



microwave

X-Microwave ADMV1013 / ADMV1014 Reference Design Kits (RDks)

XM-RDK-201 / XM-RDK-202

User Manual

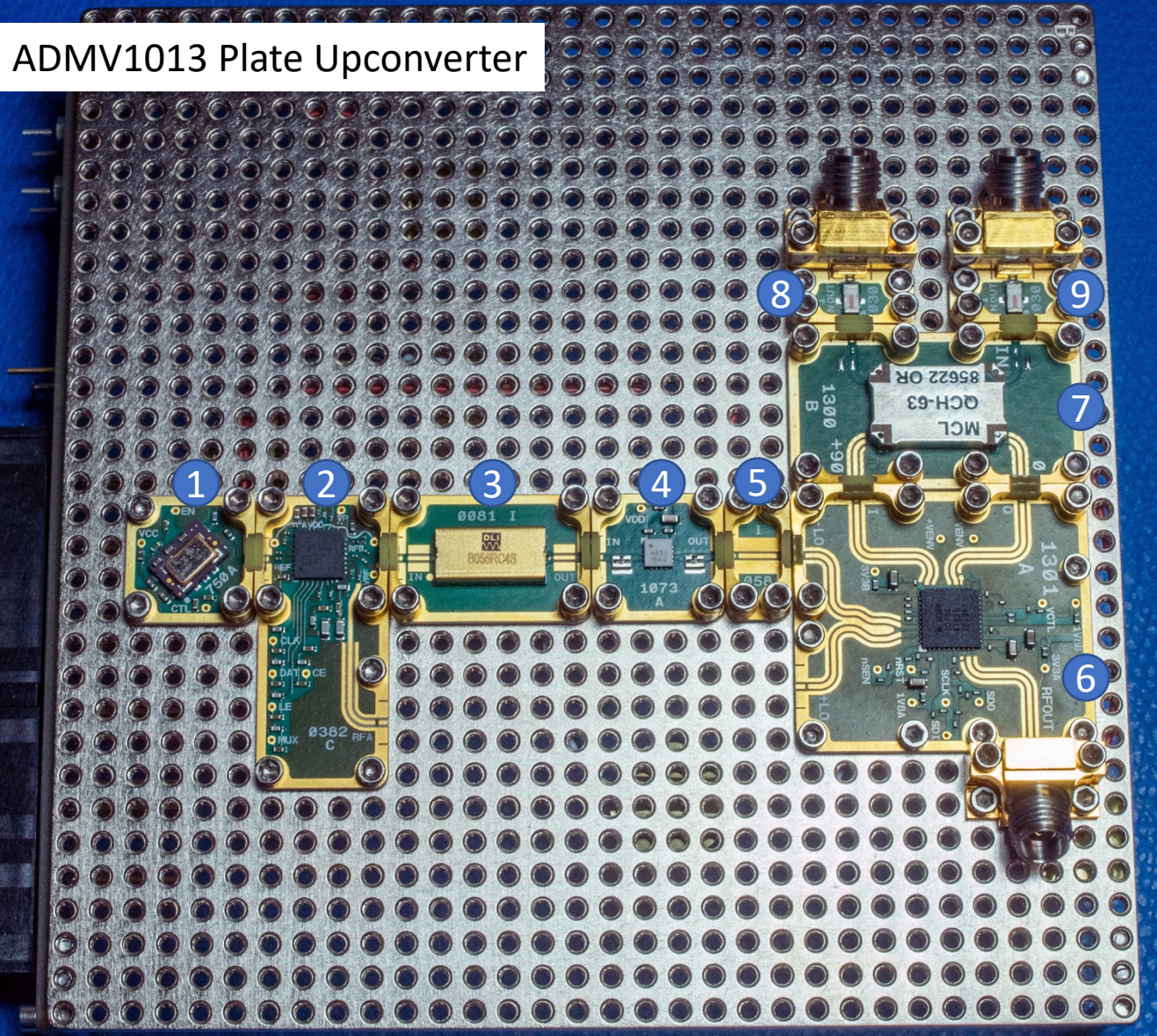
For support contact: Erik Luther erik.luther@xmicrowave.com +1.512.355.7115



This product uses semiconductors that can be damaged by electrostatic discharge (ESD). When handling, care must be taken so that the devices are not damaged.

- Wear ground foot or wrist straps and use a grounded anti-static mat to cover your work surface
- Always discharge yourself by touching a grounded bare metal surface before picking up the plate

ADMV1013 Plate Upconverter



ADMV1013 RDK

(1) Reference Oscillator

OSC, XM-A7T7-0404D, Connor-Winfield TB522-100.0M, [PCB 750], F=100M TCXO

(2) PLL with Integrated VCO

PLL-VCO, XM-A5Y9-0409D, ADI ADF5356 [PCB 382], F=53.125M – 13.6G

(3) Planar Filter

Band Pass Filter, XM-A2C3-0604D, DLI B056RC4S, [PCB 81], CF=6G BW=4.6G

(4) Amplifier

Amplifier, XM-C598-0404D, ADI HMC451LC3, [PCB 1073], F=5G-20G -4dB +19dB -7dB

(5) Transmission Line / Placeholder

0204 Transmission Line, XM-A2M5-0204D, [PCB 48], F=DC-50 GHz

(6) IF Upconverter

IF Upconverter, XM-B913-0809D, ADI ADMV1013, [PCB 1301], F=24GHz – 44GHz

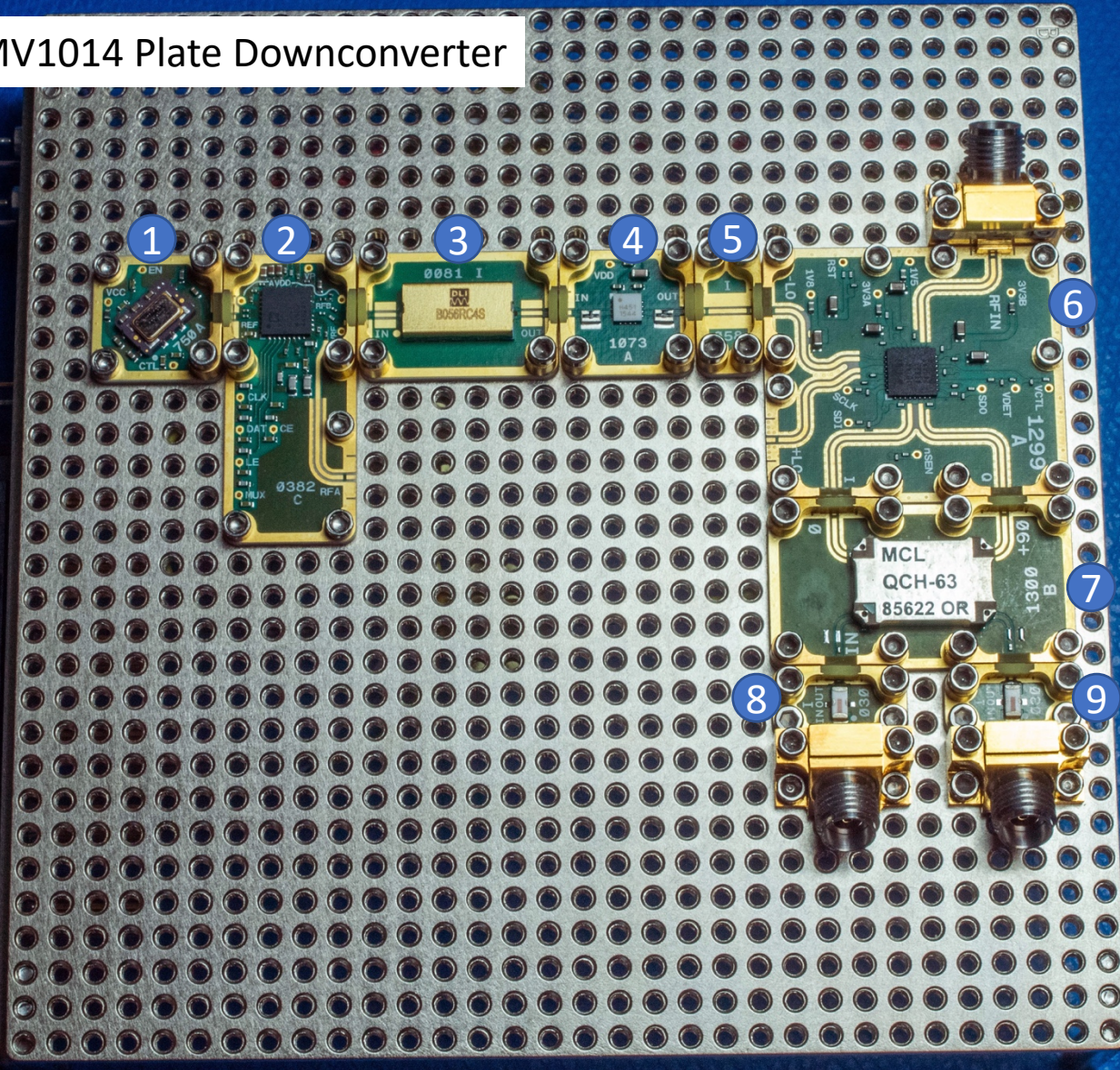
(7) Hybrid Coupler

90 Deg Hybrid, XM-B912-0509D, Mini-Circuits QCH-63, [PCB 1300], F=800M-6.5G

(8,9) LTCC Low Pass Filter

Low Pass Filter, XM-A1B2-0204D, Mini-Circuits LFCN-3000+, [PCB 30], F=3GHz

ADMV1014 Plate Downconverter



ADMV1014 RDK

(1) Reference Oscillator

OSC, XM-A7T7-0404D, Connor-Winfield TB522-100.0M, [PCB 750], F=100M TCXO

(2) PLL with Integrated VCO

PLL-VCO, XM-A5Y9-0409D, ADI ADF5356 [PCB 382], F=53.125M – 13.6G

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(5) Transmission Line / Placeholder

0204 Transmission Line, XM-A2M5-0204D, [PCB 48], F=DC-50 GHz

(6) IF Downconverter

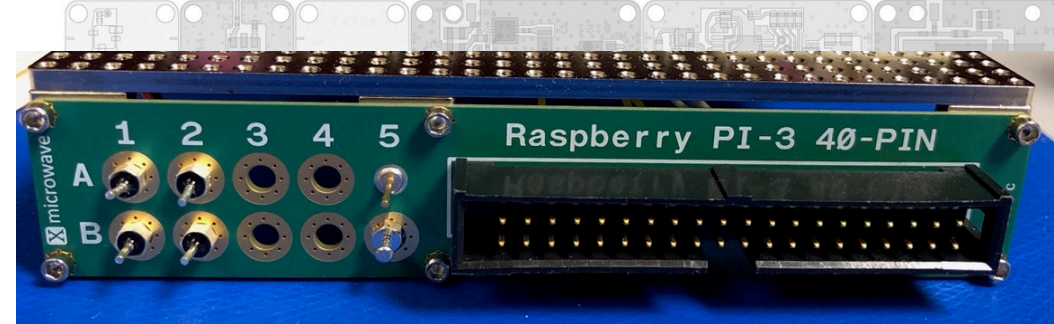
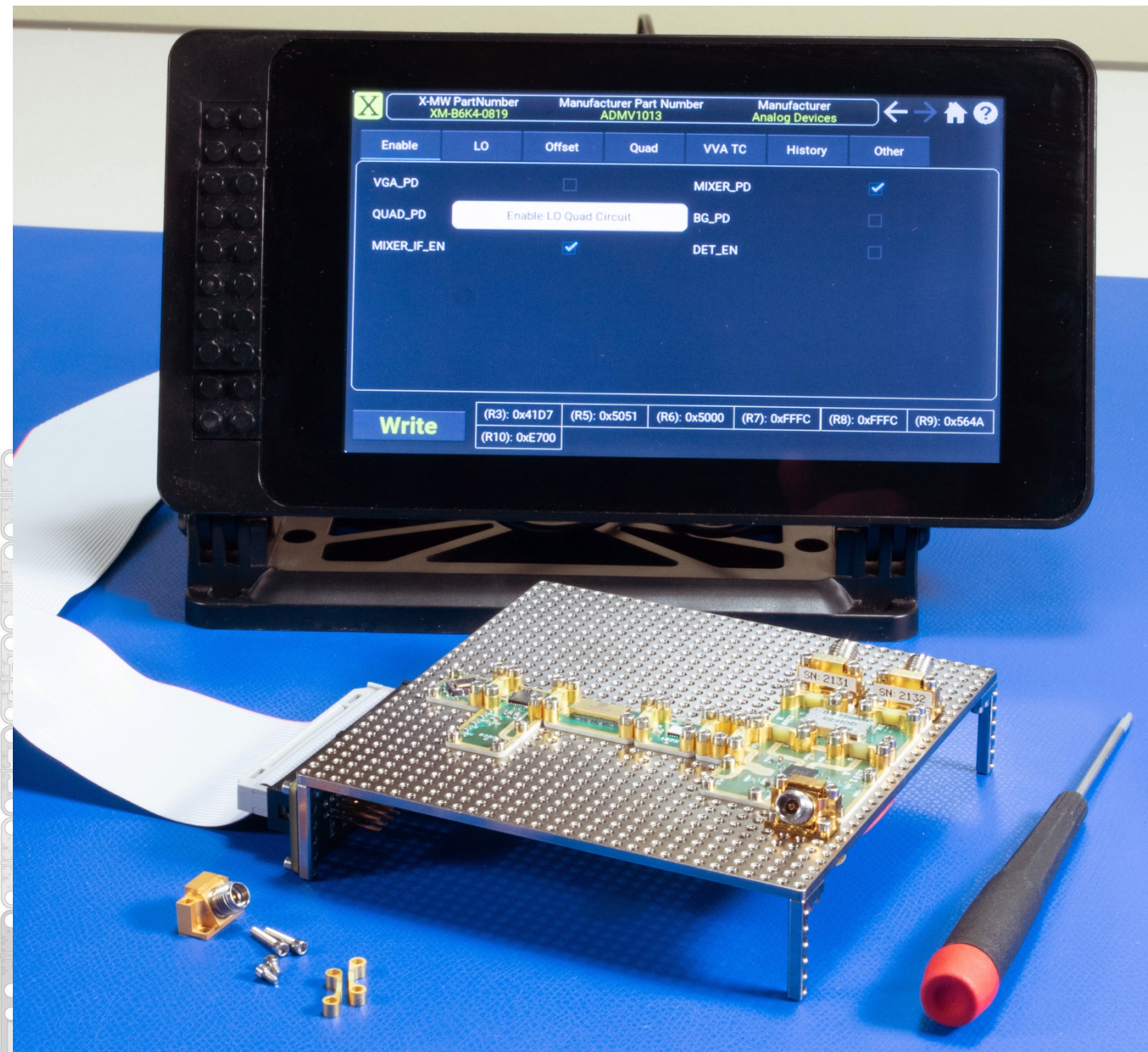
IF Downconverter, XM-B914-0809D, ADI ADMV1014, [PCB 1299], F=24GHz – 44GHz

(7) Hybrid Coupler

90 Deg Hybrid, XM-B912-0509D, Mini-Circuits QCH-63, [PCB 1300], F=800M-6.5G

(8,9) LTCC Low Pass Filter

Low Pass Filter, XM-A1B2-0204D, Mini-Circuits LFCN-3000+, [PCB 30], F=3GHz



Powering Each Prototyping Plate

(A1) +6.5 VDC **(B5) GND**
@ 1A limit

ADMV1013 Control Information (X-MWcontroller)

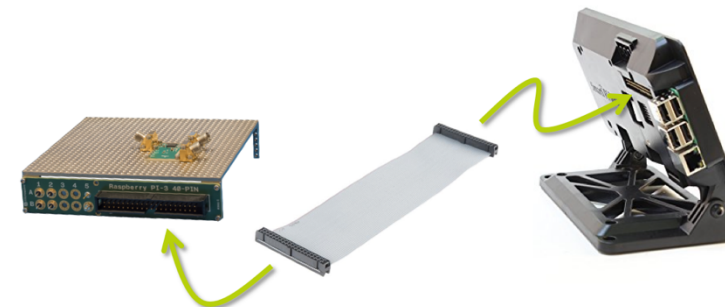
LE0 = X4M-A5Y9-009D, ADI ADF5356

LE 1 = XM-B913-0809D, ADI ADMV1013

ADMV1014 Control Information (X-MWcontroller)

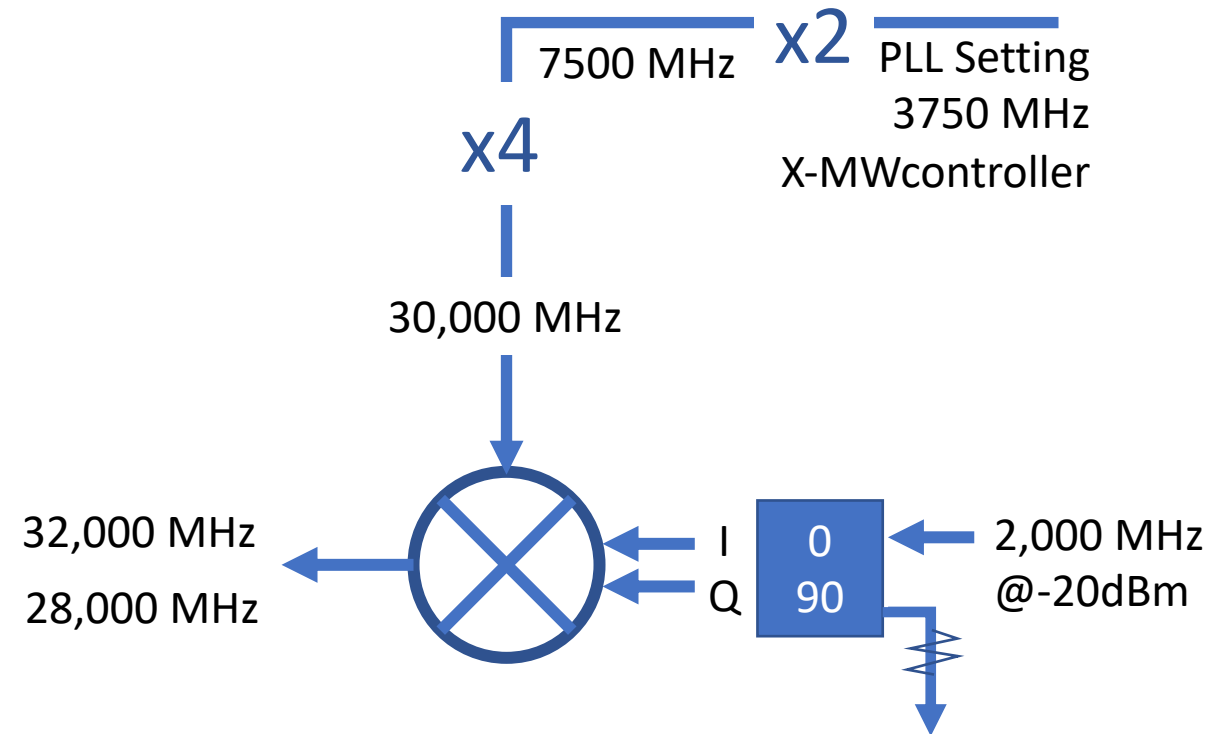
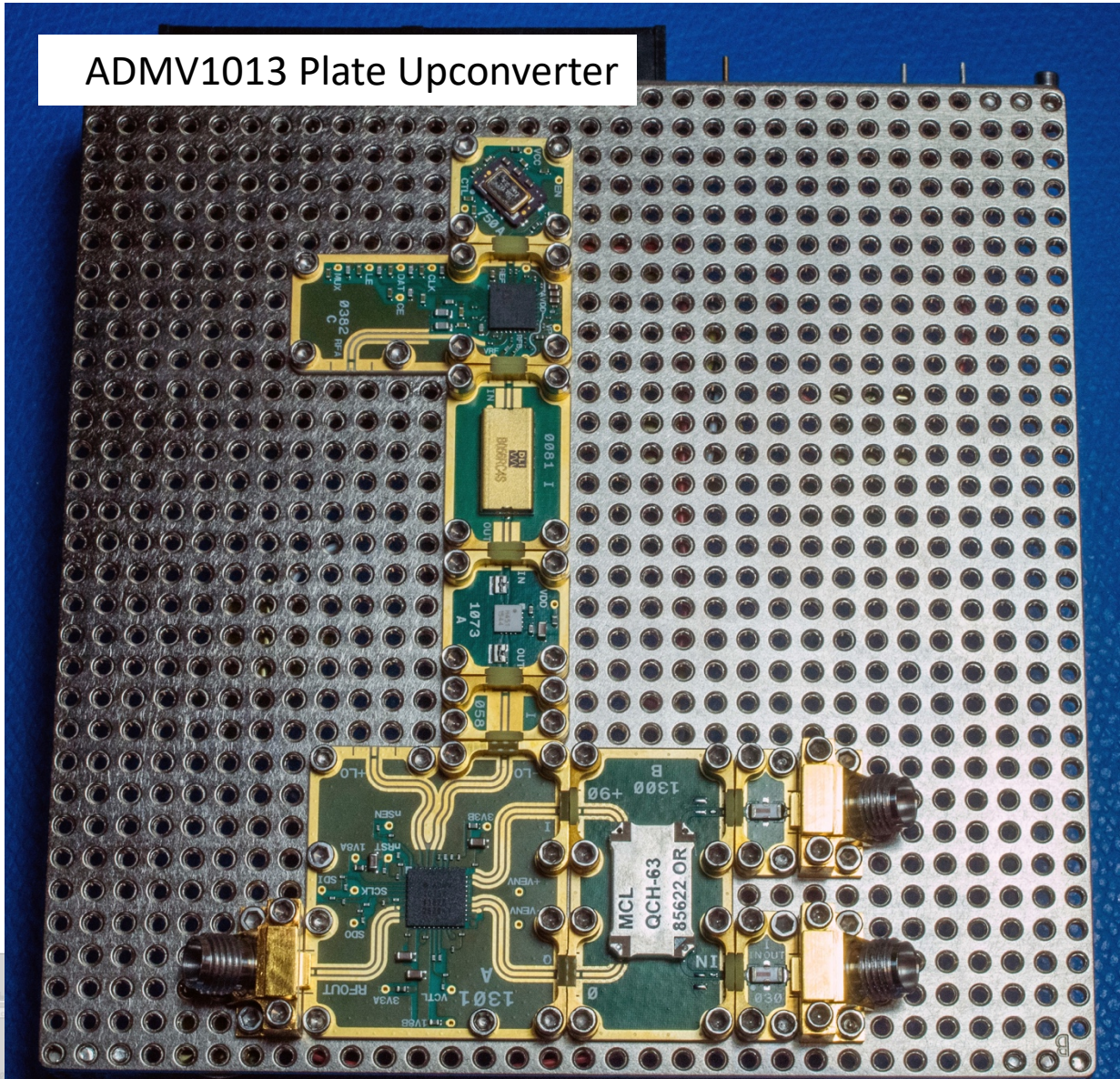
LE0 = X4M-A5Y9-009D, ADI ADF5356

LE 1 = XM-B914-0809D, ADI ADMV1014



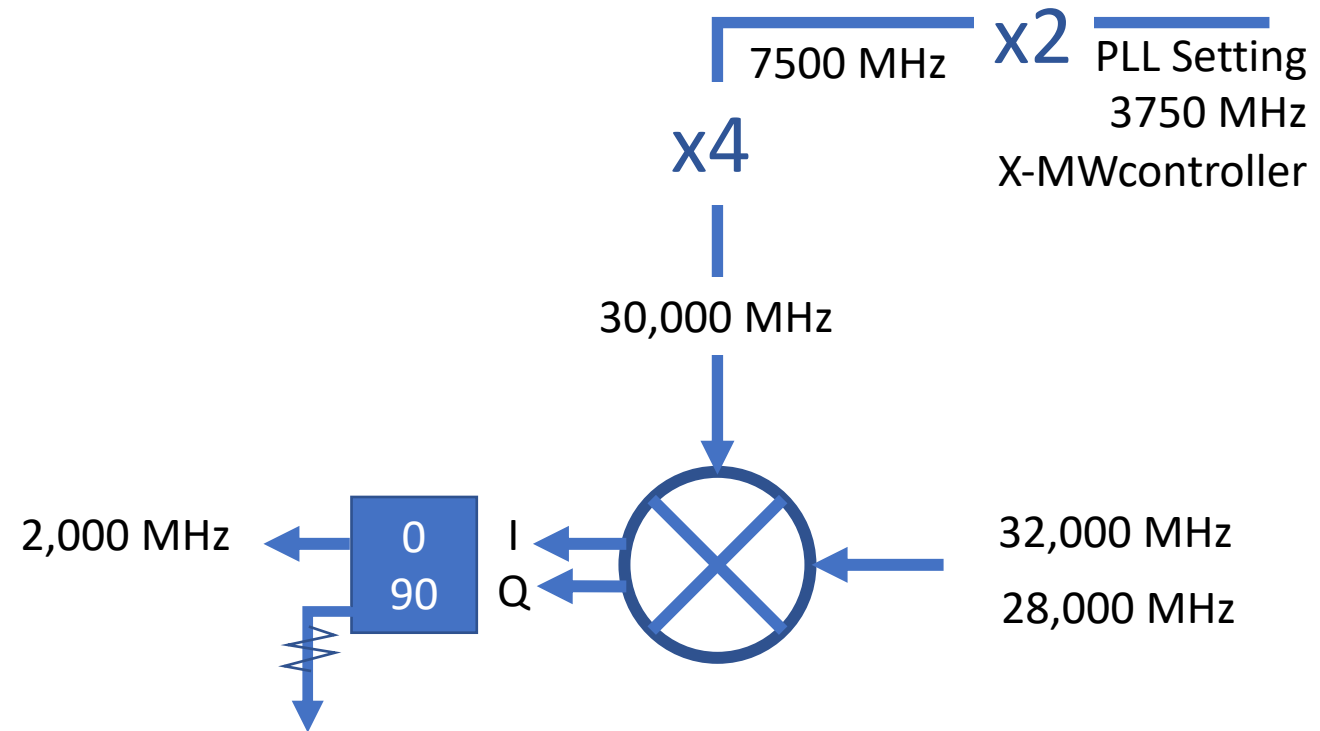
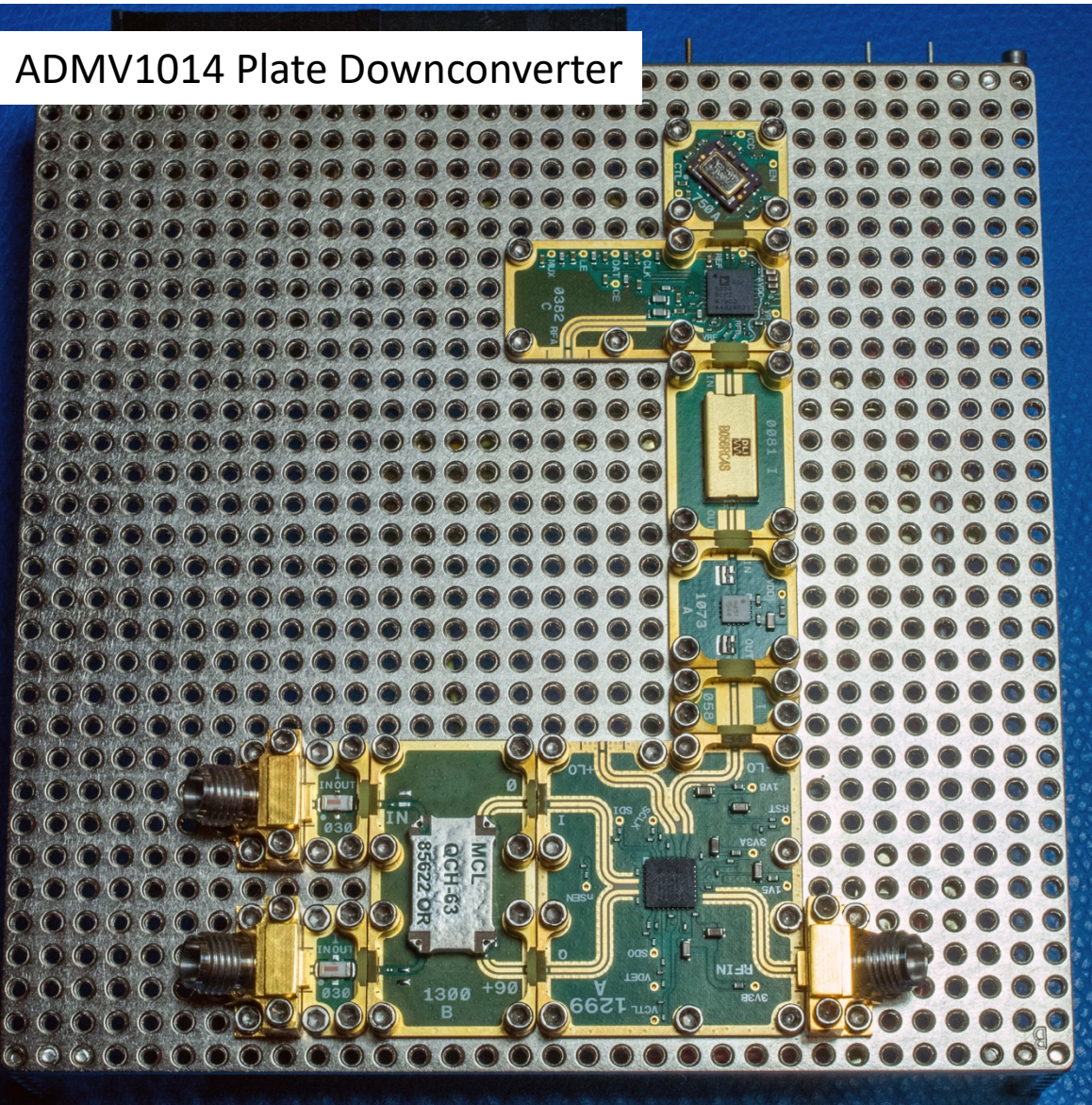
ADMV1013 Default Configuration

ADMV1013 Plate Upconverter



ADMV1014 Default Configuration

ADMV1014 Plate Downconverter



Loop Back Configuration

ADMV1014 Plate Downconverter

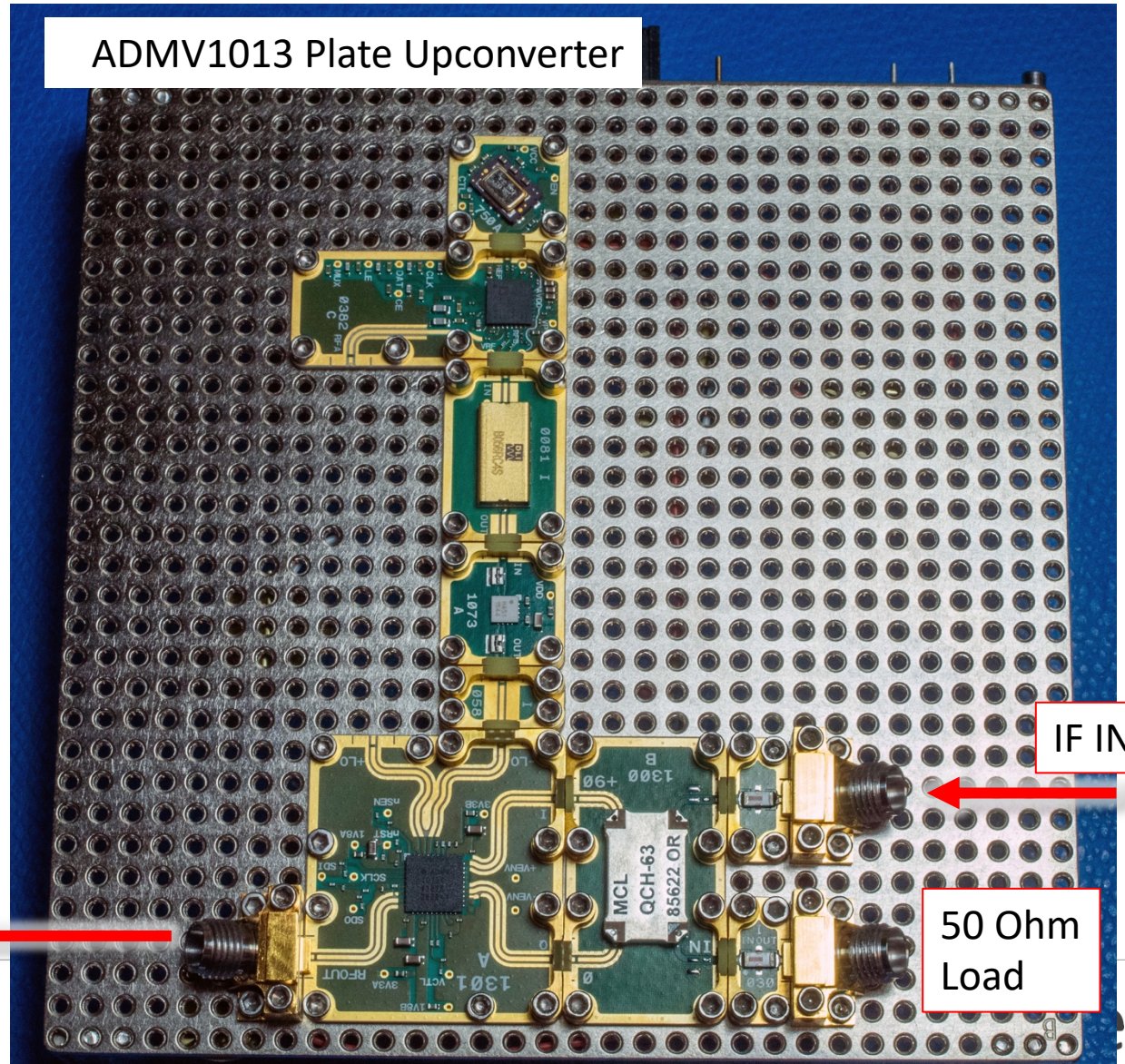
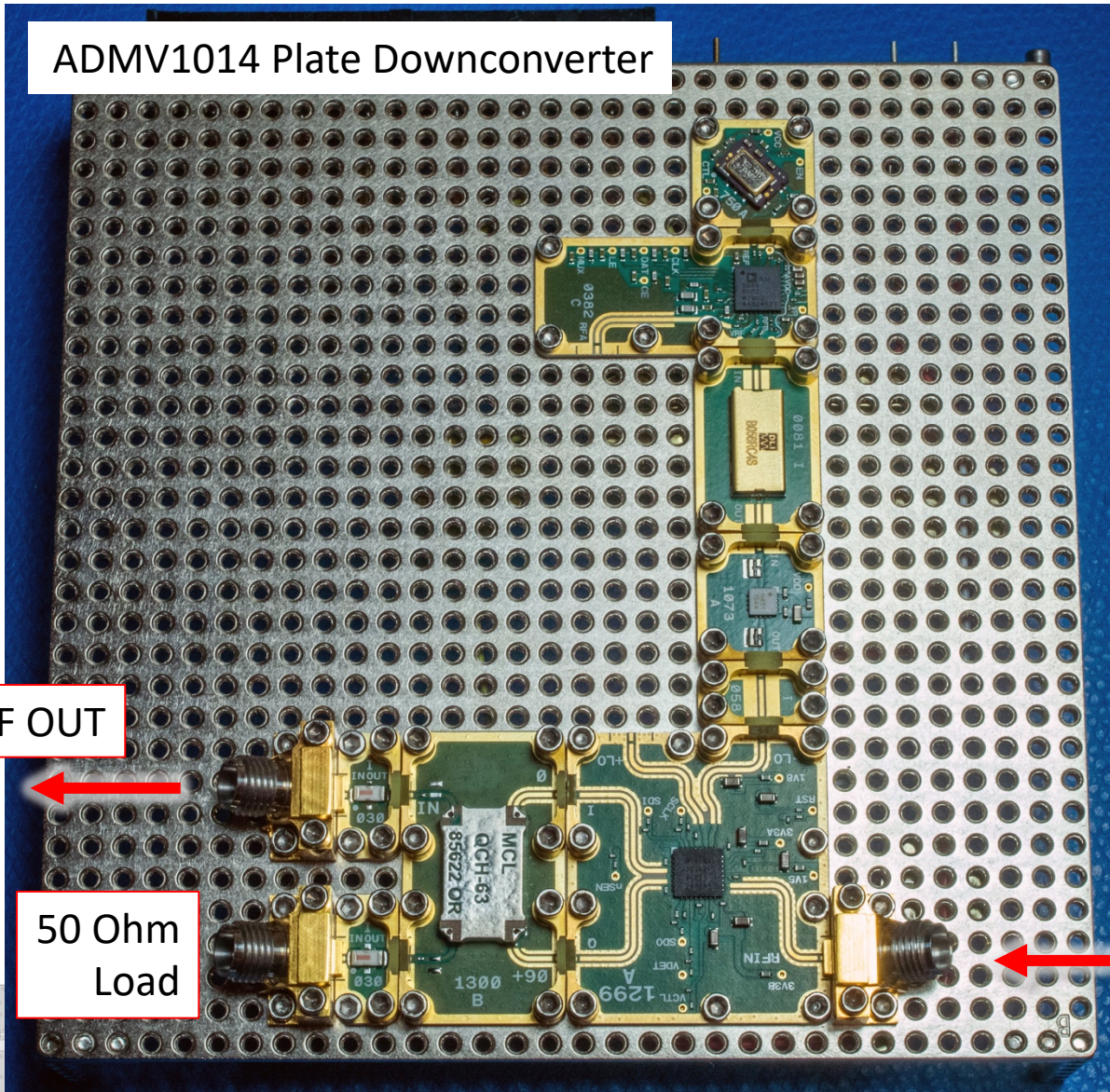
IF OUT

50 Ohm Load

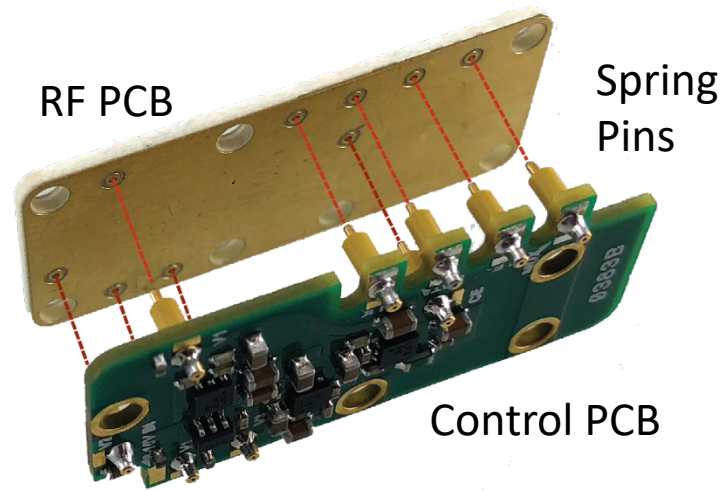
ADMV1013 Plate Upconverter

IF IN

50 Ohm Load

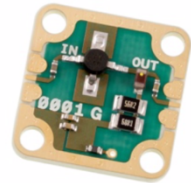


X-Microwave Essentials



X-MWsystem Vocabulary

X-MWblock
RF



X-MWprobe



Anchor



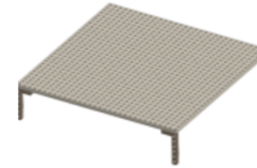
gsg Jumper



X-MWblock
Bias and Control



X-MWprotoplate



X-MWwall



X-MWlid



X-MWblocks
(bottom of plate)

1-72 x 1/8"
(0.125")



X-MWblocks (top)
X-MWprobe (short)

1-72 x 5/32"
(0.156")



Lid (top)

1-72 x 3/16"
(0.187")



X-MWanchor
Pinbridge

1-72 x 1/4"
(0.25")



X-MWProbe (tall)
X-MWwall (short)

1-72 x 3/8"
(0.375")



X-MWwall (tall)

1-72 x 1/2"
(0.5")

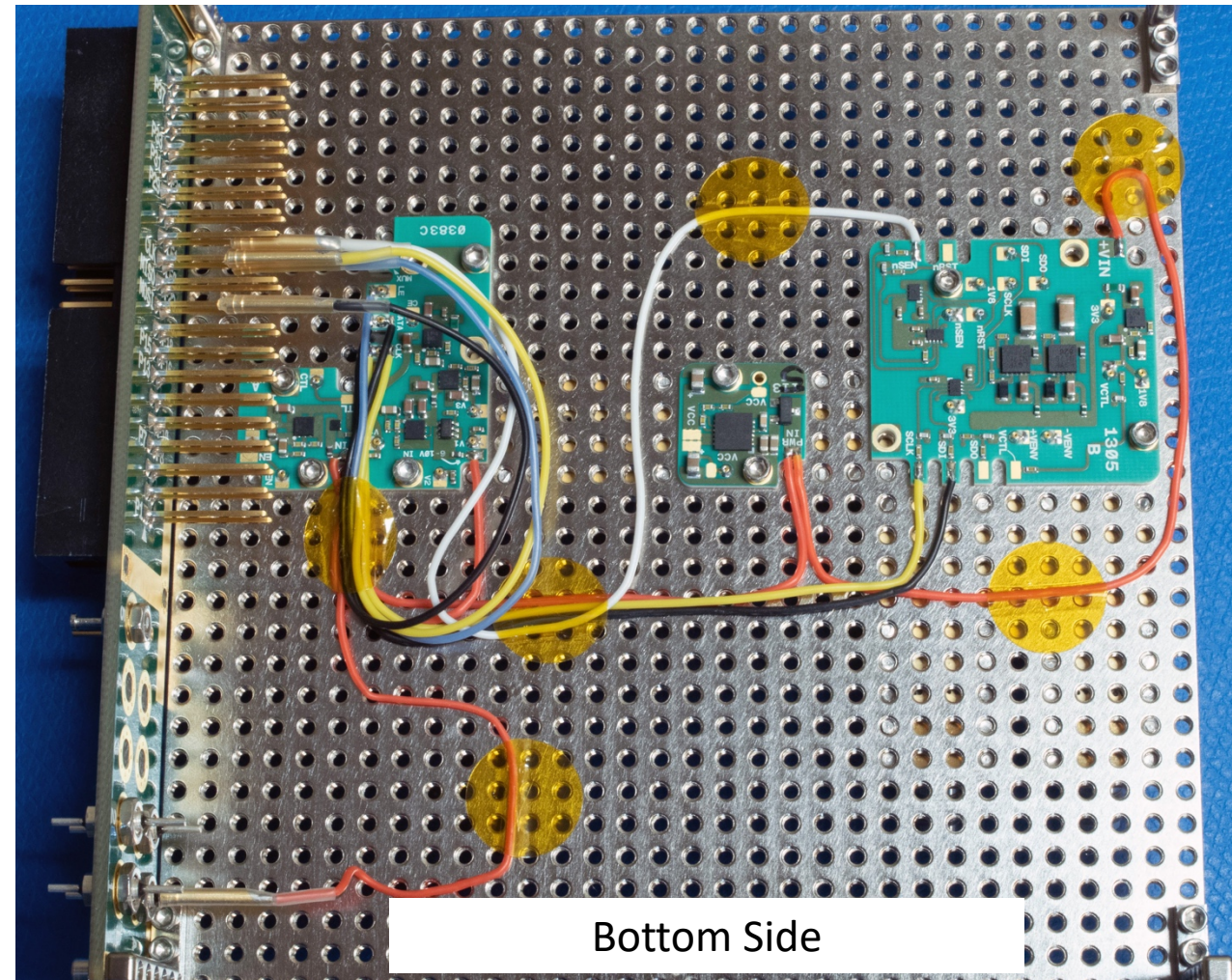
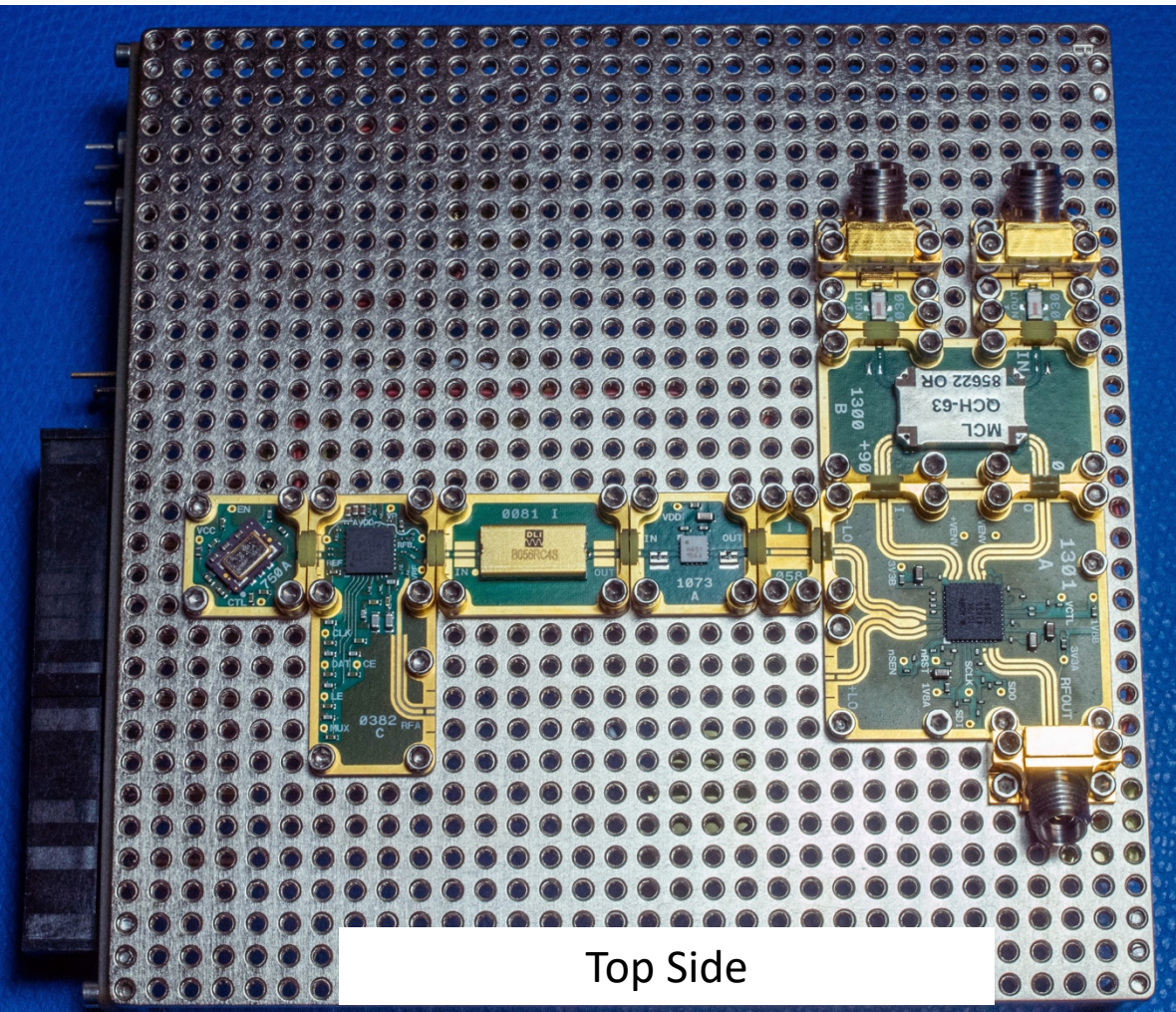


X-MWwall
Edge with Lid

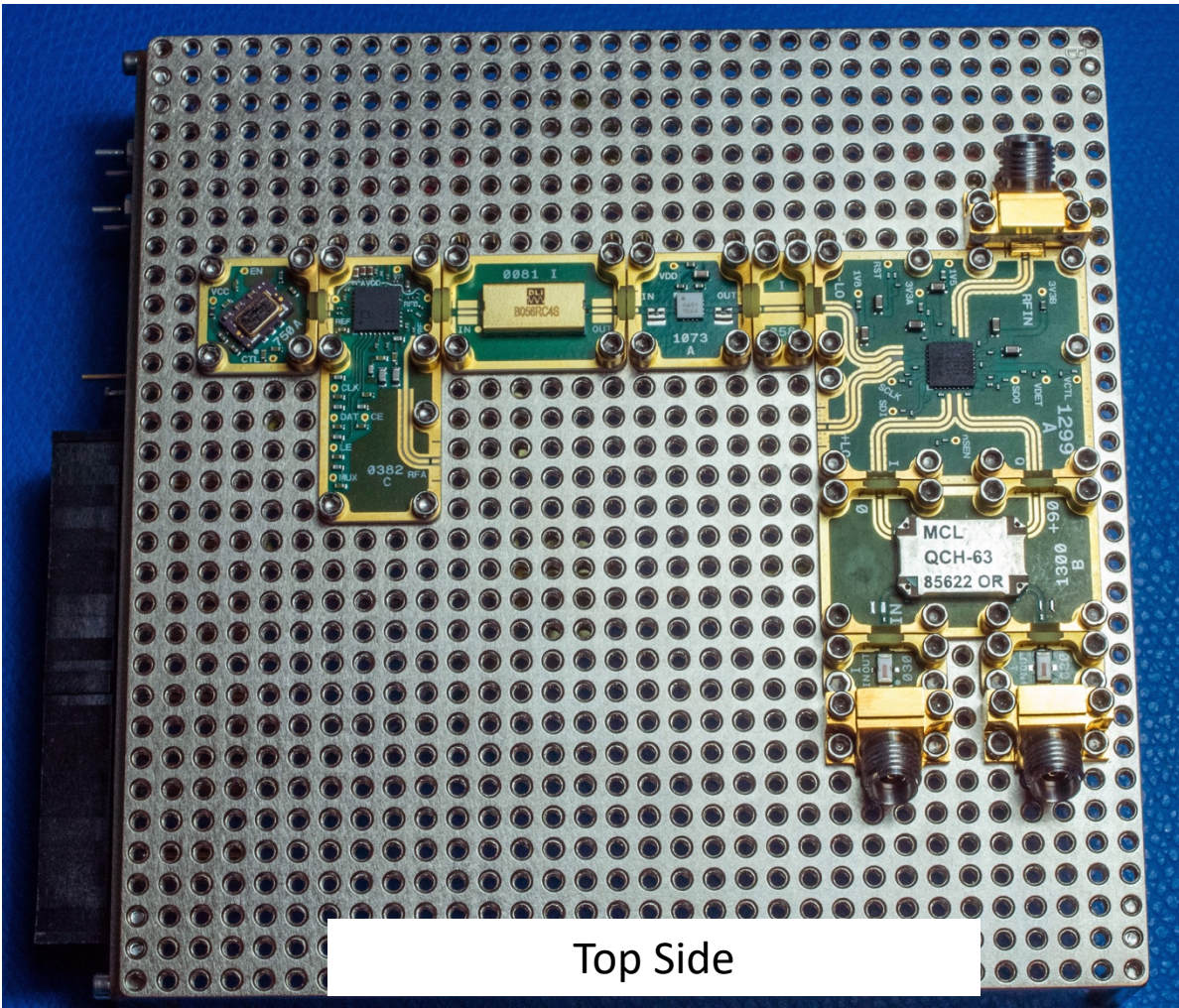
1-72 x 5/8"
(0.625")



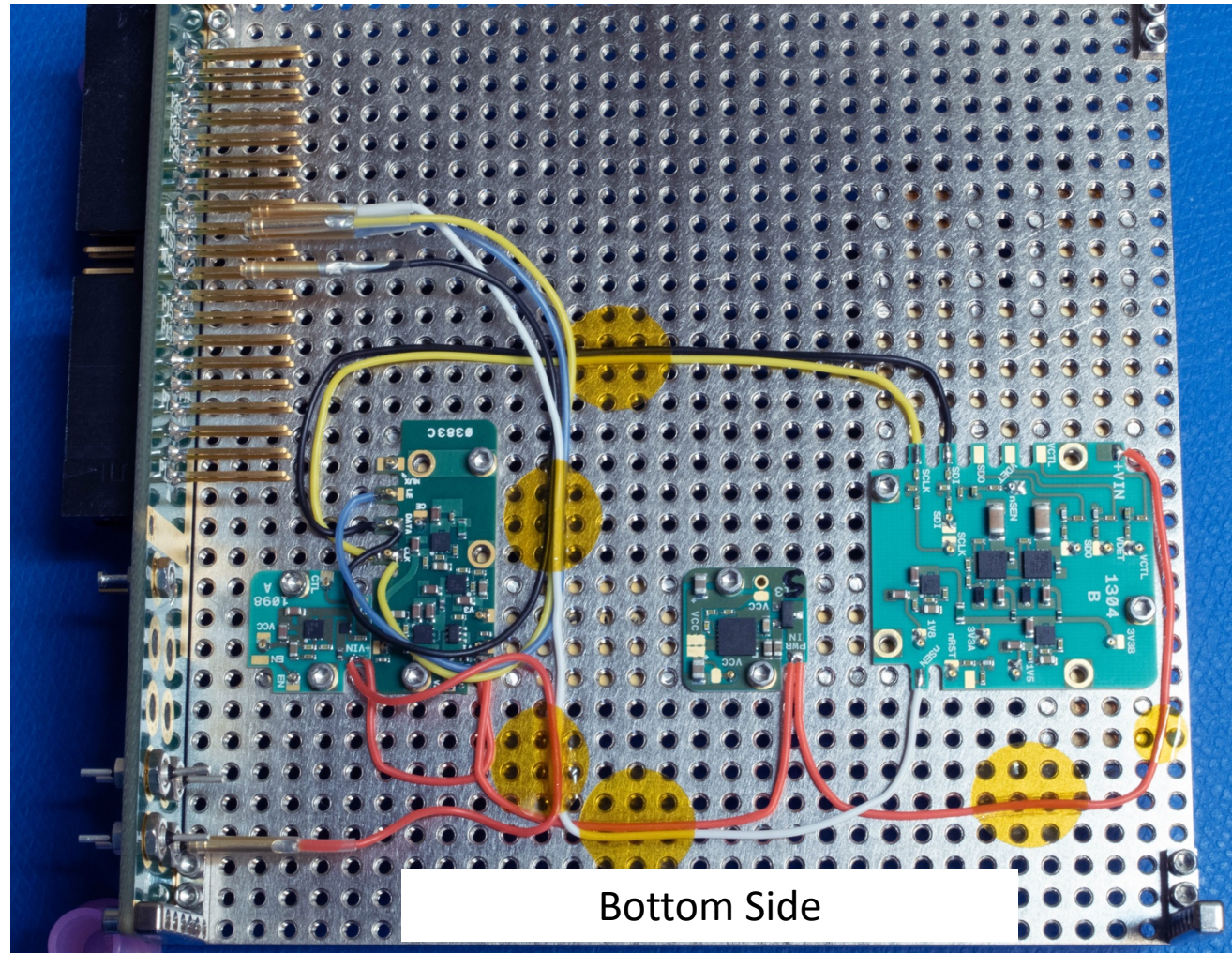
ADMV1013 Reference Photos



ADMV1014 Reference Photos



Top Side



Bottom Side