | 89.59                    | 86.17  | 1.01             | 1.01 | 1.00                   | 1.01 | 1.01                   | 1.01 |
| 50                 | 0.00                         | 0.01  | 88.52                    | 86.87  | 1.01             | 1.01 | 1.00                   | 1.01 | 1.01                   | 1.01 |
| 60                 | 0.01                         | 0.02  | 86.67                    | 93.60  | 1.01             | 1.01 | 1.00                   | 1.01 | 1.01                   | 1.01 |
| 70                 | 0.00                         | 0.02  | 86.13                    | 105.32 | 1.01             | 1.01 | 1.00                   | 1.01 | 1.01                   | 1.01 |
| 80                 | 0.00                         | 0.02  | 91.81                    | 91.77  | 1.01             | 1.01 | 1.00                   | 1.01 | 1.01                   | 1.01 |
| 90                 | 0.01                         | 0.02  | 91.66                    | 86.50  | 1.01             | 1.01 | 1.01                   | 1.01 | 1.01                   | 1.00 |
| 100                | 0.00                         | 0.01  | 85.19                    | 93.82  | 1.01             | 1.01 | 1.01                   | 1.01 | 1.01                   | 1.00 |
| 200                | 0.00                         | 0.02  | 92.10                    | 102.85 | 1.01             | 1.01 | 1.01                   | 1.01 | 1.00                   | 1.01 |
| 300                | 0.00                         | 0.03  | 100.28                   | 102.69 | 1.01             | 1.01 | 1.02                   | 1.01 | 1.01                   | 1.02 |
| 400                | 0.01                         | 0.03  | 95.76                    | 94.49  | 1.01             | 1.01 | 1.02                   | 1.02 | 1.02                   | 1.02 |
| 500                | 0.01                         | 0.03  | 109.12                   | 116.46 | 1.02             | 1.02 | 1.02                   | 1.02 | 1.01                   | 1.02 |
| 600                | 0.01                         | 0.03  | 100.90                   | 108.20 | 1.01             | 1.01 | 1.01                   | 1.01 | 1.01                   | 1.02 |
| 700                | 0.02                         | 0.03  | 116.31                   | 121.52 | 1.01             | 1.01 | 1.02                   | 1.01 | 1.01                   | 1.02 |
| 800                | 0.02                         | 0.04  | 110.03                   | 97.18  | 1.01             | 1.01 | 1.02                   | 1.02 | 1.01                   | 1.02 |
| 900                | 0.02                         | 0.03  | 108.98                   | 103.99 | 1.01             | 1.01 | 1.03                   | 1.02 | 1.02                   | 1.03 |
| 1000               | 0.02                         | 0.04  | 106.35                   | 121.29 | 1.01             | 1.01 | 1.03                   | 1.02 | 1.02                   | 1.03 |
| 1200               | 0.02                         | 0.04  | 103.47                   | 102.22 | 1.02             | 1.01 | 1.03                   | 1.01 | 1.01                   | 1.03 |
| 1400               | 0.02                         | 0.04  | 101.98                   | 104.06 | 1.02             | 1.01 | 1.04                   | 1.02 | 1.01                   | 1.04 |
| 1600               | 0.03                         | 0.05  | 96.41                    | 101.06 | 1.02             | 1.01 | 1.04                   | 1.02 | 1.01                   | 1.04 |
| 1800               | 0.02                         | 0.05  | 100.83                   | 112.65 | 1.02             | 1.02 | 1.04                   | 1.03 | 1.02                   | 1.04 |
| 2000               | 0.03                         | 0.05  | 101.45                   | 99.34  | 1.03             | 1.01 | 1.05                   | 1.03 | 1.02                   | 1.04 |
| 2200               | 0.03                         | 0.06  | 113.29                   | 102.68 | 1.03             | 1.02 | 1.05                   | 1.02 | 1.02                   | 1.05 |
| 2400               | 0.04                         | 0.06  | 104.81                   | 92.73  | 1.03             | 1.02 | 1.06                   | 1.03 | 1.03                   | 1.05 |
| 2600               | 0.04                         | 0.06  | 99.62                    | 100.57 | 1.03             | 1.03 | 1.07                   | 1.05 | 1.04                   | 1.06 |
| 2800               | 0.04                         | 0.06  | 110.09                   | 106.20 | 1.04             | 1.03 | 1.08                   | 1.04 | 1.04                   | 1.07 |
| 3000               | 0.04                         | 0.06  | 103.39                   | 104.23 | 1.05             | 1.04 | 1.09                   | 1.04 | 1.04                   | 1.07 |
| 3200               | 0.05                         | 0.07  | 102.59                   | 111.71 | 1.05             | 1.05 | 1.09                   | 1.06 | 1.06                   | 1.08 |
| 3400               | 0.06                         | 0.07  | 101.92                   | 107.63 | 1.06             | 1.07 | 1.11                   | 1.08 | 1.08                   | 1.09 |
| 3600               | 0.06                         | 0.07  | 111.01                   | 99.24  | 1.08             | 1.08 | 1.11                   | 1.07 | 1.08                   | 1.10 |
| 4000               | 0.06                         | 0.08  | 101.05                   | 98.32  | 1.11             | 1.11 | 1.13                   | 1.11 | 1.12                   | 1.11 |
| 4500               | 0.07                         | 0.09  | 94.42                    | 113.13 | 1.15             | 1.15 | 1.14                   | 1.12 | 1.14                   | 1.12 |
| 5000               | 0.09                         | 0.11  | 97.06                    | 96.49  | 1.16             | 1.20 | 1.15                   | 1.19 | 1.21                   | 1.14 |
| 5500               | 0.11                         | 0.13  | 98.76                    | 93.61  | 1.22             | 1.23 | 1.14                   | 1.19 | 1.21                   | 1.12 |
| 6000               | 0.12                         | 0.13  | 95.96                    | 98.43  | 1.18             | 1.22 | 1.13                   | 1.22 | 1.24                   | 1.13 |
| 6500               | 0.11                         | 0.13  | 99.65                    | 103.35 | 1.18             | 1.22 | 1.11                   | 1.21 | 1.22                   | 1.11 |
| 7000               | 0.11                         | 0.12  | 95.79                    | 96.78  | 1.17             | 1.19 | 1.09                   | 1.17 | 1.18                   | 1.09 |
| 7500               | 0.11                         | 0.12  | 97.32                    | 95.44  | 1.11             | 1.15 | 1.08                   | 1.15 | 1.15                   | 1.08 |
| 8000               | 0.10                         | 0.12  | 95.12                    | 97.93  | 1.13             | 1.12 | 1.07                   | 1.13 | 1.12                   | 1.08 |
| 8500               | 0.12                         | 0.13  | 97.74                    | 94.74  | 1.09             | 1.11 | 1.09                   | 1.12 | 1.11                   | 1.09 |
| 9000               | 0.13                         | 0.14  | 93.42                    | 98.17  | 1.07             | 1.07 | 1.08                   | 1.05 | 1.06                   | 1.09 |
| 9500               | 0.13                         | 0.14  | 93.39                    | 92.86  | 1.07             | 1.06 | 1.09                   | 1.07 | 1.06                   | 1.10 |
| 10000              | 0.14                         | 0.15  | 91.41                    | 91.96  | 1.04             | 1.07 | 1.10                   | 1.06 | 1.07                   | 1.12 |
| 12000              | 0.21                         | 0.20  | 88.35                    | 87.13  | 1.14             | 1.13 | 1.14                   | 1.08 | 1.15                   | 1.11 |
| 13000              | 0.23                         | 0.25  | 88.31                    | 86.97  | 1.17             | 1.16 | 1.23                   | 1.09 | 1.15                   | 1.18 |
| 14000              | 0.25                         | 0.28  | 86.34                    | 84.87  | 1.11             | 1.14 | 1.30                   | 1.11 | 1.17                   | 1.26 |
| 15000              | 0.31                         | 0.34  | 84.64                    | 82.50  | 1.14             | 1.25 | 1.33                   | 1.22 | 1.25                   | 1.31 |
| 16000              | 0.38                         | 0.35  | 82.89                    | 80.79  | 1.09             | 1.20 | 1.26                   | 1.20 | 1.21                   | 1.27 |
| 17000              | 0.34                         | 0.31  | 81.15                    | 79.04  | 1.08             | 1.03 | 1.18                   | 1.07 | 1.05                   | 1.15 |
| 18000              | 0.37                         | 0.36  | 77.96                    | 76.83  | 1.05             | 1.17 | 1.29                   | 1.19 | 1.17                   | 1.17 |

#### Notes

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 RC-3SPDT-A18  
 140205  
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# Xtra Long Life USB/Ethernet RF SPDT

## RC-3SPDT-A18

### Typical Performance Data

TEST CONDITIONS: @Temperature = +25degC

| FREQUENCY<br>(MHz) | INSERTION LOSS<br>ON<br>(dB) |       | ISOLATION<br>OFF<br>(dB) |        | VSWR COM<br>(:1) |      | VSWR<br>COM->2<br>(:1) |      | VSWR<br>COM->1<br>(:1) |      |
|--------------------|------------------------------|-------|--------------------------|--------|------------------|------|------------------------|------|------------------------|------|
|                    | COM-1                        | COM-2 | COM-1                    | COM-2  | ON               | OFF  | 1                      | 2    | 1                      | 2    |
| 10                 | 0.00                         | 0.00  | 90.36                    | 94.64  | 1.00             | 1.00 | 1.01                   | 1.00 | 1.00                   | 1.01 |
| 20                 | 0.01                         | 0.00  | 98.54                    | 99.26  | 1.00             | 1.00 | 1.01                   | 1.00 | 1.00                   | 1.02 |
| 30                 | 0.02                         | 0.01  | 92.63                    | 93.61  | 1.00             | 1.00 | 1.01                   | 1.00 | 1.00                   | 1.02 |
| 40                 | 0.02                         | 0.01  | 91.53                    | 89.28  | 1.01             | 1.00 | 1.01                   | 1.01 | 1.01                   | 1.02 |
| 50                 | 0.00                         | 0.01  | 92.68                    | 90.91  | 1.00             | 1.00 | 1.01                   | 1.00 | 1.00                   | 1.02 |
| 60                 | 0.00                         | 0.01  | 93.39                    | 85.29  | 1.00             | 1.00 | 1.01                   | 1.00 | 1.00                   | 1.02 |
| 70                 | 0.00                         | 0.00  | 92.76                    | 93.80  | 1.00             | 1.00 | 1.01                   | 1.00 | 1.00                   | 1.02 |
| 80                 | 0.00                         | 0.00  | 88.29                    | 88.92  | 1.00             | 1.00 | 1.01                   | 1.00 | 1.00                   | 1.02 |
| 90                 | 0.00                         | 0.00  | 93.15                    | 87.04  | 1.00             | 1.00 | 1.01                   | 1.00 | 1.00                   | 1.02 |
| 100                | 0.00                         | 0.00  | 86.76                    | 87.01  | 1.00             | 1.00 | 1.01                   | 1.00 | 1.00                   | 1.02 |
| 200                | 0.00                         | 0.00  | 91.33                    | 91.49  | 1.00             | 1.00 | 1.01                   | 1.00 | 1.00                   | 1.02 |
| 300                | 0.01                         | 0.01  | 99.07                    | 99.76  | 1.00             | 1.00 | 1.01                   | 1.01 | 1.00                   | 1.02 |
| 400                | 0.01                         | 0.01  | 97.42                    | 100.56 | 1.00             | 1.01 | 1.01                   | 1.00 | 1.00                   | 1.02 |
| 500                | 0.02                         | 0.01  | 94.63                    | 99.35  | 1.00             | 1.01 | 1.02                   | 1.01 | 1.01                   | 1.02 |
| 600                | 0.02                         | 0.02  | 107.87                   | 104.16 | 1.01             | 1.00 | 1.02                   | 1.01 | 1.01                   | 1.02 |
| 700                | 0.02                         | 0.02  | 106.79                   | 101.52 | 1.01             | 1.01 | 1.02                   | 1.01 | 1.01                   | 1.02 |
| 800                | 0.03                         | 0.02  | 98.96                    | 107.07 | 1.01             | 1.01 | 1.02                   | 1.01 | 1.01                   | 1.02 |
| 900                | 0.03                         | 0.02  | 98.57                    | 102.17 | 1.00             | 1.01 | 1.02                   | 1.01 | 1.01                   | 1.03 |
| 1000               | 0.03                         | 0.03  | 103.84                   | 105.08 | 1.00             | 1.01 | 1.02                   | 1.01 | 1.01                   | 1.03 |
| 1200               | 0.03                         | 0.03  | 104.39                   | 103.71 | 1.00             | 1.01 | 1.03                   | 1.01 | 1.01                   | 1.03 |
| 1400               | 0.04                         | 0.04  | 108.43                   | 103.24 | 1.00             | 1.01 | 1.03                   | 1.01 | 1.01                   | 1.03 |
| 1600               | 0.04                         | 0.04  | 104.33                   | 104.07 | 1.00             | 1.01 | 1.03                   | 1.01 | 1.01                   | 1.04 |
| 1800               | 0.04                         | 0.04  | 101.50                   | 106.50 | 1.01             | 1.01 | 1.04                   | 1.02 | 1.02                   | 1.04 |
| 2000               | 0.05                         | 0.05  | 106.33                   | 98.89  | 1.01             | 1.02 | 1.05                   | 1.02 | 1.02                   | 1.05 |
| 2200               | 0.05                         | 0.05  | 104.38                   | 105.50 | 1.02             | 1.02 | 1.05                   | 1.02 | 1.02                   | 1.05 |
| 2400               | 0.05                         | 0.05  | 100.20                   | 105.22 | 1.02             | 1.02 | 1.06                   | 1.02 | 1.02                   | 1.05 |
| 2600               | 0.05                         | 0.06  | 101.22                   | 96.49  | 1.03             | 1.03 | 1.06                   | 1.03 | 1.03                   | 1.06 |
| 2800               | 0.06                         | 0.06  | 100.66                   | 100.52 | 1.04             | 1.04 | 1.07                   | 1.04 | 1.04                   | 1.07 |
| 3000               | 0.06                         | 0.06  | 113.93                   | 100.28 | 1.04             | 1.04 | 1.08                   | 1.04 | 1.03                   | 1.08 |
| 3200               | 0.06                         | 0.06  | 103.51                   | 114.85 | 1.05             | 1.05 | 1.08                   | 1.05 | 1.05                   | 1.08 |
| 3400               | 0.07                         | 0.07  | 103.07                   | 98.24  | 1.07             | 1.07 | 1.09                   | 1.07 | 1.06                   | 1.09 |
| 3600               | 0.07                         | 0.07  | 106.49                   | 99.98  | 1.09             | 1.08 | 1.10                   | 1.08 | 1.07                   | 1.10 |
| 4000               | 0.08                         | 0.08  | 105.17                   | 106.44 | 1.11             | 1.10 | 1.11                   | 1.12 | 1.10                   | 1.11 |
| 4500               | 0.10                         | 0.10  | 108.28                   | 99.81  | 1.16             | 1.14 | 1.13                   | 1.16 | 1.15                   | 1.14 |
| 5000               | 0.11                         | 0.12  | 106.56                   | 100.37 | 1.19             | 1.17 | 1.13                   | 1.19 | 1.17                   | 1.14 |
| 5500               | 0.12                         | 0.13  | 103.62                   | 101.94 | 1.22             | 1.19 | 1.13                   | 1.21 | 1.20                   | 1.15 |
| 6000               | 0.13                         | 0.13  | 94.74                    | 97.50  | 1.22             | 1.20 | 1.12                   | 1.21 | 1.21                   | 1.14 |
| 6500               | 0.13                         | 0.13  | 108.06                   | 98.99  | 1.20             | 1.20 | 1.11                   | 1.19 | 1.20                   | 1.13 |
| 7000               | 0.13                         | 0.13  | 94.28                    | 101.12 | 1.18             | 1.19 | 1.09                   | 1.17 | 1.18                   | 1.12 |
| 7500               | 0.13                         | 0.13  | 93.30                    | 93.47  | 1.15             | 1.17 | 1.08                   | 1.13 | 1.17                   | 1.09 |
| 8000               | 0.13                         | 0.13  | 91.10                    | 95.74  | 1.13             | 1.15 | 1.08                   | 1.12 | 1.16                   | 1.09 |
| 8500               | 0.14                         | 0.13  | 95.53                    | 97.82  | 1.09             | 1.12 | 1.07                   | 1.09 | 1.13                   | 1.06 |
| 9000               | 0.13                         | 0.13  | 90.68                    | 93.46  | 1.08             | 1.09 | 1.08                   | 1.08 | 1.10                   | 1.06 |
| 9500               | 0.13                         | 0.13  | 93.52                    | 92.28  | 1.05             | 1.06 | 1.09                   | 1.05 | 1.06                   | 1.05 |
| 10000              | 0.13                         | 0.13  | 92.92                    | 90.47  | 1.06             | 1.05 | 1.10                   | 1.06 | 1.06                   | 1.06 |
| 12000              | 0.16                         | 0.17  | 88.79                    | 88.10  | 1.14             | 1.10 | 1.10                   | 1.13 | 1.10                   | 1.13 |
| 13000              | 0.19                         | 0.20  | 88.25                    | 88.91  | 1.14             | 1.13 | 1.16                   | 1.16 | 1.13                   | 1.18 |
| 14000              | 0.20                         | 0.20  | 85.64                    | 84.94  | 1.12             | 1.13 | 1.22                   | 1.13 | 1.13                   | 1.21 |
| 15000              | 0.22                         | 0.21  | 82.28                    | 81.89  | 1.13             | 1.13 | 1.25                   | 1.11 | 1.13                   | 1.21 |
| 16000              | 0.22                         | 0.23  | 80.93                    | 80.37  | 1.14             | 1.11 | 1.24                   | 1.13 | 1.11                   | 1.22 |
| 17000              | 0.21                         | 0.23  | 80.58                    | 80.28  | 1.12             | 1.06 | 1.23                   | 1.15 | 1.11                   | 1.25 |
| 18000              | 0.21                         | 0.26  | 78.87                    | 78.31  | 1.14             | 1.07 | 1.29                   | 1.21 | 1.07                   | 1.29 |

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# Xtra Long Life USB/Ethernet RF SPDT

## RC-3SPDT-A18

### Typical Performance Data

TEST CONDITIONS: @Temperature = +45degC

| FREQUENCY<br>(MHz) | INSERTION LOSS<br>ON<br>(dB) |       | ISOLATION<br>OFF<br>(dB) |        | VSWR COM<br>(:1) |      | VSWR<br>COM->2<br>(:1) |      | VSWR<br>COM->1<br>(:1) |      |
|--------------------|------------------------------|-------|--------------------------|--------|------------------|------|------------------------|------|------------------------|------|
|                    | COM-1                        | COM-2 | COM-1                    | COM-2  | ON               | OFF  | 1                      | 2    | 1                      | 2    |
| 10                 | 0.03                         | 0.01  | 92.00                    | 96.48  | 1.01             | 1.00 | 1.00                   | 1.01 | 1.01                   | 1.01 |
| 20                 | 0.01                         | 0.01  | 93.10                    | 85.54  | 1.00             | 1.00 | 1.00                   | 1.00 | 1.00                   | 1.01 |
| 30                 | 0.02                         | 0.02  | 87.10                    | 86.10  | 1.00             | 1.00 | 1.00                   | 1.00 | 1.00                   | 1.01 |
| 40                 | 0.02                         | 0.02  | 87.44                    | 87.32  | 1.00             | 1.00 | 1.00                   | 1.00 | 1.00                   | 1.01 |
| 50                 | 0.01                         | 0.01  | 85.52                    | 89.13  | 1.00             | 1.00 | 1.00                   | 1.00 | 1.00                   | 1.01 |
| 60                 | 0.00                         | 0.01  | 90.49                    | 86.10  | 1.00             | 1.00 | 1.00                   | 1.00 | 1.00                   | 1.01 |
| 70                 | 0.01                         | 0.01  | 90.31                    | 94.05  | 1.00             | 1.01 | 1.00                   | 1.01 | 1.01                   | 1.01 |
| 80                 | 0.01                         | 0.01  | 93.43                    | 86.17  | 1.01             | 1.01 | 1.00                   | 1.01 | 1.01                   | 1.01 |
| 90                 | 0.01                         | 0.01  | 94.17                    | 86.73  | 1.01             | 1.01 | 1.01                   | 1.01 | 1.01                   | 1.01 |
| 100                | 0.01                         | 0.01  | 91.90                    | 89.83  | 1.01             | 1.01 | 1.01                   | 1.01 | 1.01                   | 1.01 |
| 200                | 0.01                         | 0.01  | 98.26                    | 103.68 | 1.00             | 1.00 | 1.01                   | 1.01 | 1.00                   | 1.01 |
| 300                | 0.01                         | 0.02  | 116.76                   | 95.71  | 1.01             | 1.01 | 1.00                   | 1.00 | 1.01                   | 1.01 |
| 400                | 0.02                         | 0.03  | 99.93                    | 105.84 | 1.01             | 1.01 | 1.00                   | 1.01 | 1.01                   | 1.01 |
| 500                | 0.02                         | 0.03  | 106.09                   | 102.44 | 1.01             | 1.01 | 1.01                   | 1.01 | 1.01                   | 1.01 |
| 600                | 0.03                         | 0.03  | 112.09                   | 103.42 | 1.01             | 1.01 | 1.01                   | 1.01 | 1.01                   | 1.01 |
| 700                | 0.03                         | 0.03  | 109.00                   | 104.63 | 1.01             | 1.01 | 1.01                   | 1.01 | 1.01                   | 1.01 |
| 800                | 0.03                         | 0.04  | 108.70                   | 102.11 | 1.01             | 1.01 | 1.01                   | 1.01 | 1.01                   | 1.01 |
| 900                | 0.03                         | 0.04  | 100.99                   | 97.92  | 1.01             | 1.01 | 1.01                   | 1.01 | 1.01                   | 1.02 |
| 1000               | 0.04                         | 0.04  | 100.51                   | 103.60 | 1.01             | 1.01 | 1.02                   | 1.01 | 1.01                   | 1.02 |
| 1200               | 0.04                         | 0.04  | 106.98                   | 101.11 | 1.01             | 1.01 | 1.02                   | 1.00 | 1.01                   | 1.02 |
| 1400               | 0.05                         | 0.05  | 102.33                   | 112.25 | 1.01             | 1.01 | 1.03                   | 1.00 | 1.01                   | 1.03 |
| 1600               | 0.05                         | 0.05  | 105.28                   | 100.38 | 1.01             | 1.00 | 1.04                   | 1.01 | 1.01                   | 1.03 |
| 1800               | 0.05                         | 0.05  | 98.73                    | 107.35 | 1.01             | 1.01 | 1.04                   | 1.01 | 1.01                   | 1.04 |
| 2000               | 0.06                         | 0.06  | 115.46                   | 117.46 | 1.02             | 1.01 | 1.05                   | 1.02 | 1.01                   | 1.04 |
| 2200               | 0.06                         | 0.06  | 103.28                   | 108.02 | 1.03             | 1.01 | 1.06                   | 1.01 | 1.01                   | 1.05 |
| 2400               | 0.07                         | 0.07  | 101.81                   | 102.85 | 1.03             | 1.03 | 1.06                   | 1.03 | 1.03                   | 1.06 |
| 2600               | 0.07                         | 0.07  | 103.07                   | 96.44  | 1.03             | 1.04 | 1.07                   | 1.04 | 1.04                   | 1.06 |
| 2800               | 0.07                         | 0.07  | 105.69                   | 102.56 | 1.04             | 1.03 | 1.08                   | 1.04 | 1.04                   | 1.07 |
| 3000               | 0.07                         | 0.08  | 98.32                    | 99.97  | 1.05             | 1.04 | 1.09                   | 1.04 | 1.05                   | 1.08 |
| 3200               | 0.08                         | 0.08  | 93.90                    | 99.83  | 1.06             | 1.07 | 1.09                   | 1.06 | 1.07                   | 1.08 |
| 3400               | 0.09                         | 0.09  | 109.17                   | 105.95 | 1.07             | 1.09 | 1.11                   | 1.08 | 1.09                   | 1.09 |
| 3600               | 0.09                         | 0.09  | 95.19                    | 113.30 | 1.09             | 1.08 | 1.11                   | 1.07 | 1.09                   | 1.09 |
| 4000               | 0.10                         | 0.10  | 99.68                    | 98.18  | 1.12             | 1.13 | 1.12                   | 1.11 | 1.14                   | 1.11 |
| 4500               | 0.11                         | 0.11  | 101.53                   | 99.11  | 1.15             | 1.14 | 1.12                   | 1.12 | 1.15                   | 1.11 |
| 5000               | 0.14                         | 0.13  | 99.42                    | 101.94 | 1.16             | 1.20 | 1.14                   | 1.17 | 1.20                   | 1.13 |
| 5500               | 0.14                         | 0.14  | 100.62                   | 95.58  | 1.20             | 1.19 | 1.13                   | 1.16 | 1.20                   | 1.12 |
| 6000               | 0.15                         | 0.15  | 94.60                    | 100.65 | 1.18             | 1.20 | 1.13                   | 1.18 | 1.20                   | 1.13 |
| 6500               | 0.15                         | 0.15  | 98.83                    | 97.47  | 1.15             | 1.18 | 1.11                   | 1.17 | 1.18                   | 1.12 |
| 7000               | 0.15                         | 0.15  | 96.84                    | 95.86  | 1.16             | 1.14 | 1.10                   | 1.15 | 1.15                   | 1.11 |
| 7500               | 0.16                         | 0.16  | 99.59                    | 95.52  | 1.10             | 1.15 | 1.08                   | 1.14 | 1.14                   | 1.10 |
| 8000               | 0.15                         | 0.16  | 100.42                   | 100.22 | 1.12             | 1.09 | 1.07                   | 1.11 | 1.10                   | 1.08 |
| 8500               | 0.17                         | 0.17  | 95.86                    | 97.28  | 1.08             | 1.10 | 1.08                   | 1.11 | 1.09                   | 1.09 |
| 9000               | 0.17                         | 0.18  | 99.29                    | 91.93  | 1.06             | 1.10 | 1.07                   | 1.07 | 1.07                   | 1.08 |
| 9500               | 0.17                         | 0.18  | 92.32                    | 94.80  | 1.08             | 1.04 | 1.06                   | 1.03 | 1.04                   | 1.08 |
| 10000              | 0.18                         | 0.19  | 100.99                   | 93.19  | 1.03             | 1.10 | 1.07                   | 1.06 | 1.08                   | 1.09 |
| 12000              | 0.23                         | 0.25  | 88.28                    | 90.17  | 1.19             | 1.18 | 1.18                   | 1.15 | 1.19                   | 1.15 |
| 13000              | 0.26                         | 0.28  | 89.01                    | 88.66  | 1.23             | 1.23 | 1.26                   | 1.18 | 1.23                   | 1.21 |
| 14000              | 0.26                         | 0.28  | 86.21                    | 87.49  | 1.12             | 1.18 | 1.29                   | 1.15 | 1.16                   | 1.25 |
| 15000              | 0.26                         | 0.28  | 84.10                    | 86.03  | 1.01             | 1.11 | 1.25                   | 1.10 | 1.09                   | 1.23 |
| 16000              | 0.28                         | 0.32  | 81.63                    | 84.68  | 1.04             | 1.08 | 1.21                   | 1.08 | 1.08                   | 1.18 |
| 17000              | 0.27                         | 0.32  | 80.37                    | 84.83  | 1.05             | 1.07 | 1.30                   | 1.11 | 1.11                   | 1.20 |
| 18000              | 0.30                         | 0.35  | 79.19                    | 82.41  | 1.24             | 1.14 | 1.37                   | 1.15 | 1.18                   | 1.22 |

#### Notes

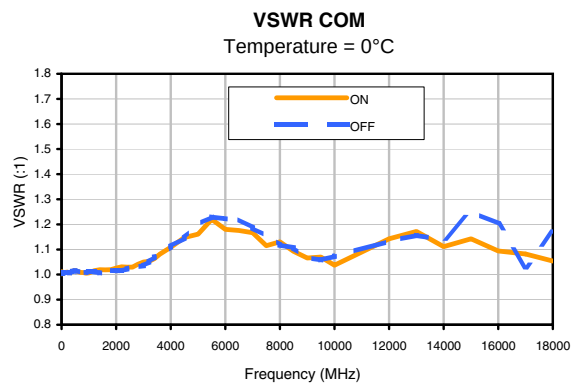
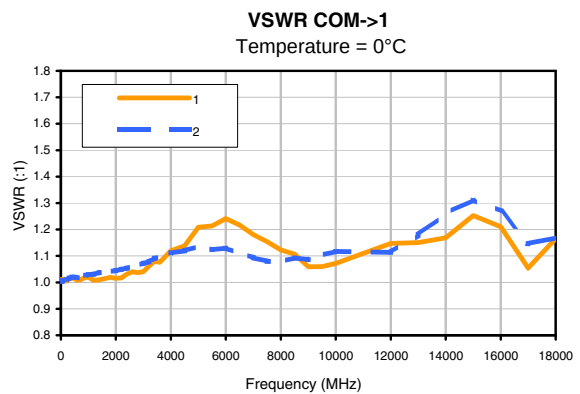
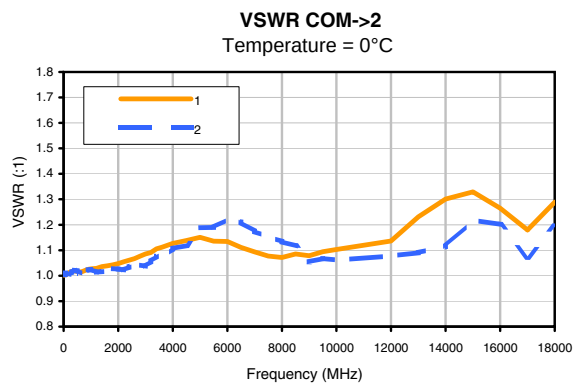
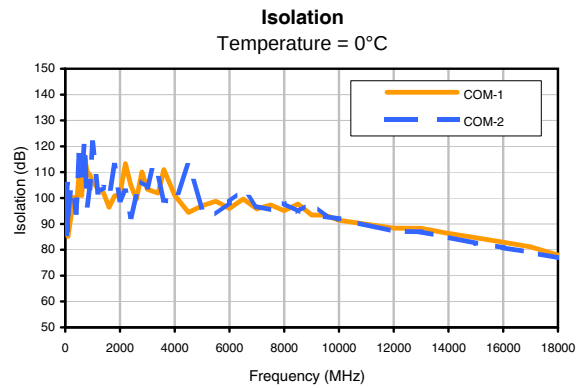
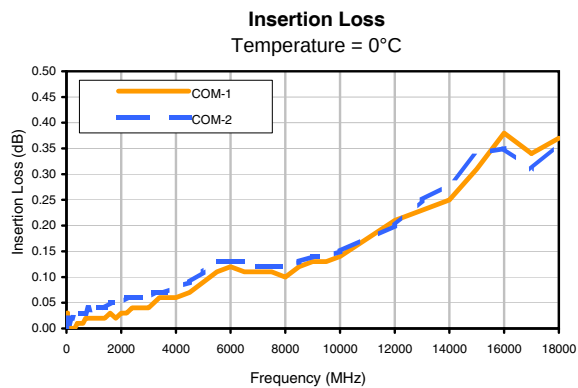
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# Xtra Long Life USB/Ethernet RF SPDT Switch

RC-3SPDT-A18

## Typical Performance Curves



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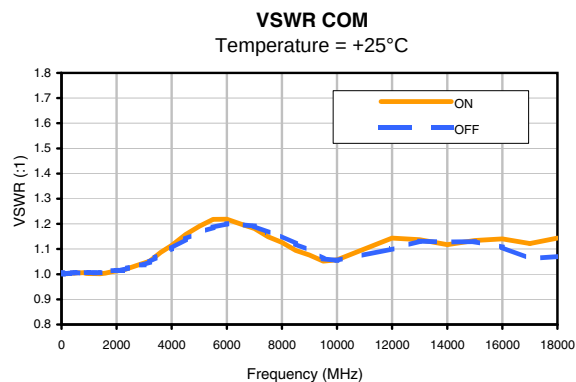
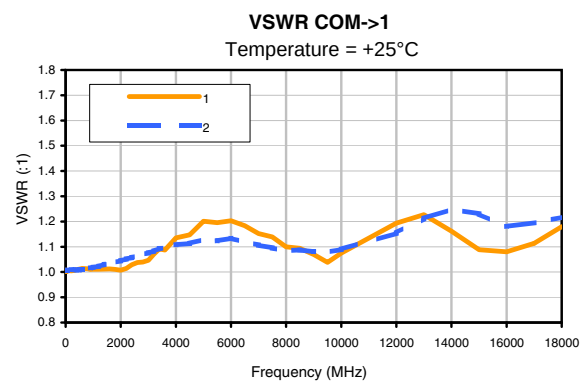
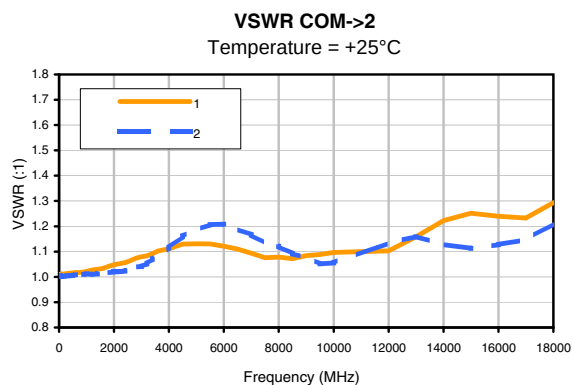
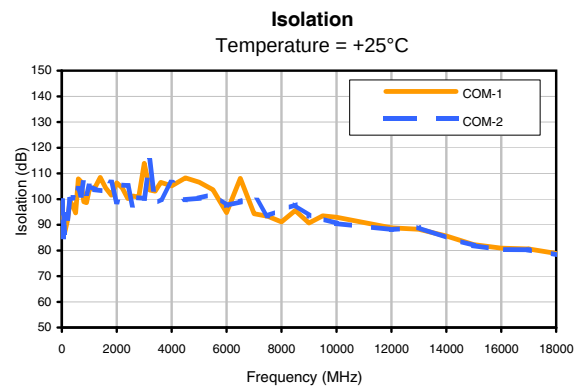
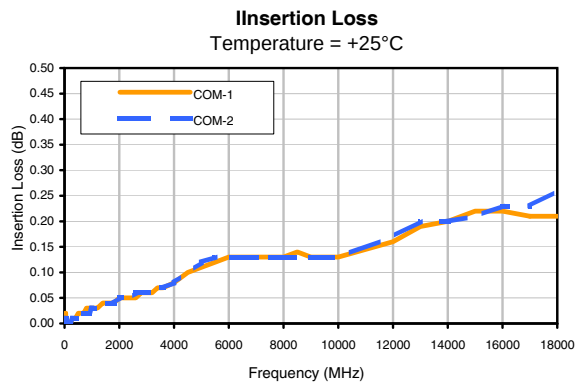




# Xtra Long Life USB/Ethernet RF SPDT Switch

**RC-3SPDT-A18**

## Typical Performance Curves



### Notes

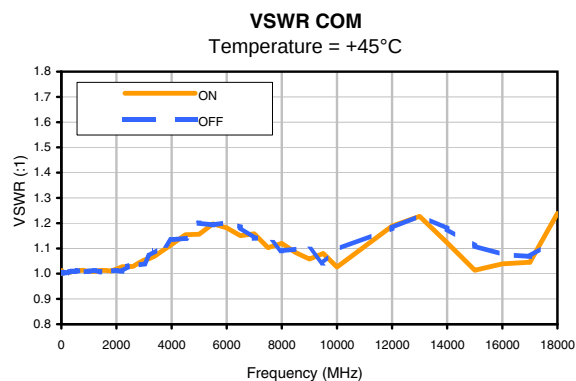
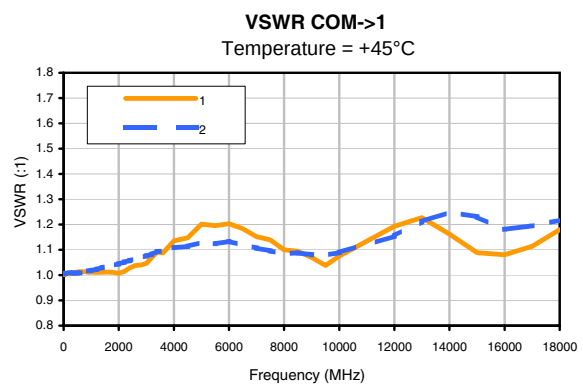
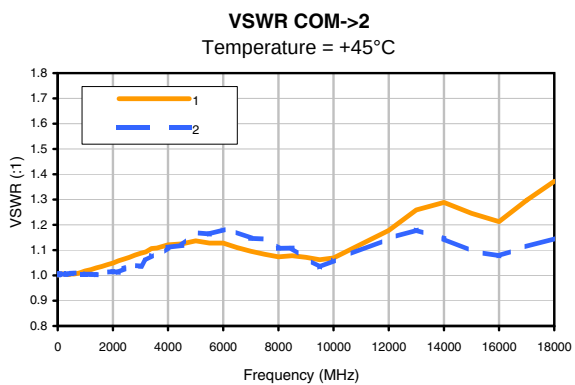
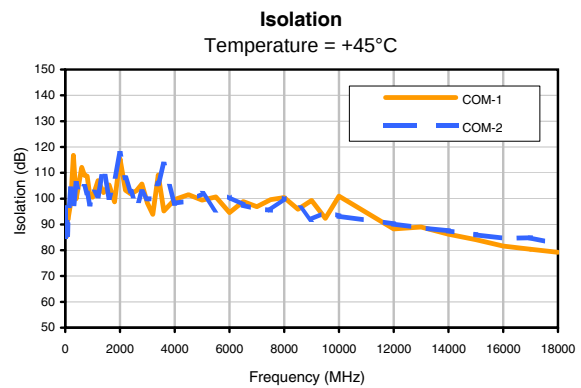
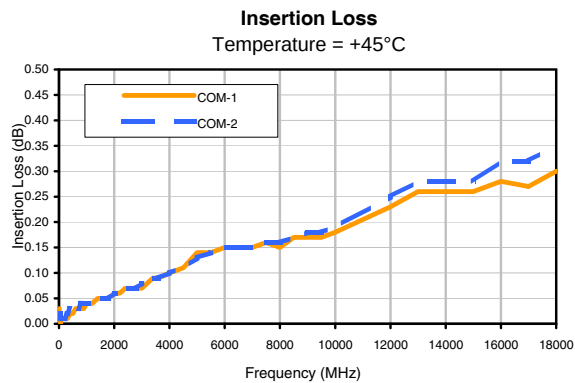
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# Xtra Long Life USB/Ethernet RF SPDT Switch

**RC-3SPDT-A18**

## Typical Performance Curves

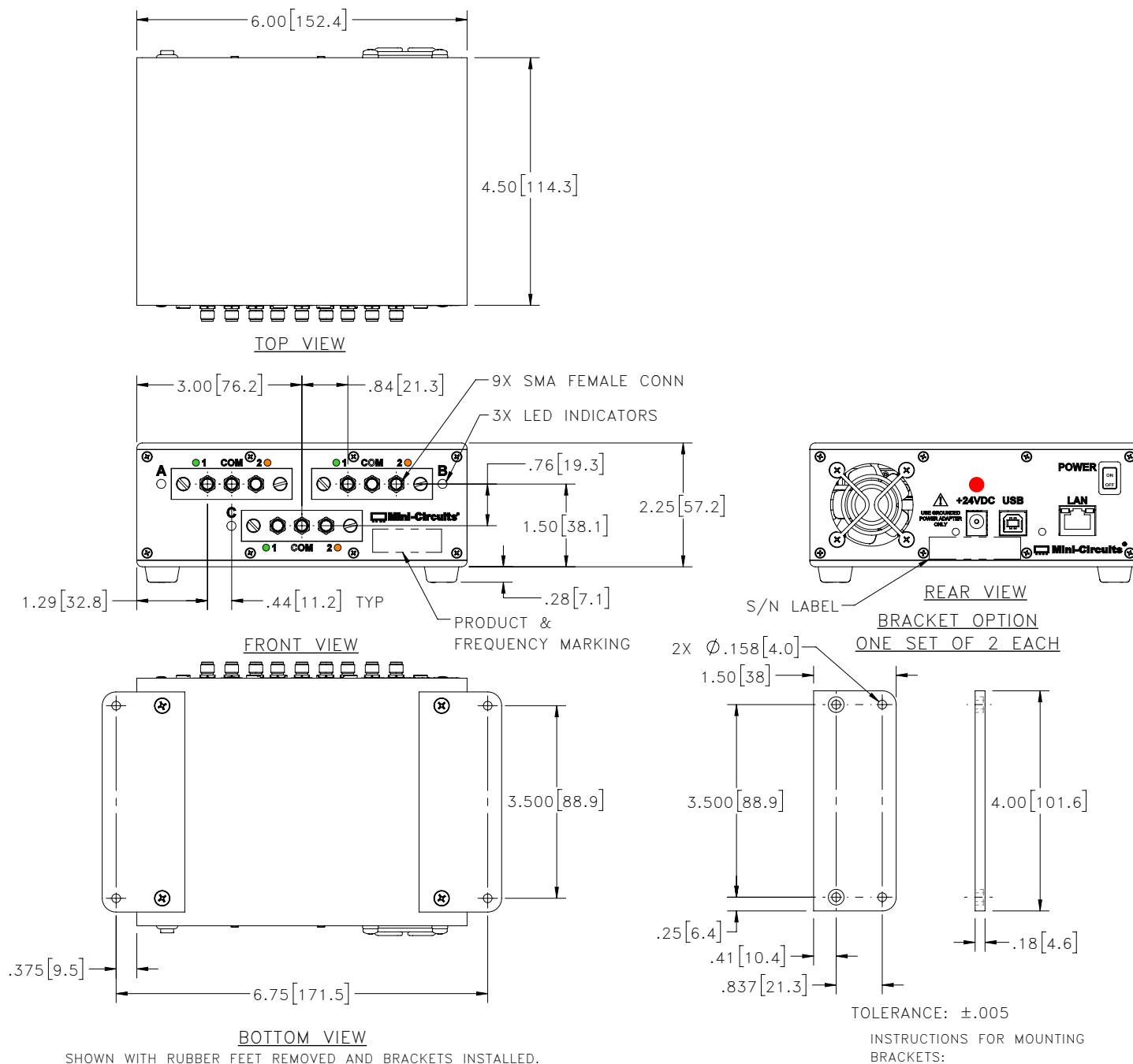


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## Outline Dimensions

LM1850



### Notes:

1. Case material: Aluminum (with protective coating to prevent corrosion).
2. Dimensions are in inches [mm]. Tolerances: 2 Pl.  $\pm .03$  inch; 3 Pl.  $\pm .015$  inch.
3. Weight: 1050 grams.
4. Marking may contain other features or characters for internal lot control.

TOLERANCE:  $\pm .005$

INSTRUCTIONS FOR MOUNTING  
BRACKETS:  
TOOL REQUIRED: PHILLIPS HEAD  
SCREWDRIVER

STEP 1: REMOVE RUBBER FEET  
FROM THE BOTTOM OF THE UNIT,  
DO NOT DISCARD THE FASTENERS.  
STEP 2: MOUNT THE BRACKETS WITH THE  
FASTENERS REMOVED IN STEP 1,  
USING THE COUNTER BORE HOLES  
IN THE BRACKET.

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RF/IF MICROWAVE COMPONENTS



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

| Specification                  | Test/Inspection Condition           | Reference/Spec              |
|--------------------------------|-------------------------------------|-----------------------------|
| Operating Temperature          | 0° to 40° C<br>Ambient Environment  | Individual Model Data Sheet |
| Storage Temperature            | -15° to 85°C<br>Ambient Environment | Individual Model Data Sheet |
| Operating and Storage Humidity | 5% to 85% RH (non-condensing)       | Ambient                     |
| Bench Handling Test            | Bench Top Tip 45° & Drop            | MIL-PRF-28800F              |
| Transit Drop Test              | Free Fall Drop, 20 cm (7.9 inches)  | MIL-PRF-28800F class 3      |