REV	REVISION DESCRIPTION	REVISED	APPROVED
X-	Engineering Release	N/A	A. Kearns

PROPRIETARY INFORMATION OF POLE/ZERO CORPORATION

This information is export-controlled under ITAR or EAR.

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES

TOLERANCES:

DECIMAL	ANGULAR
.X ± .1	X ± 10°
.XX ± .01	.X ± 5°
.XXX ± .005	

AUTHOR: A.KEARNS	DATE: 2019-10-09	
CHECKER:	DATE:	
ENGINEER: A.KEARNS	DATE: 2019-10-09	
DOCUMENT APPROVAL:	DATE:	
DESIGN APPROVAL:	DATE:	

POLE/ZERO, INTEGRATED MICROWAVE FILTER (IMF) DEMO UNIT INSTRUCTIONS

SIZE	CAGE CODE	DOCUMENT NUMBER	REV
A	0U5W0	-	X-

SCALE:	UNIT WT:	SHEET:
NONE	-	1 OF 4

1. SCOPE

Define tuning control instructions and pinout for customer evaluation of Pole/Zero Integrated Microwave Filters (IMF).

2. REFERENCE INFORMATION

2.1. Eval Board: 4 x 4 mm

2.2. 4 x 4 mm IMF

2.3. Eval Board: 7 x 7 mm

2.4. 7 x 7 mm IMF

2.5. 2.4 mm Southwest Microwave (F) Connectors

2.6. $+3V < V_{CC} < +10V$

2.7. GPIO1-8 (V_G): $V_{G_LO} = 0V \rightarrow$ OFF, $V_{G_HI} = V_{CC} \rightarrow$ ON

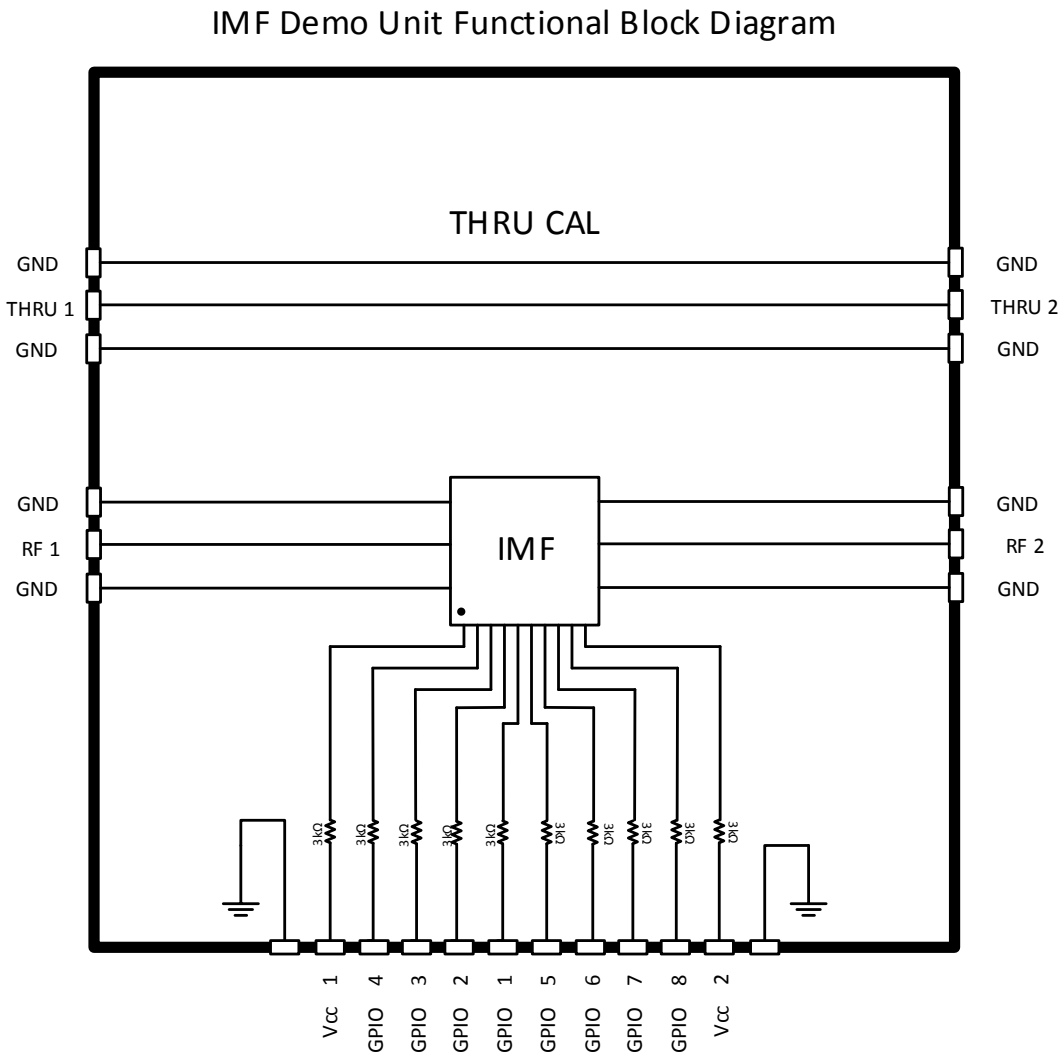

Figure 1. Demo Unit Block Diagram.

This information is proprietary under Pole/Zero and export-controlled under ITAR or EAR.

SIZE	CAGE CODE	DOCUMENT NUMBER	REV
A	0U5W0	-	X-
SCALE: NONE	UNIT WT: -	SHEET: 2 OF 4	

3. EQUIPMENT TABLE

MODEL#	MANUFACTURER	DESCRIPTION	QUANTITY
-	Pole Zero	IMF Demo Board	1
-	Pole Zero	IMF Demo Unit	1
-	Pole Zero	IMF Demo Board Carrier Plate	1
1492-01A-5	Southwest	2.4 mm (F)	4
TSW-106-07-T-S	Samtec	6 pin, 100 mil Pitch Header (M)	2
-	Pole Zero	IMF Demo Unit Cable	2

4. TEST PROCEDURE

4.1. Refer to Figure 1, Figure 2 for all steps in section 4 and follow each step in order.

Failure to do so will damage the IMF.

4.2. Connect both black wires to GND.

4.3. Connect both blue wires to V_{CC}.

4.4. Turn on V_{CC} (blue wire).

4.5. All other wires are GPIO. They can be toggled using V_{G_LO}, V_{G_HI} levels as noted in section 2.

4.5.1. Each GPIO pin draws 60 µA when ON, 10 µA when OFF typically. Current increases to 100 µA typ. when the GPIO are toggled at 1MHz rate.

4.5.2. $V_{CC} = V_{G_HI} = +5V$ is recommended. If desired, $V_{CC} = V_{G_HI}$ can be +3V however Insertion Loss (IL) and Input Power (P_{IN}) of the filter will degrade. $V_{CC} = V_{G_HI} = +10V$ improves IL and P_{IN}.

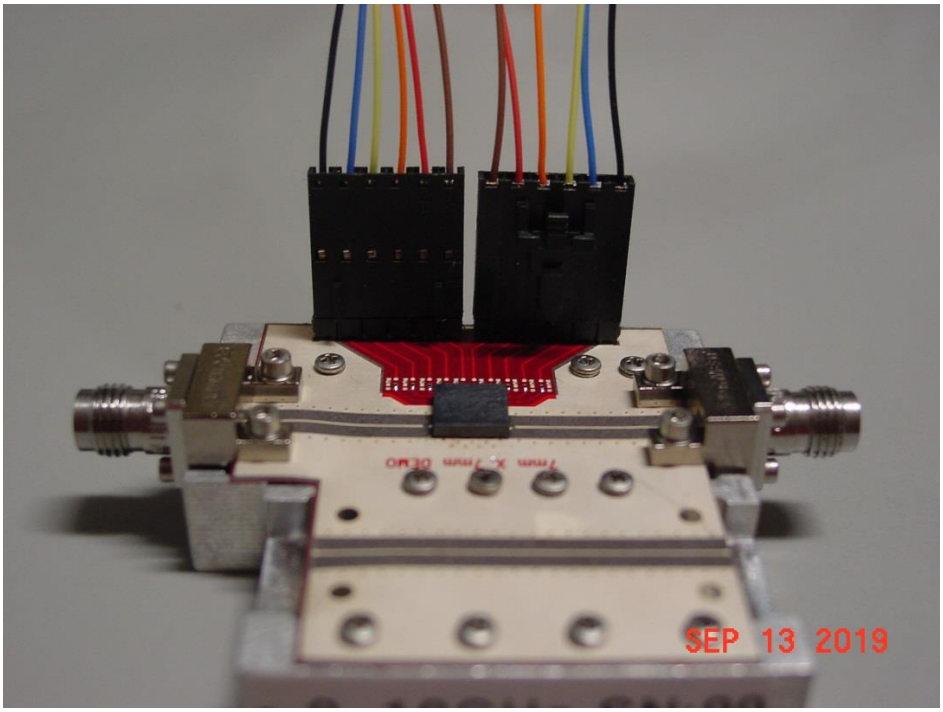

Figure 2: Setup

This information is proprietary under Pole/Zero and export-controlled under ITAR or EAR.

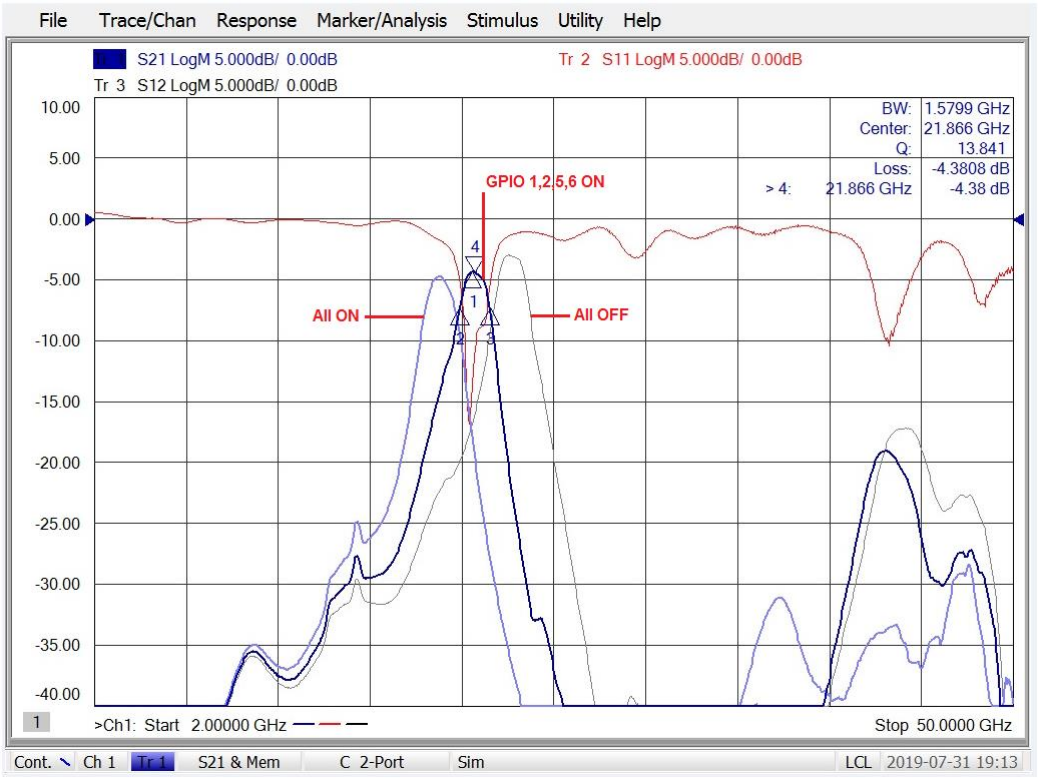

Figure 3. 20.3 - 23.8 GHz IMF Measured Data.

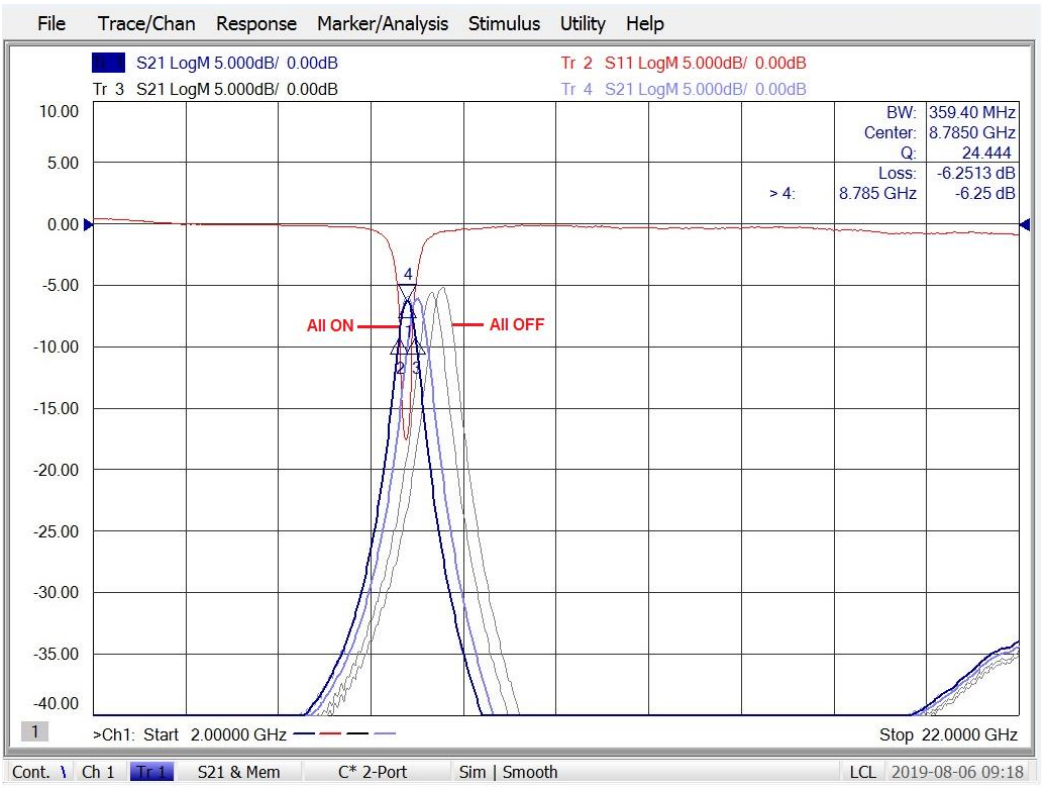

Figure 4. 8.8 – 9.5 GHz IMF Measured Data.

This information is proprietary under Pole/Zero and export-controlled under ITAR or EAR.

SIZE	CAGE CODE	DOCUMENT NUMBER	REV
A	0U5W0	-	X-
SCALE: NONE	UNIT WT: -	SHEET: 4 OF 4	