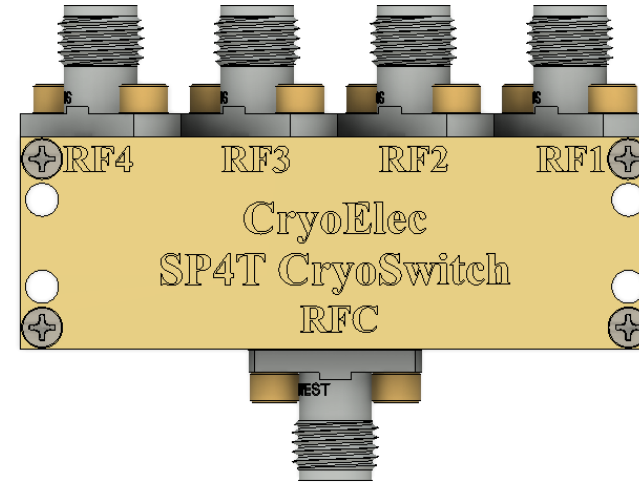


CryoElec SP4T CryoSwitch

12/2023



SP4T SN#02



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Phone: (626) 676 0143

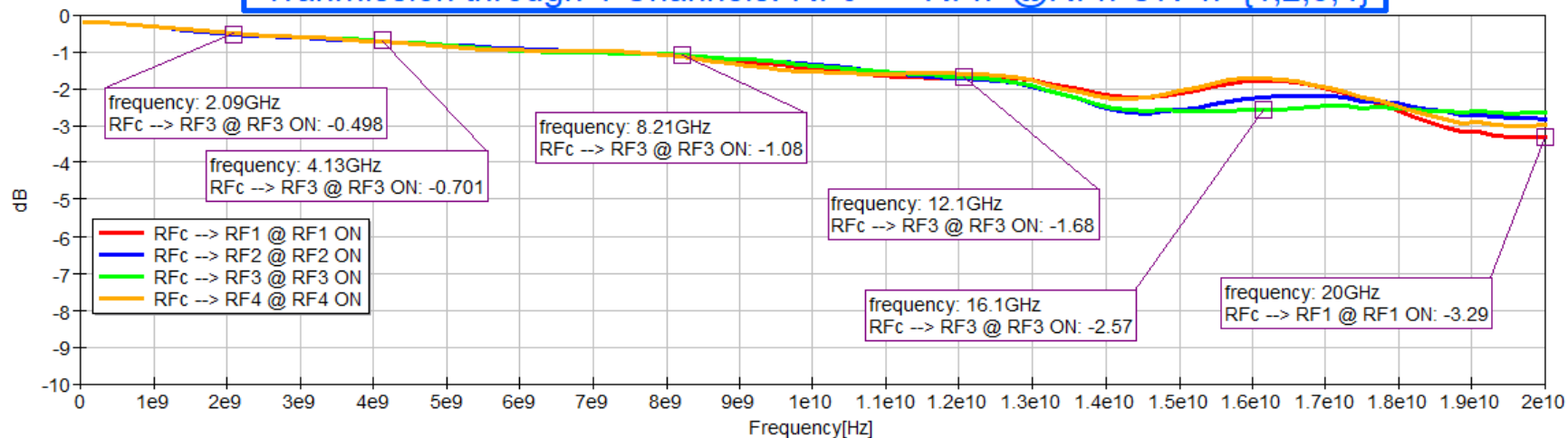
Email: info@CryoElec.com hamdi.mani@gmail.com

Web: www.CryoElec.com

SP4T CryoSwitch: Insertion & Return Loss @ 300 Kelvin

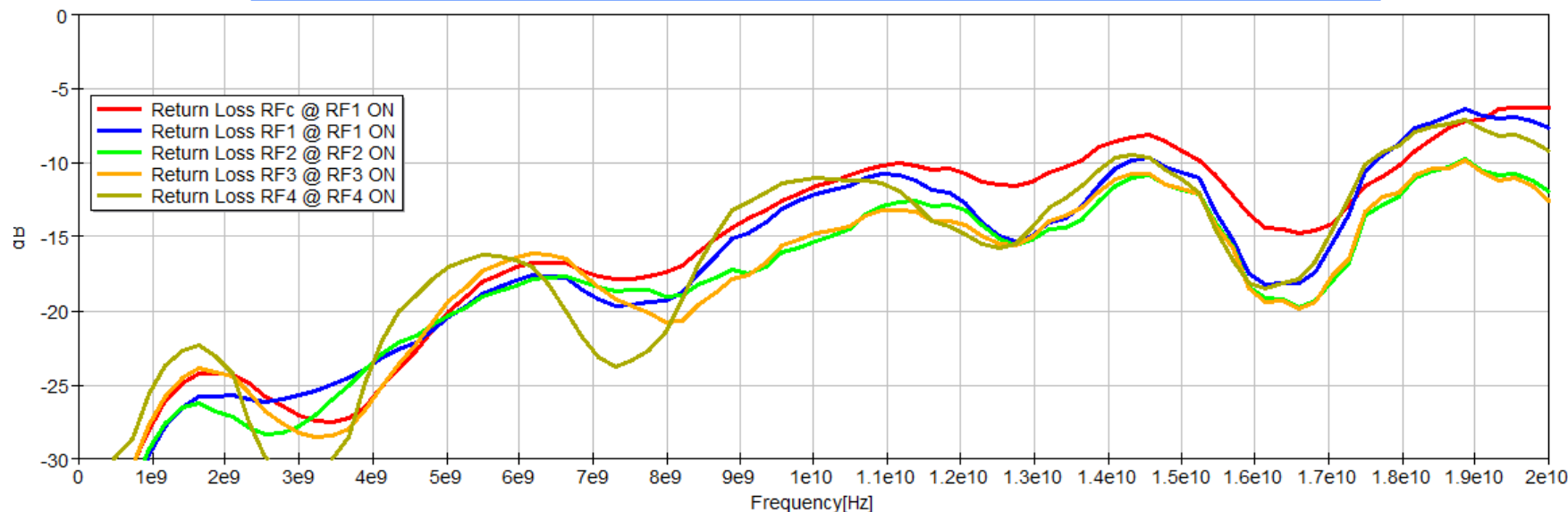
CryoElec SP4T CryoSwitch SN#02 Insertion Loss @ 300 Kelvin

Transmission through 4 Channels: RFc --> RFn @RFn ON n={1,2,3,4}



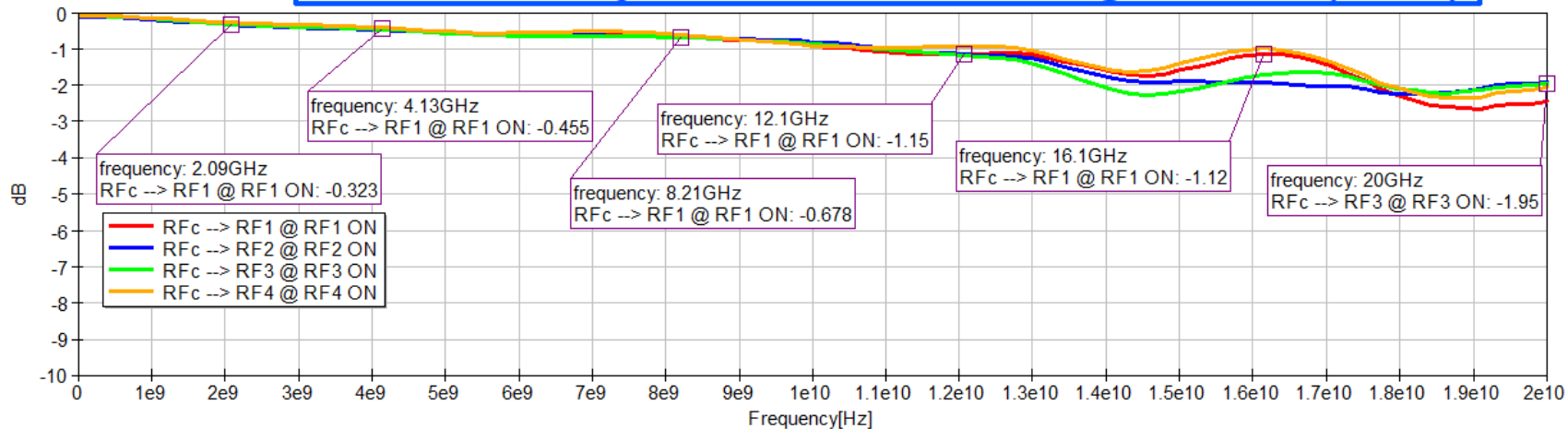
CryoElec SP4T CryoSwitch SN#02 Return Loss @ 300 Kelvin

Return Loss @RFn ON n={1,2,3,4}

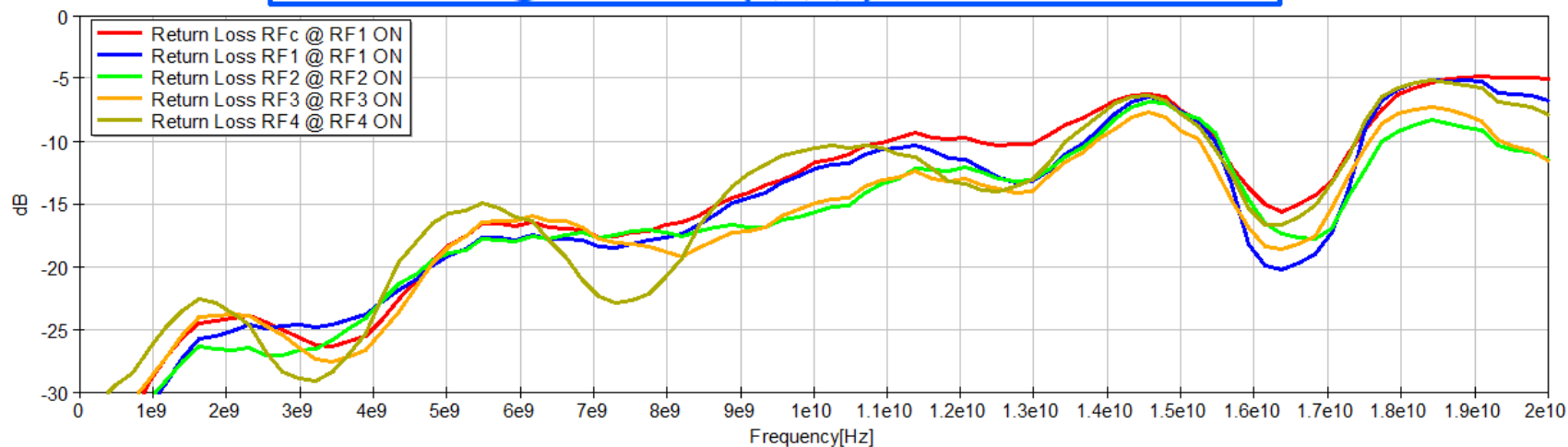


SP4T CryoSwitch: Insertion & Return Loss @ 15 Kelvin

CryoElec SP4T CryoSwitch SN#02 Insertion Loss @ 15 Kelvin
 Transmission through 4 Channels: RFc --> RFn @RFn ON n={1,2,3,4}

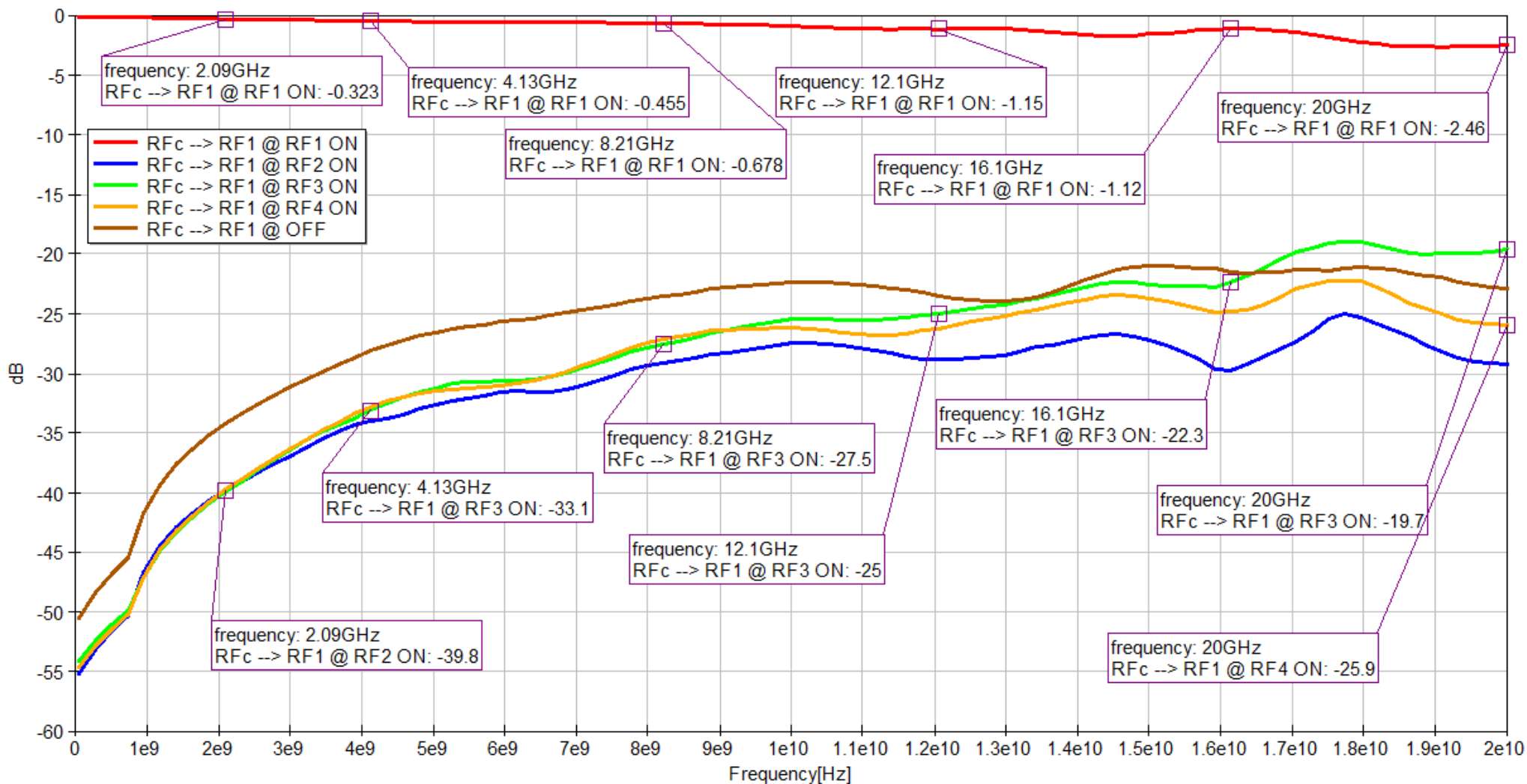


CryoElec SP4T CryoSwitch SN#02 Return Loss @ 15 Kelvin
 Return Loss @RFn ON n={1,2,3,4}



SP4T CryoSwitch: Insertion Loss and Isolation @ 15 Kelvin

CryoElec SP4T CryoSwitch SN#02 Insertion Loss @ 15 Kelvin
 Transmission: RFc --> RF1 @ RFn ON n={1,2,3,4}

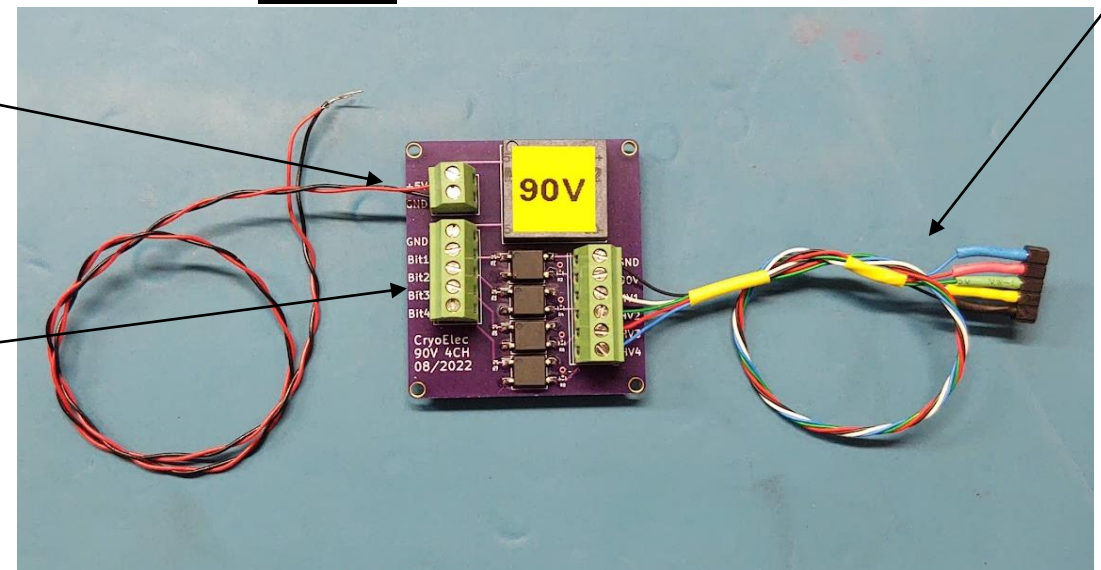


SP4T CryoSwitch: 90V Control Board and Truth Table

+5V TO +90V Switch Control Board

+5V DC Input (@ 150mA)

Digital Control Bits: Connect To digital Outputs (5V TTL) of A DAQ (Labjack , Arduino,Rpi...)



90V output lines: Connect to Switch GND, VG1 to VG4



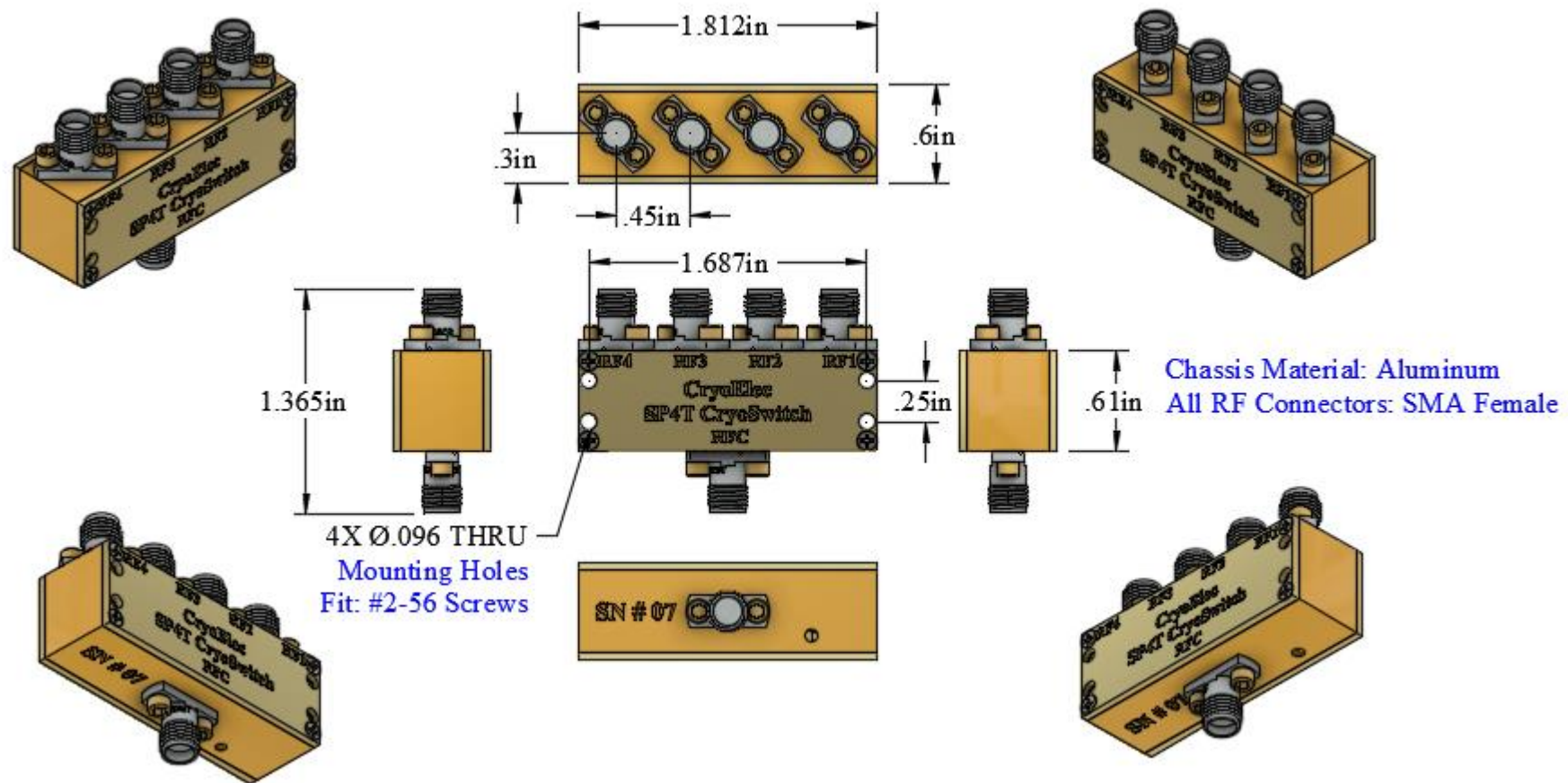
HIGH VOLTAGE

Warning: 90V High Voltage Do Not touch

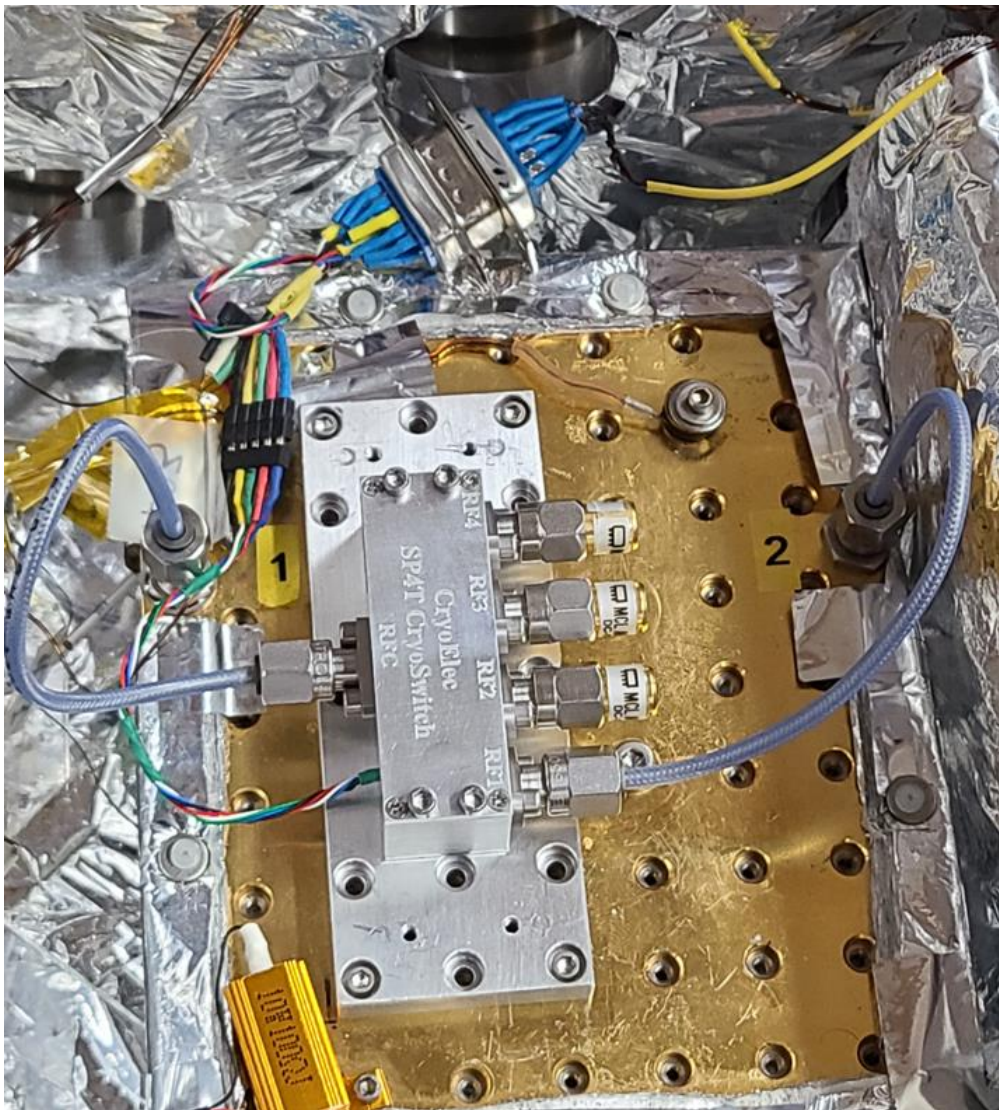
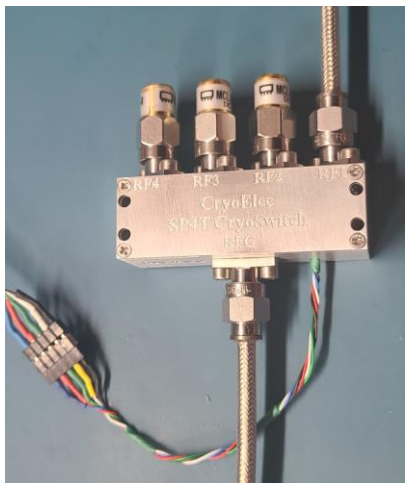
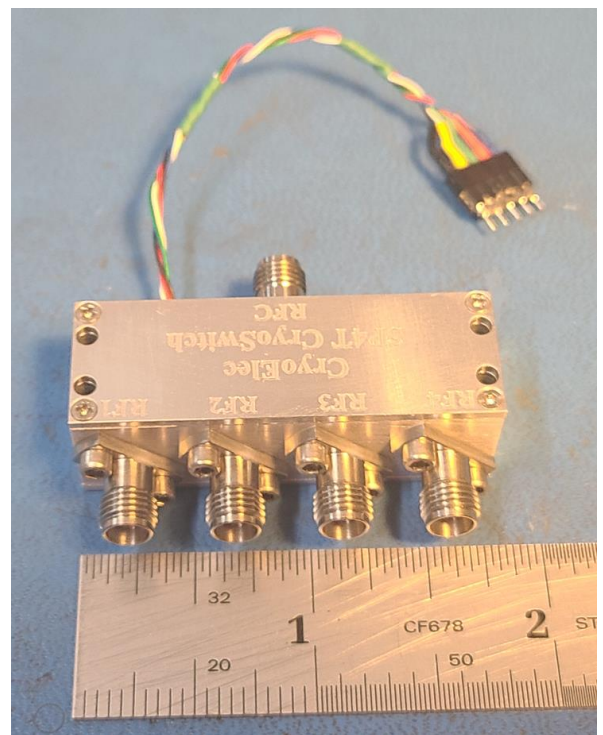
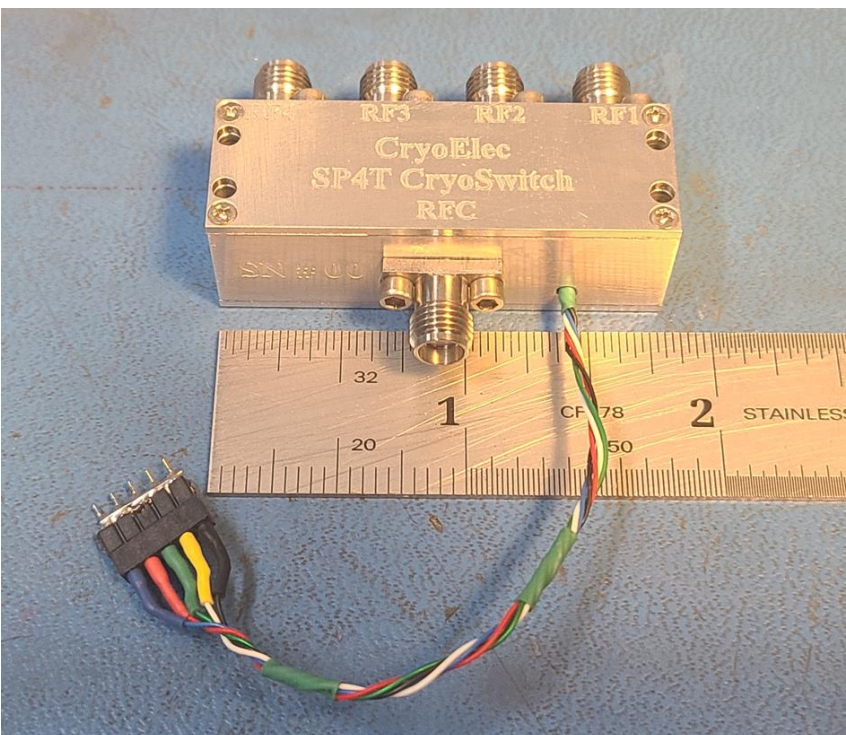
- HVn Enable/Turned “ON” when Bitn “HIGH” (3.3V -5V) n={1,2,3}
- Current drawn by each 90V HV line connected to Switch < 10nA
- “OFF” state: 0V: connects to GND (do not Float)
- HV Channels optically isolated from digital control Bits
- Current drawn by controller:
 - 43mA @ 5V (All Channels OFF)
 - 50mA @ 5V (ONE Channel ON – 2x 90V gates ON)
- Recommended: Set compliance current (Max Current) to 150mA for 5V supply

SP4T Truth Table				
	Logic 1	90V Applied Voltage		
CTRL BIT	RFc-->RF1	RFc-->RF2	RFc-->RF3	RFc-->RF4
Cbit1	1	0	0	0
Cbit2	0	1	0	0
Cbit3	0	0	1	0
Cbit4	0	0	0	1

SP4T CryoSwitch: Mechanical Drawing



SP4T CryoSwitch: Photos of Chassis





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