

REV	REVISION DESCRIPTION	REVISED	APPROVED
X-	PRELIMINARY	2024-10-07	A. KEARNS
XA	UPDATED SCREENSHOT FOR V1.3 SOFTWARE	2025-07-22	D. PEPPLES

THIS ASSEMBLY CONTAINS ESD SENSITIVE AND MSL 2 DEVICES.

PROPRIETARY INFORMATION OF POLE/ZERO CORPORATION						
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES TOLERANCES: DECIMAL ANGULAR .X ± .1 X ± 10° .XX ± .01 .X ± 5° .XXX ± .005	AUTHOR: A. KEARNS	DATE: 2024-10-07	TEST PROCEDURE, S-KU IMF, CUSTOMER CONTROL			
	CHECKER:	DATE:				
	ENGINEER: A. KEARNS	DATE: 2024-10-07	SIZE A	CAGE CODE 0U5W0	DOCUMENT NUMBER 1494304	REV XA
	DOCUMENT APPROVAL:	DATE:	SCALE: NONE		UNIT WT:	SHEET: 1 OF 7
	DESIGN APPROVAL:	DATE:				

1.0 SCOPE:

This test procedure provides information on control of S-Ku Integrated Microwave Filters (IMF®) series on 802931 carrier boards.

2.0 PURPOSE:

Aid in setup and demonstration of the S-Ku IMF series.

3.0 EQUIPMENT TABLE:

Equipment Description	QTY
802931 Assembly with filter attached	1
Integrated Filter Controller (IFC)	1
IFC to EEPROM board cable	1
EEPROM board to filter cable	1
EEPROM board	1

Table 11: Required Test Equipment (OR EQUIVALENT).

4.0 TEST REQUIREMENTS:

Temperature:	-40°C, +25°C, +85°C
Humidity:	none
Vibration:	None
Altitude:	Normal Ground

Table 22: Test Conditions.

5.0 IMF RECOMMENDED RATINGS

Parameter	Min.	Nom.	Max.	Notes
V _{CC}	+3.0 V	+5 V	+10 V	DUT supply voltage
I _{CC}	-	0.3 mA	2mA	DUT supply current
GPIO 1:12	+3.0 V	+5 V	+10 V	Voltage for GPIO control
RF Pin (dBm)	-	+20	+23	RF Input power

Table 33. Ratings.

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6.0 PIN NUMBERS, RATINGS AND DESCRIPTIONS

6.1 802931 Pinout

Pin	Name	Operation for IMF1004- IMF1007	Operation for IMF1003
1, 2	V1	NC	NC
3	V2	NC	NC
4	V3	NC	GPIO: 0 or V _{CC}
5	V4	NC	GPIO: 0 or V _{CC}
6	V5	V _{CC}	GPIO: 0 or V _{CC}
7	V6	GPIO: 0 or V _{CC}	GPIO: 0 or V _{CC}
8	V7	GPIO: 0 or V _{CC}	GPIO: 0 or V _{CC}
9	V8	GPIO: 0 or V _{CC}	GPIO: 0 or V _{CC}
10	V9	GPIO: 0 or V _{CC}	V _{CC}
11	GND	GND	GND
12	V10	GPIO: 0 or V _{CC}	GPIO: 0 or V _{CC}
13	V11	GPIO: 0 or V _{CC}	GPIO: 0 or V _{CC}
14	V12	GPIO: 0 or V _{CC}	GPIO: 0 or V _{CC}
15	V13	GPIO: 0 or V _{CC}	GPIO: 0 or V _{CC}
16	V14	V _{CC}	GPIO: 0 or V _{CC}
17	V15	NC	GPIO: 0 or V _{CC}
18	V16	NC	V _{CC}
19, 20	NC	NC	NC

Table 44. 802931 Board Pinout, Operation.

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ADDITIONAL RESTRICTIONS.

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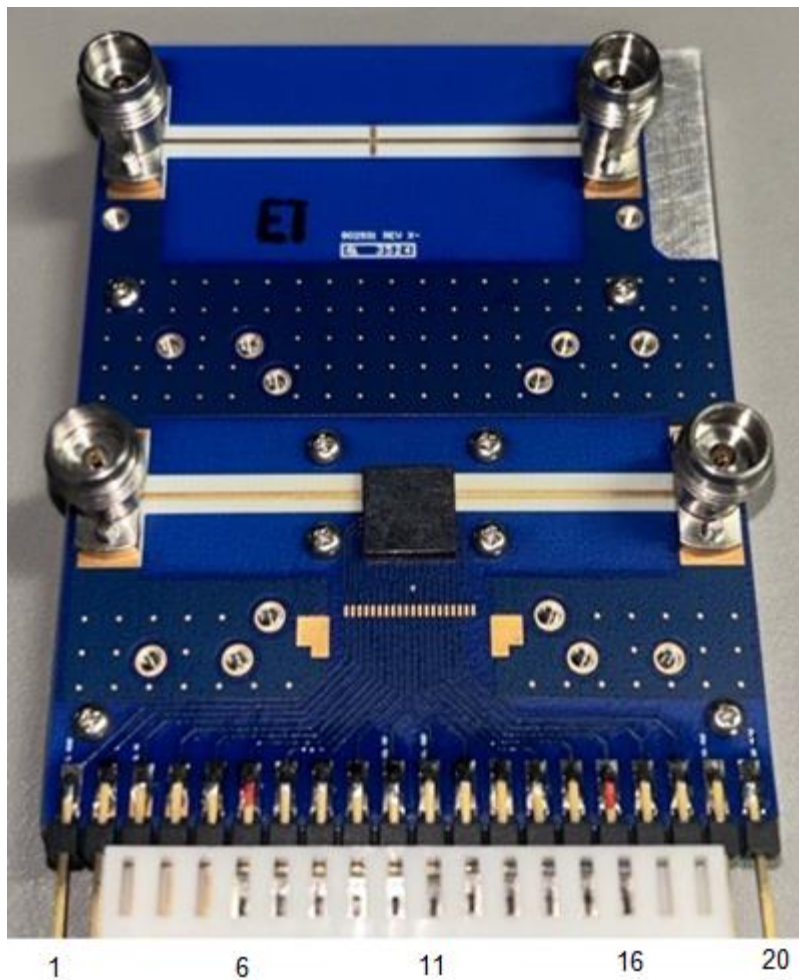


Figure 11. 802931.

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7.0 IFC SET UP

7.1 Connecting the IFC Hardware

7.1.1 IFC IO and Cables

7.1.1.1 IFC connections include: Power supply input, USB, & IFC IO to EEPROM board IO.

7.1.1.2 EEPROM board IO include: IFC IO to EEPROM board IO & EEPROM board to Filter IO.

7.1.2 Plug in the IFC power cable, then plug in the USB cable from the computer to the IFC.

7.1.3 Prior to connecting the IFC to the EEPROM board cable, verify the EEPROM to filter cable is connected as shown in Figure 22. Note the position of the connector on the 802931. Make sure the labels on the connectors are facing down towards the GND plane.

7.1.4 If all is correct, connect the IFC to the EEPROM board cable.



Figure 22. IFC Hardware setup.

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7.2 Controlling the filter using the IFC Software:

- 7.2.1 Download & open 107417 Customer Demo Controller Software. (V1.3.0.0 or greater)
- 7.2.2 Connect to the IFC: Under the Communication tab, Select “Auto” then “connect” in the dropdown menu under the communication tab to auto connect to the correct communication port.
- 7.2.3 Set the IO voltage to the correct value:
 - 7.2.3.1 Using $V_{CC} = 5.0V$: I/O = 5.000V.
- 7.2.4 Set all other parameters to desired values and apply ON state.

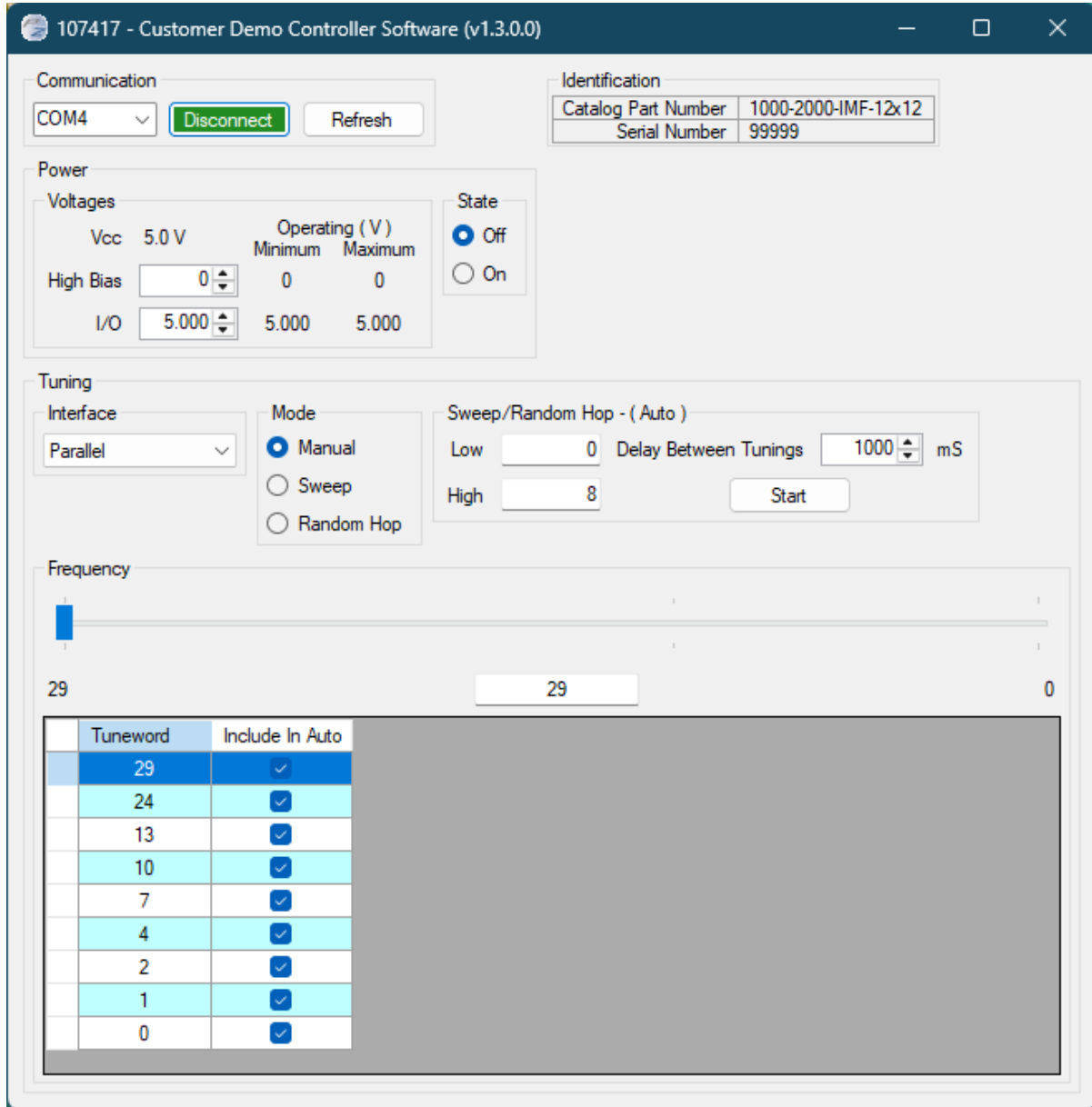


Figure 33. IFC Control Panel.

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8.0 GENERIC SETUP AND MANUAL OPERATION

8.1 GPIO/Parallel Mode

- 8.1.1 Ensure GND, V_{CC} , all GPIO pins are properly connected to the power supply/controller. Floating the IO will cause the filter to malfunction. If using the IFC, see section 7.0.
- 8.1.2 Set V_{CC} and GPIO levels.
- 8.1.3 There are 16 separate voltage pins on the 802931 evaluation board. By individually driving these lines with 0V or V_{CC} , one can achieve full tuning for the filter on the board. For filters 4GHz and above, there are only 4 bits of tuning (8 total GPIO). Follow Table 44 and Figure 11 for specific operation of the Unit Under Test (UUT).

9.0 TROUBLESHOOTING

9.1 Red Light Reset

- 9.1.1 If the red light on the IFC comes on as shown in the picture. The IFC will need to be reset.
- 9.1.2 Reset the IFC by first unplugging the power chord and then the USB cable.
- 9.1.3 Wait 1 minute and then plug them back in. Power supply first and then the USB cable.



Figure 44 - IFC Red Light

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