CROSS TECHNOLOGIES, INC.

DATA SHEET
Rev. A
9/28/23

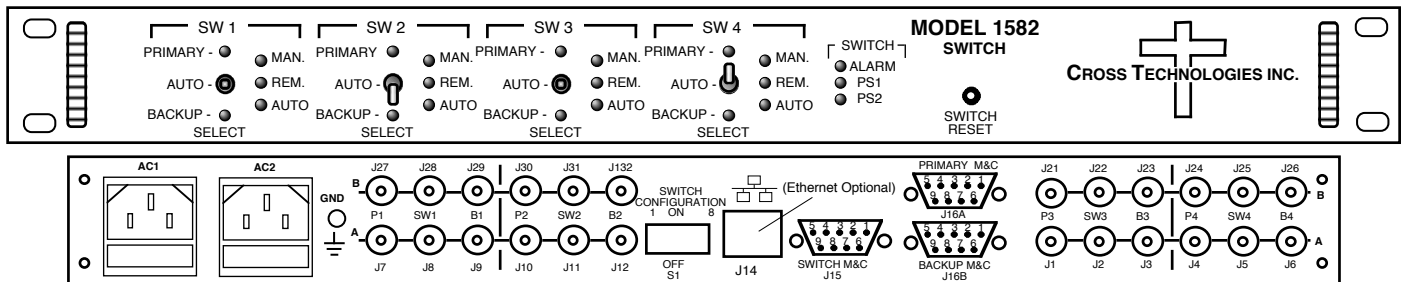# 1582-421L Quad 1:1 Switch, DC-2.15 GHz, 2PDT, M&C Monitor and Channel Select

The 1582-421L Quad 1:1 Switch provides **four 2PDT switch pairs (SWITCH 1, 2, 3, and 4). Each switch pair independently provides** Auto, Manual or Remote (M&C) latched relay switching between PRIMARY and BACK-UP, DC - 2.15 GHz RF signals. The M&C provides monitoring of all parameters, Switch Reset, and Channel Selection (when in Auto mode only). Alarm conditions on PRIMARY and BACK-UP are either a contact closure to ground or an open (selectable by a rear panel DIP switch). Auto has three modes:

Auto - PRIMARY; The PRIMARY preferred mode - switches from PRIMARY to BACK-UP only if PRIMARY alarms and BACK-UP is good. The unit switches back to PRIMARY when PRIMARY is no longer in alarm or both PRIMARY and BACK-UP in alarm.

Auto - LATBACK-UP; Latch to BACK-UP mode - switches from PRIMARY to BACK-UP if PRIMARY alarms and BACK-UP is good and stays in BACK-UP regardless of PRIMARY or BACK-UP alarm conditions until reset to PRIMARY by the front panel Switch Reset switch or M&C command.

Auto - MIN SW; Minimum **Auto** switching mode - switching occurs if the active channel (set by the front panel Manual Select switch or M&C command) alarms and the other channel is clear. It switches back if this channel then alarms and the other is clear.

When power is lost, the current latched state remains selected. Front panel LEDs indicate PRIMARY and BACK-UP alarms, Remote or Manual mode, and redundant power supplies on. Rear panel DIP switches set alarm polarity (NO or NC for alarm), M&C interface, and Auto modes (PRIMARY PRIME, LATBACK-UP, or MIN SW). The front panel switch selects the signal path in the Manual mode or selects AUTO switching. The RS232 or RS422/485 M&C (Ethernet optional) monitors switch positions, LED and alarm status, and selects the RF switch position (when in Auto mode only). A contact closure to ground indicates an internal fault condition or loss of power. Connectors are BNC for RF signals and DB9 for M&C and alarm input and output contact closures. It is powered by separately fused, 100-240 ±10% VAC redundant power supplies.

1582-421L FRONT AND REAR PANEL (OPTIONAL ETHERNET SHOWN)

1582-421L Technical Specifications

RF Switch Characteristics (Each Switch)

Impedance / Connectors	75Ω / BNC
Return Loss	12 dB min, ≥ 14 dB typ; DC to 1.5 GHz
	10 dB min, ≥ 12 dB typ; 1.5 to 2.15 GHz
Frequency Response	≤ ±0.5 dB, 40 MHz BW;≤ ±1 dB, 1 GHz BW
Isolation	55 dB min, ≥ 60 dB typ; DC to 1.5 GHz
	45 dB min, ≥ 50 dB typ; 1.5 to 2.15 GHz
Insertion Loss	1.5 dB max, ≤ 1.0 dB typ; DC to 1.5 GHz
	2.5 dB max, ≤ 2.0 dB typ; 1.5 to 2.15 GHz
Switch time	**≤ 20 milliseconds**
DC Switching	30VDC, max; 0.5 Amps, max
Type, Configuration	Latching Relay, **2PDT**, no termination

Alarm and Control, M&C
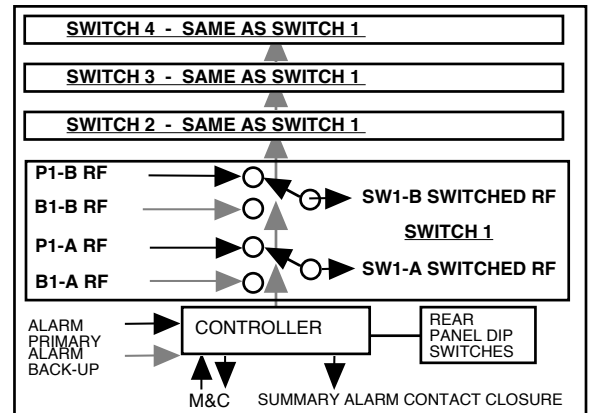|	
Alarm output signal	Form C relay: 30VDC, 0.5A max
M & C Interface/baud rate	RS232C or RS422/485, selectable/9600 (Ethernet Optional)

Controls, Indicators
Primary/Auto/Backup	Front Panel switch
Switch Reset	Front Panel switch or via M&C
Man,Rem,Auto,Alarm,PS	Red, Yellow, Green, Red, Green (PS1), Green (PS2) LEDs; Alarm has Form C contact closure, M&C
Primary, Backup	**Green (good), Red (alarm), Blue (selected) 3 color LEDS**

Connectors, Other
RF Connectors	75Ω BNC (female)
Ext. Alarms In, M&C Con.	DB9 (female)
Size	1 RU, 19 inch standard chassis 1.75" high X 12.0" deep
Power	Redundant 100 - 240 ±10% VAC, 47 - 63 Hz, 20 Watts maximum power supplies

*10˚C to 40˚C; Specifications subject to change without notice

1582-421L BLOCK DIAGRAM

Available Options
W8 - Ethernet; w/Web Browser (WB)
W18 - Ethernet; w/WB & SNMP
W18-v3 - Ethernet; w/WB & SNMPv3
W28 - Ethernet; w/TCP/IP, Telnet
W828 - W8 + W18 + W28
W31 - 0 to +50 degrees C operatione

Connectors/Impedance
STD - 75Ω BNC (RF IN), 75Ω BNC (RF OUT)
D - 50Ω BNC (RF IN), 50Ω BNC (RF OUT)
SS - 50Ω SMA (RF IN), 50Ω SMA (RF OUT)

Contact Cross for other options