

USB & ETHERNET CONTROL

Mechanical Switch Assemblies

RCM Series

THE BIG DEAL

- High reliability mechanical switches - millions of cycles
- Frequency options up to 50 GHz
- SPDT to SP12T switch types
- High isolation and low insertion loss
- Compact & rugged package with included power supply
- Software control & automation
- LED switch state indicators on front panel
- SMA / N-type / 2.92 mm / 2.4 mm connectors
- Modular design supports easy field-maintenance



PRODUCT OVERVIEW

Mini-Circuits' RCM series switch assemblies offer a flexible set of high-performance mechanical switch configurations in a compact package, with easy software automation and control - ideal for use on the lab bench or integration into larger automated test systems.

All RF connectors are accessible on the front panel, with LED indicators for a convenient visual display of all switch states. The switch assembly can be controlled via USB or Ethernet (supporting HTTP and Telnet network protocols). Full software support is provided, including a user-friendly GUI application for Windows and a full API with programming instructions for Windows and Linux environments.

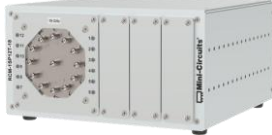
The modular design supports easy maintenance in the field without the need to return to a Mini-Circuits facility. Custom switch configurations are available on request – please contact us to discuss your requirements.

testsolutions@minicircuits.com | www.minicircuits.com

STANDARD CONFIGURATIONS

These standard configurations are available with short lead-times and published to our website with full switch performance data:

<https://www.minicircuits.com/WebStore/rcm.html>

Model Name	Switches	Frequency	Terminations	Configuration	Connectors	
RCM-3SPDT-75F	SPDT x 3	DC-2.15 GHz (75Ω)	Absorptive	Fail-safe	F-type	
RCM-3SP4T-18	SP4T x 3	DC-18 GHz	Absorptive	Normally open	SMA	
RCM-1SP8T-12	SP8T x 1	DC-12 GHz	Absorptive	Normally open	SMA	
RCM-2SP8T-12	SP8T x 2	DC-12 GHz	Absorptive	Normally open	SMA	
RCM-1SP8T-26	SP8T x 1	DC-26.5 GHz	Absorptive	Normally open	SMA	
RCM-2SP8T-26	SP8T x 2	DC-26.5 GHz	Absorptive	Normally open	SMA	
RCM-1SP8T-40	SP8T x 1	DC-40 GHz	Absorptive	Normally open	2.92 mm	
RCM-2SP8T-40	SP8T x 2	DC-40 GHz	Absorptive	Normally open	2.92 mm	
RCM-1SP12T-18	SP12T x 1	DC-18 GHz	Absorptive	Normally open	SMA	
RCM-2SP12T-18	SP12T x 2	DC-18 GHz	Absorptive	Normally open	SMA	

CUSTOM CONFIGURATIONS

Mini-Circuits can custom configure RCM series switch assemblies to meet your requirements – please contact us to discuss. The front panel can be configured with combinations of the switch modules below, up to a total width of 6 slots.

Switches	Frequency	Terminations	Configuration	Width	Connectors
Transfer	DC-12 GHz	Transfer	Fail-safe	2 slots	N-type
	DC-18 GHz	Transfer	Fail-safe	1 slot	SMA
	DC-26.5 GHz	Transfer	Fail-safe	2 slots	SMA
	DC-40 GHz	Transfer	Fail-safe	2 slots	2.92 mm
	DC-50 GHz	Transfer	Fail-safe	2 slots	2.4 mm
SPDT	DC-2.15 GHz	Absorptive	Fail-safe	2 slots	F-type
	DC-18 GHz	Absorptive	Fail-safe	1 slot	SMA
	DC-26.5 GHz	Absorptive	Fail-safe	1 slot	SMA
	DC-40 GHz	Reflective	Fail-safe	1 slot	2.92 mm
	DC-40 GHz	Absorptive	Fail-safe	1 slot	2.92 mm
SP4T	DC-50 GHz	Reflective	Fail-safe	1 slot	2.4 mm
	DC-18 GHz	Absorptive	Normally open	2 slots	SMA
	DC-26.5 GHz	Absorptive	Normally open	2 slots	SMA
	DC-40 GHz	Absorptive	Normally open	2 slots	2.92 mm
	DC-50 GHz	Absorptive	Normally open	2 slots	2.4 mm
SP6T	DC-12 GHz	Absorptive	Normally open	2 slots	SMA
	DC-26.5 GHz	Absorptive	Normally open	2 slots	SMA
	DC-40 GHz	Reflective	Normally open	2 slots	2.92 mm
	DC-40 GHz	Absorptive	Normally open	2 slots	2.92 mm
	DC-50 GHz	Absorptive	Normally open	2 slots	2.4 mm



DEFAULT SWITCH STATES

Mini-Circuits' RCM series switch assemblies use a range of high-reliability mechanical switches that have well defined actions when the DC power supply is removed or interrupted. The states are summarized below:

Switch Type	Default State	Configuration	Action During DC Power Interruption
SPDT	Com to port 1	Fail-Safe	Reverts to default state
SPnT	All ports disconnected:	Normally Open	Reverts to default state
	- Com open / reflective - Ports 1 to n internally		
Transfer (DC-18 GHz)	J1 to J3 J2 to J4	Fail-safe	Reverts to default state
Transfer (All others)	J1 to J2 J3 to J4	Fail-safe	Reverts to default state

SOFTWARE & DOCUMENTATION

Mini-Circuits' full software and support package including user guide, Windows GUI, API, programming manual and examples can be downloaded free of charge from:

www.minicircuits.com/softwaredownload/ztm_rcm.html

A comprehensive set of software control options is provided:

- GUI for Windows – Simple software interface for control via Ethernet and USB
- Programming / automation via Ethernet
 - Complete set of control commands which can be sent via any supported protocol – simple to implement in the majority of modern programming environments
- Programming / automation via USB
 - DLL files provide a full API for Windows with a set of intuitive functions which can be implemented in any programming environment supporting .Net Framework or ActiveX
 - Direct USB programming is possible in any other environment (not supporting .Net or ActiveX)

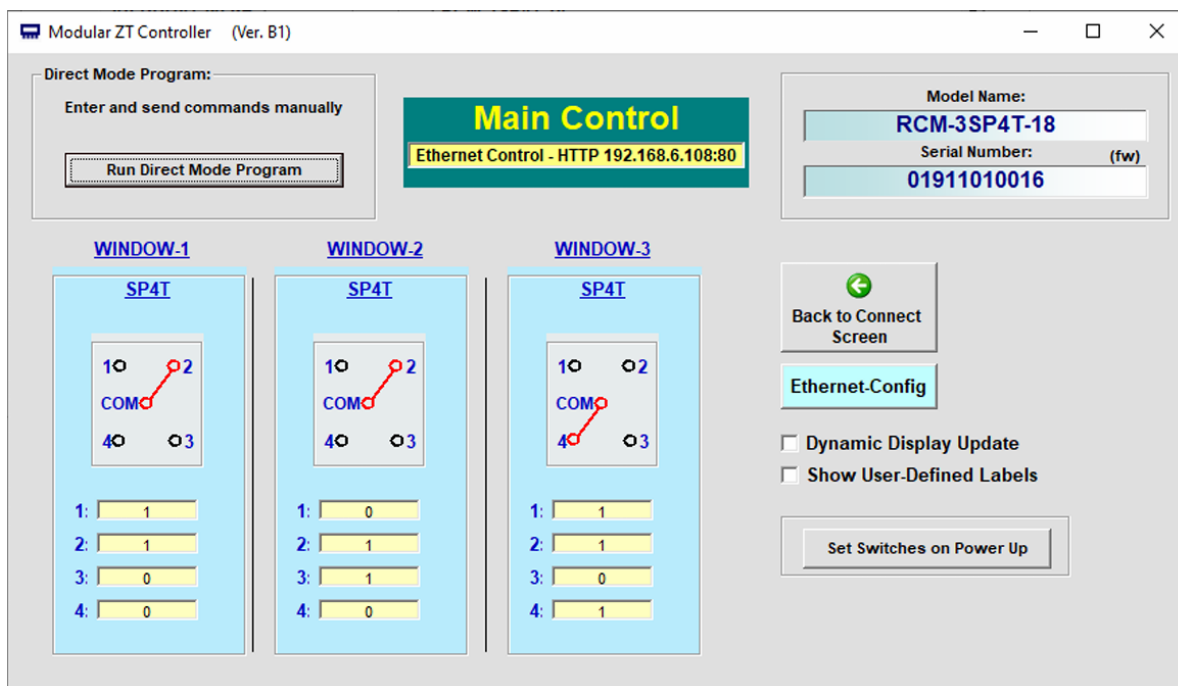
CONTROL INTERFACES

Interface	Details	
Ethernet Control	Supported Protocols	TCP / IP, HTTP, Telnet, DHCP, UDP
	Max Data Rate	10 Mbps (10 Base-T Half Duplex)
USB Control	Supported Protocols	HID – Full Speed
	Min Communication Time ¹	3 ms typ

¹Based on the USB HID protocol polling interval (1 ms with 64 bytes per packet) and no other significant CPU or USB activity

GRAPHICAL USER INTERFACE (GUI) FOR WINDOWS

- Connect via USB or Ethernet
- Run GUI in “demo mode” to evaluate software without a hardware connection
- View and set all switch states at the click of a button
- Configure automated / timed switching sequences
- Set switch power-up states
- Configure Ethernet settings
- Update firmware



INCLUDED ACCESSORIES

Part Number	Description
AC/DC-24-3W1	
	AC/DC 24V DC grounded power adaptor. Operating temperature 0 to +40 °C, max current 2.5A, IEC C4 AC inlet.
CBL-3W1-xx	AC power cord (IEC C5 connector to specified local plug).
USB-CBL-AB-3+	USB cable (2.7ft) type A to type B
CBL-RJ45-MM-5+	Ethernet cable (5 ft)

AC POWER CORD OPTIONS

Part Number	Description
	CBL-3W1-US USA NEMA 5-15 plug (type B) to IEC C5 connector
	CBL-3W1-EU Europe CEE 7/7 plug (type E/F) to IEC C5 connector
	CBL-3W1-UK UK BS-1363 plug (type G) to IEC C5 connector
	CBL-3W1-AU Australia & China AS/NZS 3112 plug (type I) to IEC C5 connector
	CBL-3W1-IL Israel SI-32 plug (type H) to IEC C5 connector

COMPLIANCE

Refer to our website for compliance methodologies and qualifications

