Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

General Description

The MAX11410 evaluation kit (EV kit) demonstrates the 24-bit multi-channel low-power delta-sigma ADC. The EV kit includes a graphical user interface (GUI) that provides communication from the target device to the PC. The GUI allows the user to configure all the registers and includes graphing software to display captured data and calculate the histogram and FFT.

EV Kit Contents

- MAX11410 EV kit
- Micro-USB cable

MAX11410 EV Kit Files

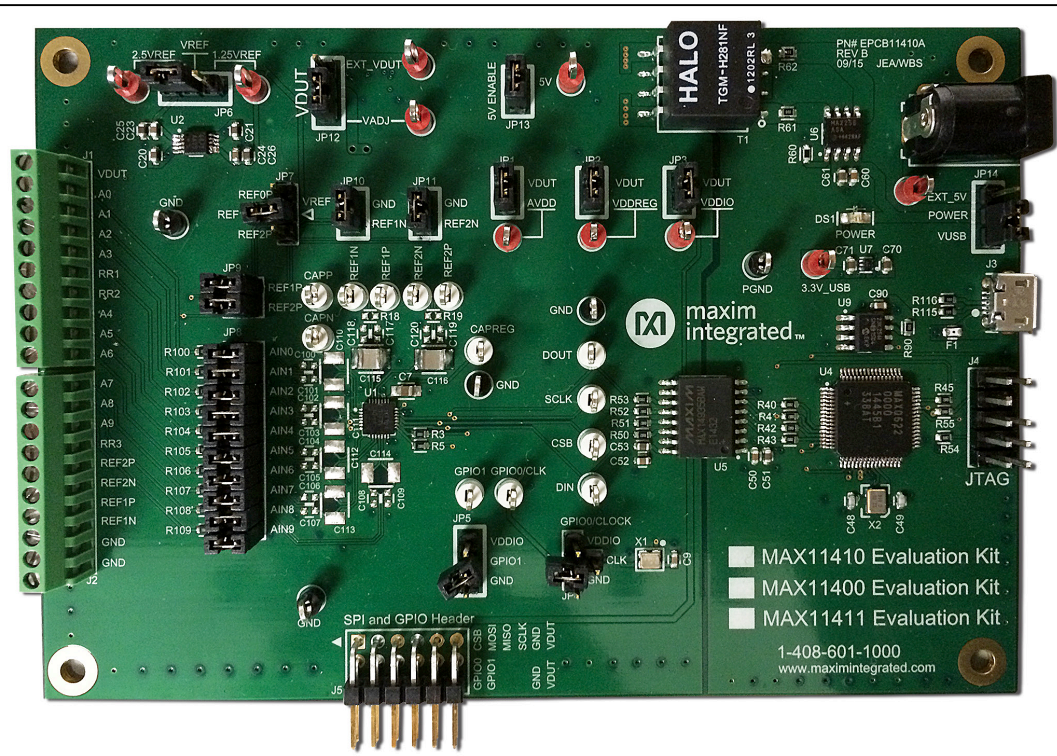
FILE	DESCRIPTION
MAX11410EVKitSetup.exe	Application Program

Features

- Easy Evaluation of MAX11410
- USB Powered
- Selectable On-Board Voltage Reference (2.5V, 1.25V)
- Optional External Clock (2.4576MHz)
- Isolated Power and Digital Communication
- Various Sample Rates and Sample Sizes
- Time Domain, Frequency Domain, and Histogram Plotting
- Savable Plots and Register Configurations
- Windows XP®, Windows® 7, Windows 8.1-Compatable Software
- Fully Assembled and Tested

Ordering Information ***appears at end of data sheet.***

MAX11410 EV Kit Photo



19-8483; Rev 0; 3/16

Quick Start

Required Equipment

- MAX11410 EV kit
- Windows XP, Windows 7, or Windows 8.1 PC
- Micro-USB cable
- Screwdriver
- Wires

Note: In the following sections, software-related items are identified by bolding. Text in **bold** refers to items directly from the EV kit software. Text in **bold and underline** refers to items from the Windows operating system.

Procedure

The EV kit is fully assembled and tested. Follow the steps below to verify board operation:

1) Ensure that the jumpers/shunts are in their default locations. Refer to Table 2.
2) Prior to starting the GUI, connect the EV kit hardware to a PC using the supplied micro-USB cable. The Power LED (DS1) should be green.
3) The EV kit hardware is configured as a HID device so Windows should automatically begin installing the necessary drivers. Once the driver installation is complete, a Windows message appears near the **System Icon** menu indicating the hardware is ready to use. If the GUI was started before this message appears then restart the GUI.
4) Visit **www.maximintegrated.com/evkitsoftware** to download the latest version of the EV kit software, MAX11410EVKitSetup.ZIP.
5) Save the EV kit software to a temporary folder. Unzip the .ZIP file and double-click the .EXE file to run the installer. A message box asking **Do you want to allow the following program to make changes to this computer?** may appear. If so, click **Yes**.
6) Follow the instructions on the installer and once complete, click **Finish**. The default location of the software is in the program files directory.
7) Launch the GUI and when it appears it should automatically connect to the hardware. The GUI should display **EV Kit Hardware Connected** in the lower right hand corner.
8) Connect a signal to the desired inputs (A0–A9) on the screw connector (J1–J2) using a wire and a screwdriver. For example, connect the 1.25V_{REF} testpoint to A2.
9) In the GUI on the **ADC Config** tab, select **AINP** to AIN2 and **AINN** to GND for the **Channel MUX**.
10) Click **Convert** and then **Click Read Data and Status** to see the converted data.

Detailed Description

Software Startup

When the software is started, it searches for the EV kit hardware and connects to it if found. If connection to the EV kit is successful, the GUI displays **EV Kit Hardware Connected** in the status bar's lower-right corner. Then it writes default registers settings shown in Table 1 and reads all the registers to display on the GUI.

Status Log

The **Status Log** group box below the tabs displays all the actions the GUI performs. When an action is requested, the log confirms the action or shows an error message. The log can be cleared by pressing the **Clear Log** button.

Table 1. Startup GUI Registers Settings

SETTING	VALUE
Digital Filter	60Hz SINC4
Sample Rate	59.8sps
MUX - AINP	AIN2
MUX_AINN	GND
Channel	0
Conversion Mode	Continuous

ADC Config Tab

The **ADC Config** tab provides an interface for configuring the IC from a functional perspective. The **Block** tab (Figure 1) provides for configuration of the input MUX, input path, data format, filtering, calibration, reference current sources, V_{BIAS}, and power. To read all the configuration settings, click the **Read All** button in the **Serial Interface** block. When a setting is changed, the register associated with that setting is automatically written. The **Status Log** at the bottom of the GUI shows the value and register that was changed. Once the configurations are completed, start conversions by clicking **Convert** in the **Serial Interface** block. To read the data and status, click **Read Data and Status** on the lower-right of the GUI. This, first, reads the status register and then the data registers for the channel selected, displaying the value in volts and hex. For the data in volts to be calculated correctly, the **Reference Voltage** numeric box on the left should match the reference applied on the hardware. Note: All voltage values are input referred.

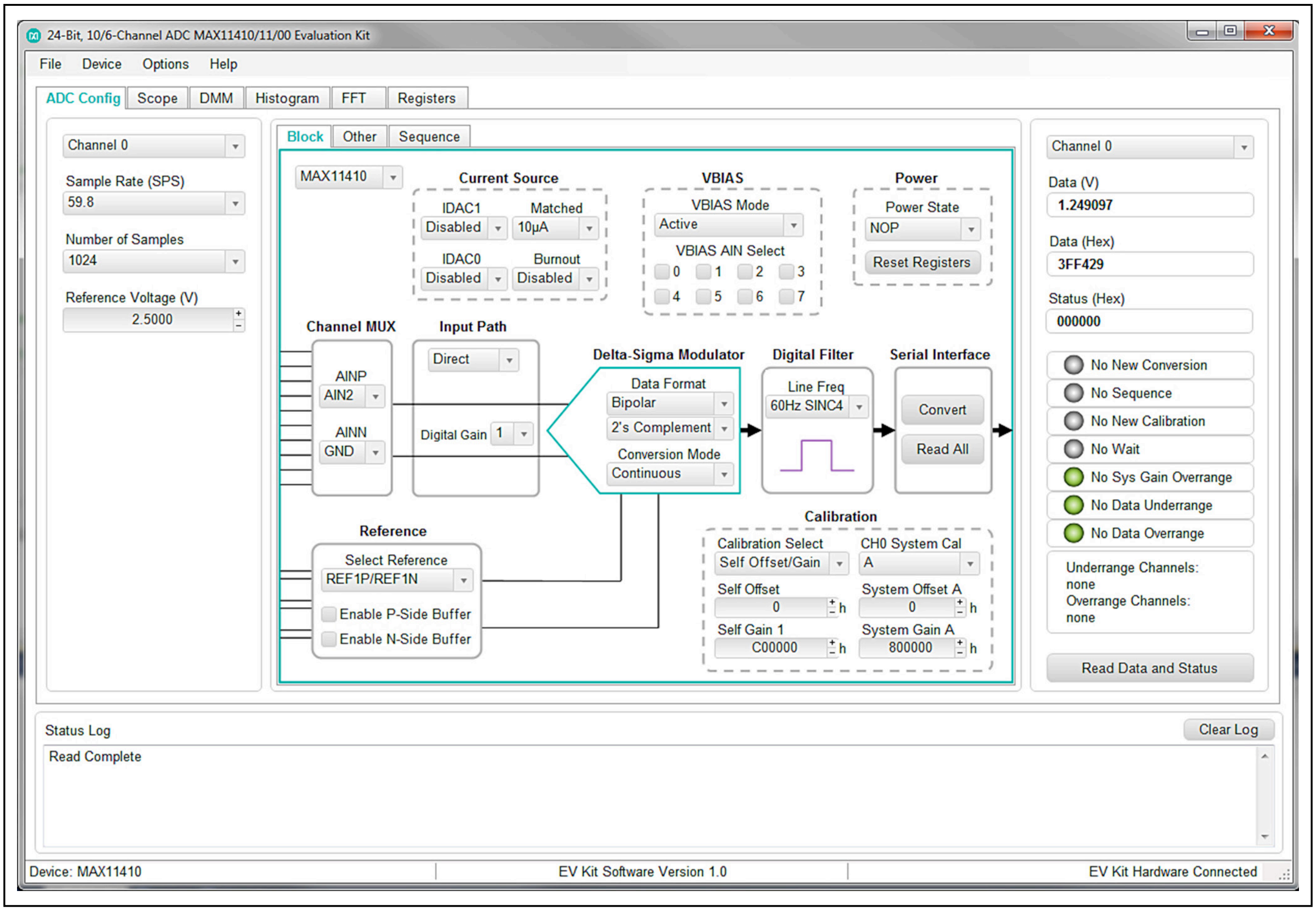


Figure 1. Quick-Start Connection Diagram

Other Tab

The **Other** tab sheet (Figure 2) displays the thresholds, wait, GPIO, clock, and INT options. To read all the values on the tab, click **Read All** on the bottom right. The **Channel Thresholds** table allows reads/writes to the upper and lower threshold. The display unit can be changed to LSB, V, mV, or uV using the **Threshold Units** drop-down list. The **TUR INT** and **TOR INT** bits for the under and over range interrupts can be enabled by checking the checkbox for the channels desired.

To start a wait time, enter the desired decimal value in the **Wait** and **Wait Extension** numeric boxes. Note: Entering a value in the **Wait** numeric box does not perform a write to the part. Click **Calculate Wait Time** to see the equivalent wait time of these decimal values based on a 2.4576MHz clock. Click **Start Wait Time** to write the value in the **Wait** numeric box and begin the wait time.

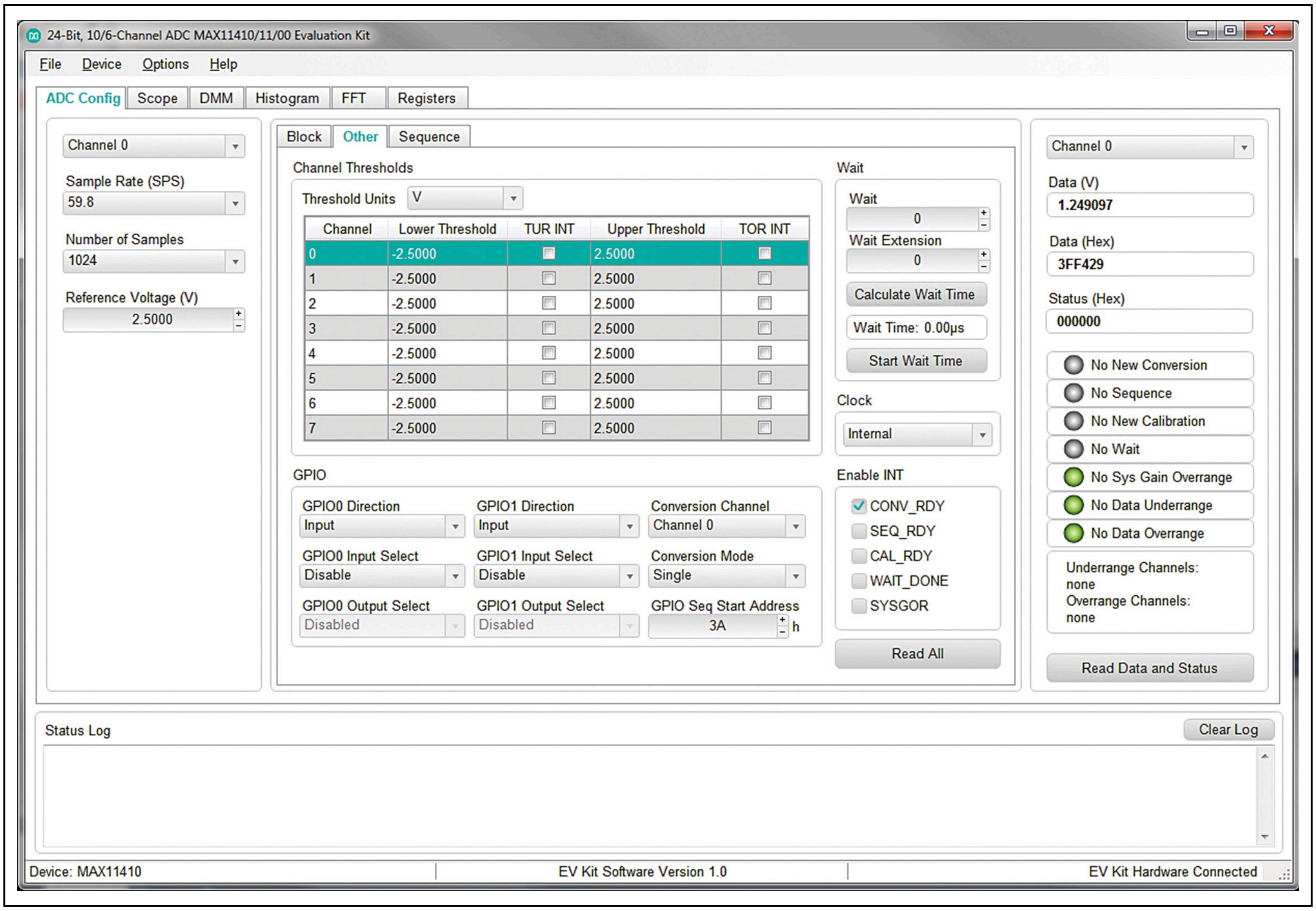


Figure 2. EV Kit Software (ADC Config Tab > Other)

Sequence Tab

The **Sequence** tab sheet (Figure 3) allows read/writes to the microcode registers (uC0-uC52). Click **Read All** to read all microcode registers. To write a register first select the hex value in the **Value (Hex)** column then type the desired hex value and press Enter on the keyboard. To start the sequence, enter the hex address of the microcode to start at in the **Sequence Start Address** and then click **Start Sequence**. During a sequence, the current address of the executing microcode can be read by clicking **Read Current Address**.

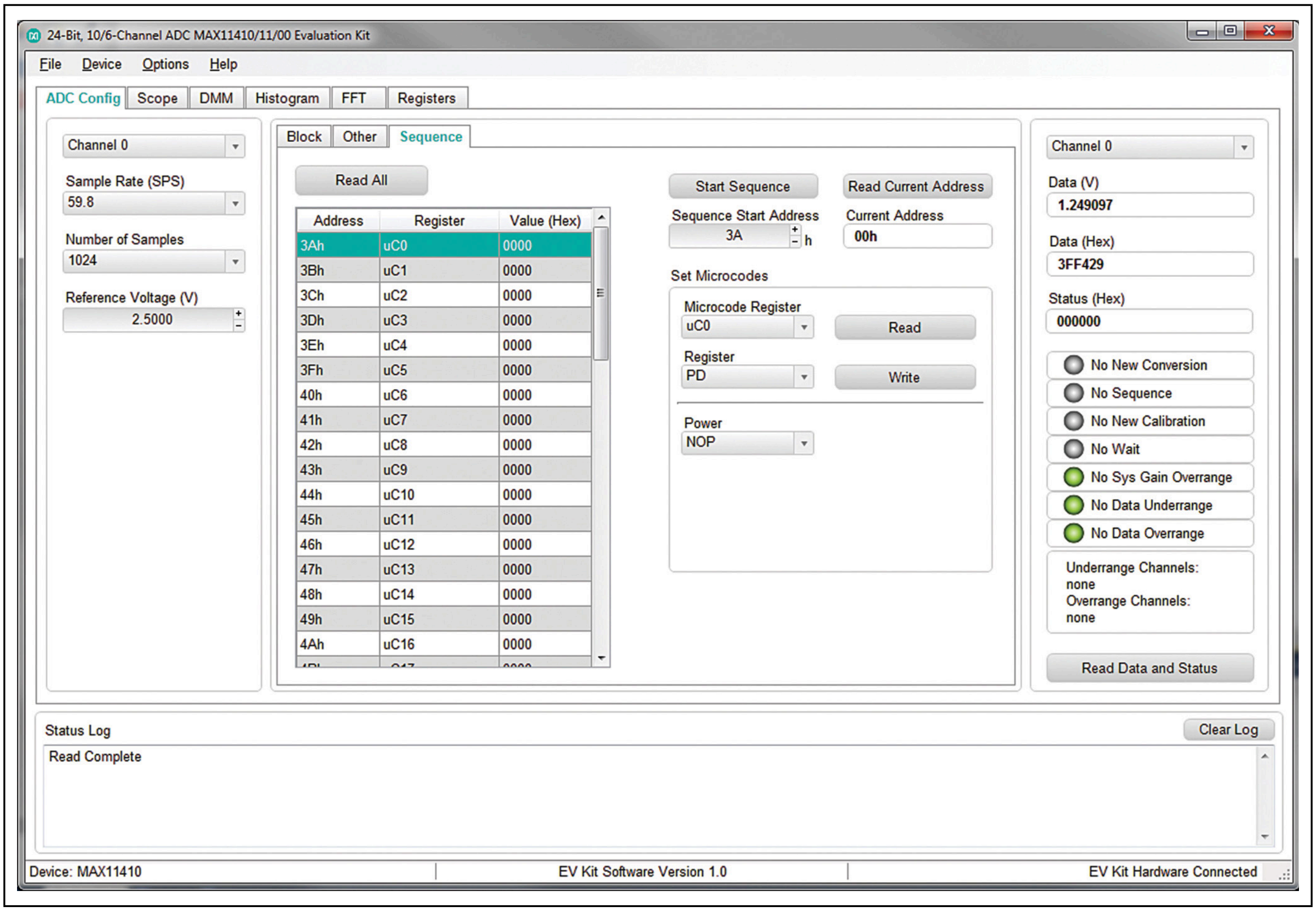


Figure 3. EV Kit Software (ADC Config Tab > Sequence)

Save/Load ADC Configuration

In the File menu, there are options to save or load a configuration file. **Save ADC Config As..** and **Save ADC Config** read the registers from the connected MAX11410 EV kit and saves these values to an XML file. This includes the microcode registers as well. **Load ADC Config** gets register values from an XML file and writes them to the MA11410 EV kit.

Scope Tab

The **Scope** tab sheet (Figure 4) is used to capture data and display it in the time domain. Sample rate and number of samples can also be set in this tab if they were not appropriately adjusted in other tabs. The **Display Unit** drop-down list allows LSB and voltages. Once the desired configuration is set, click on the **Capture** button. The right side of the tab sheet displays details of the waveform, such as average, standard deviation, maximum, minimum, and fundamental frequency. To save the captured data to a file, go to **Options > Save Graph > Scope**. This saves the setting on the left and the data captured to a csv file.

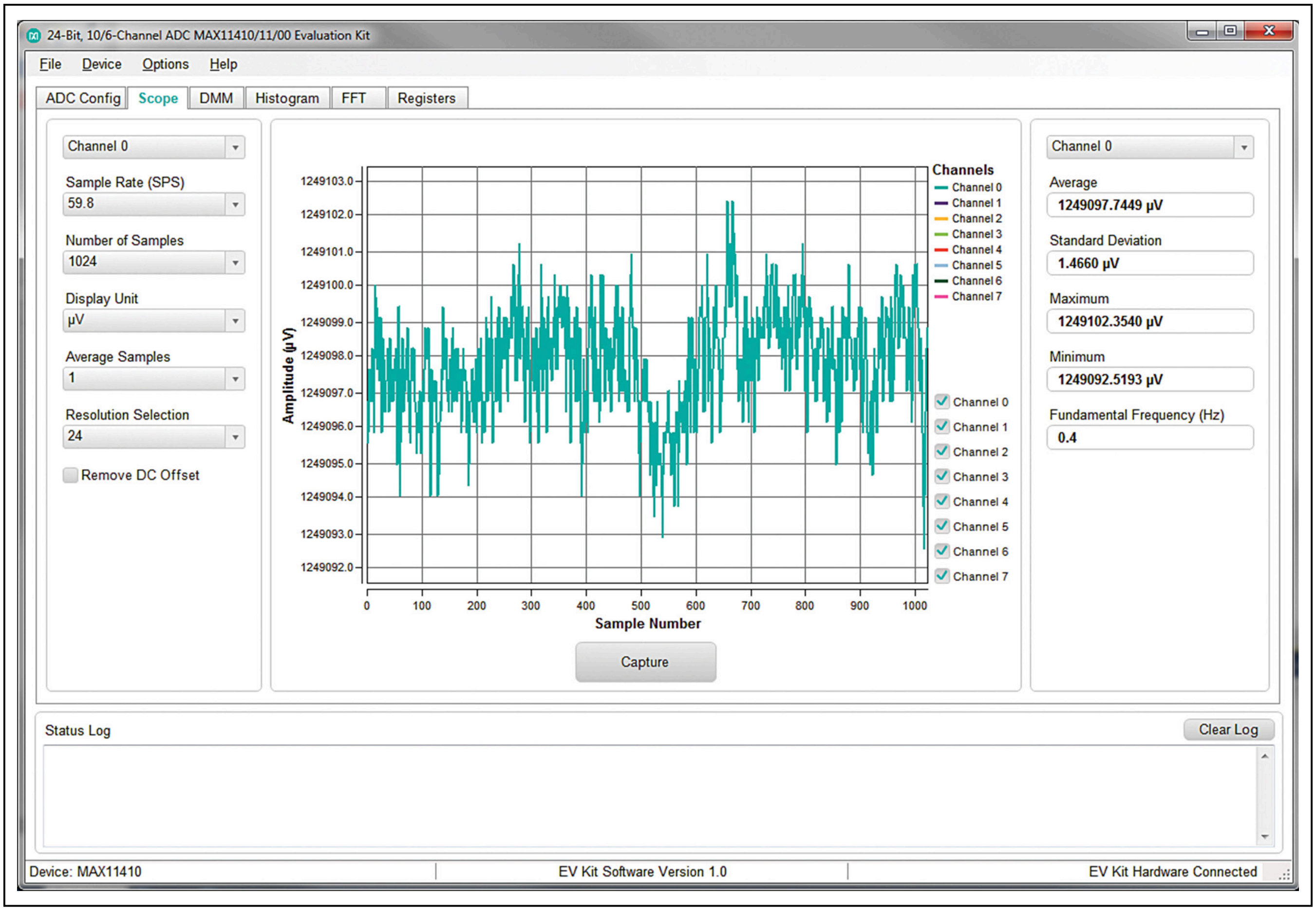


Figure 4. EV Kit Software (Scope Tab)

DMM

The **DMM** tab sheet (Figure 5) provides captured data as a digital multimeter. Once the desired configuration is set, click the **Capture** button.

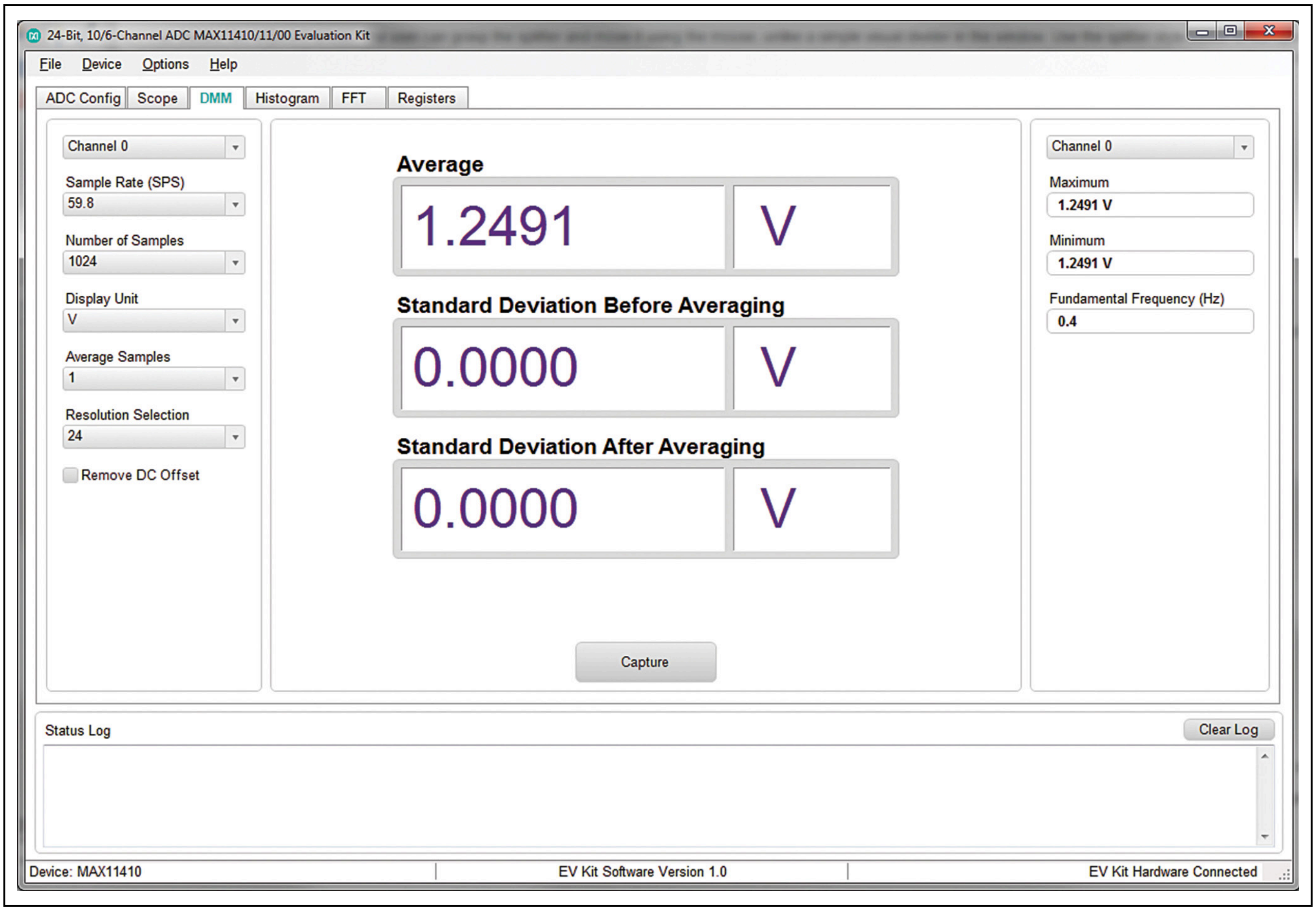


Figure 5. EV Kit Software (DMM Tab)

Histogram

The **Histogram** tab sheet (Figure 6) is used to display a histogram of the captured data. Sampling rate and number of samples can also be set in this tab if they were not appropriately adjusted in other tabs. Once the desired configuration is set, click on the **Capture** button. The right side of the tab sheet displays details of the histogram such as average, standard deviation, maximum, minimum, peak-to-peak noise, effective resolution, and noise-free resolution. To use this histogram feature, uncheck the **Disable Histogram** checkbox. To save the histogram data to a file, go to **Options > Save Graph > Histogram**. This saves the setting on the left and the histogram data captured to a csv file.

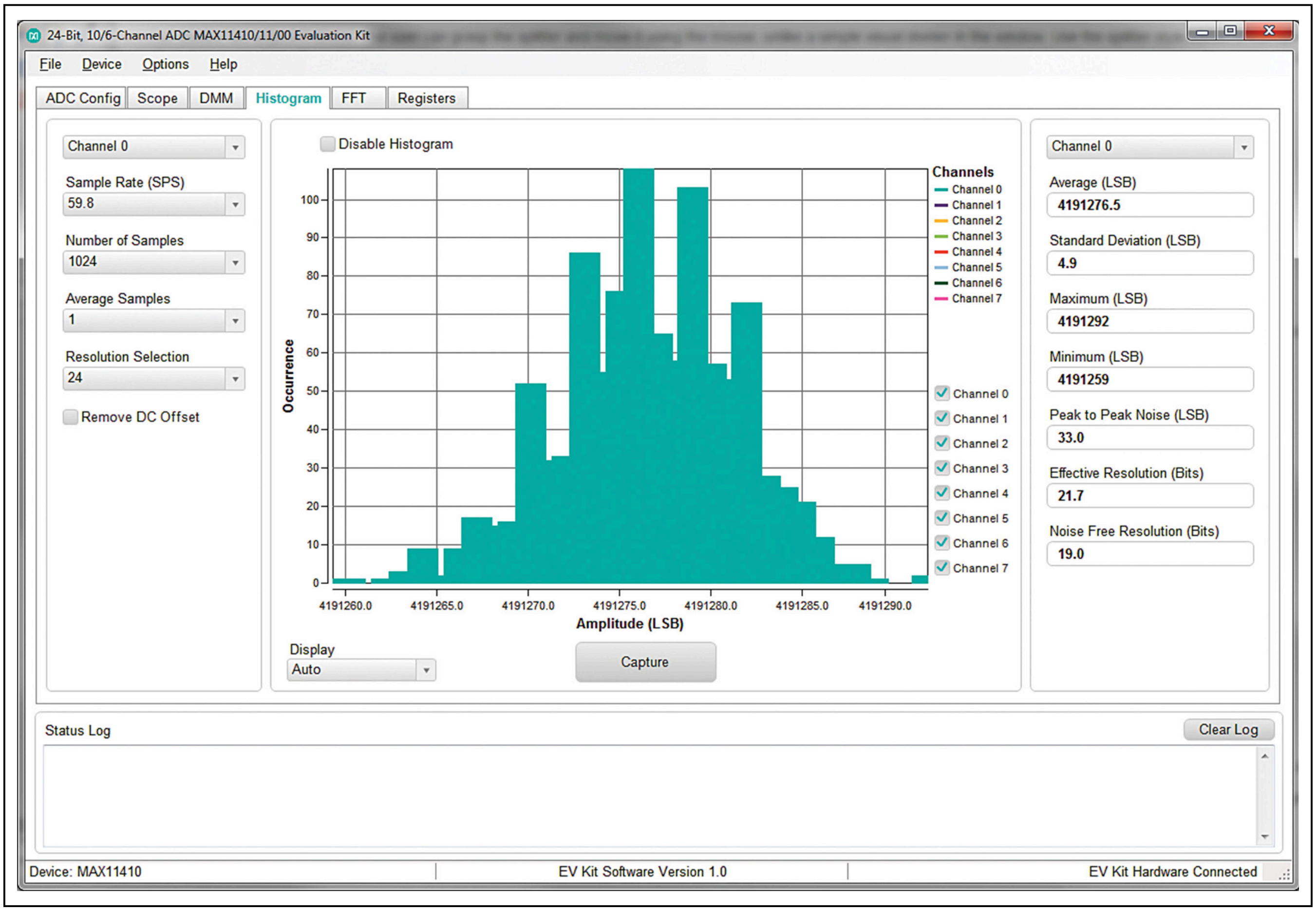


Figure 6. EV Kit Software (Histogram Tab)

FFT

The **FFT** tab sheet (Figure 7) is used to display the frequency domain FFT of the captured data. Sample rate and number of samples can also be set in this tab if they were not appropriately adjusted in other tabs. Once the desired configuration is set, click on the **Capture** button. The right side of the tab displays the performance based on the FFT, such as fundamental frequency, THD, SNR, SINAD, SFDR, ENOB, and noise floor. To save the FFT data to a file, go to **Options > Save Graph > FFT**. This saves the setting on the left and the FFT data captured to a csv file.

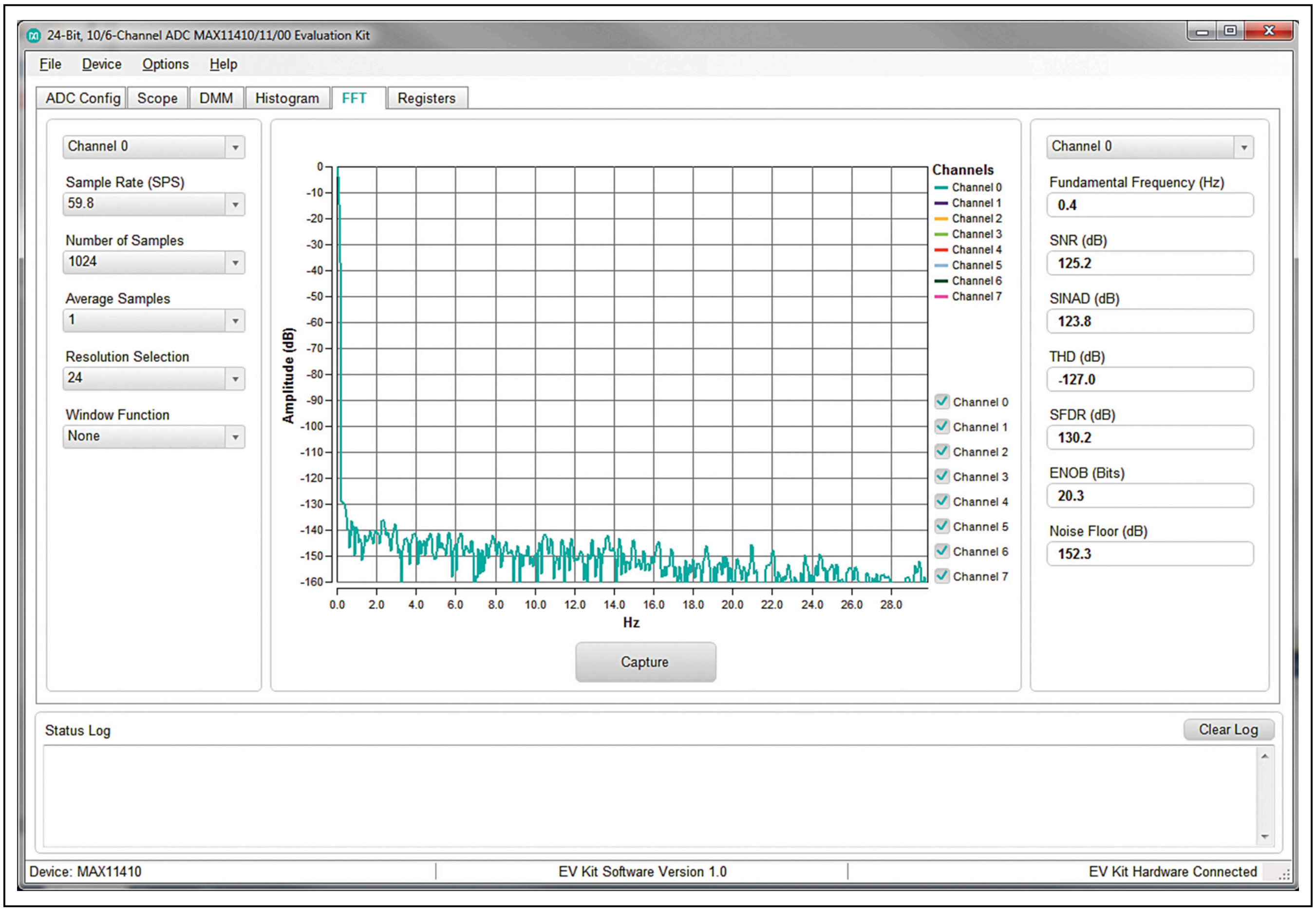


Figure 7. EV Kit Software (FFT Tab)

Registers

The **Registers** tab sheet (Figure 8) allows the user to read/write to the ADC registers in hex format. Click **Read All** to read all registers and refresh the window with the register settings. To write a register first select the hex value in the **Value (Hex)** column then type the desired hex value and press Enter on the keyboard. The **Bit Description** section shows the format of the register selected in the **Registers** table.

Detailed Description of Hardware

The EV kit hardware includes the MAX11410 ADC, external reference (MAX6072), digital isolator (MAX14935), microcontroller (MAXQ622), isolated power, and jumpers to customize the configuration. See the links at the end of this data sheet for component information, PCB layout diagrams, and schematic.

Reference Voltage

The ADC has three pairs of REFP/REFN pins to select as reference pins. In the GUI, go to the **Block** tab on the **ADC Config** tab and select the desired reference pins in the **Reference** block. When using the on-board voltage reference, move JP7 to the same REFXP selected in the GUI. If using REF0N, connect A1 on the screw terminal to GND or remove the AIN1 jumper on JP8 and connect AIN1 to GND. The default reference value is set to 2.5V. The EV kit also provides a reference of 1.25V by moving JP6 to $1.25V_{REF}$ and changing the **Reference Voltage** to 1.25V on the **ADC Config** tab.

If using a user-supplied voltage reference, remove all jumpers on JP7, JP10, and JP11 and supply the reference on the REFXP and REFXN testpoints. If using REF0P/REF0N connect the reference to A0/A1 on the screw terminal or remove the AIN0/AIN1 jumpers on JP8 and supplied the voltage on AIN0/AIN1 pins. In the GUI, change the **Reference Voltage** on the **ADC Config** tab to the user-supplied voltage.

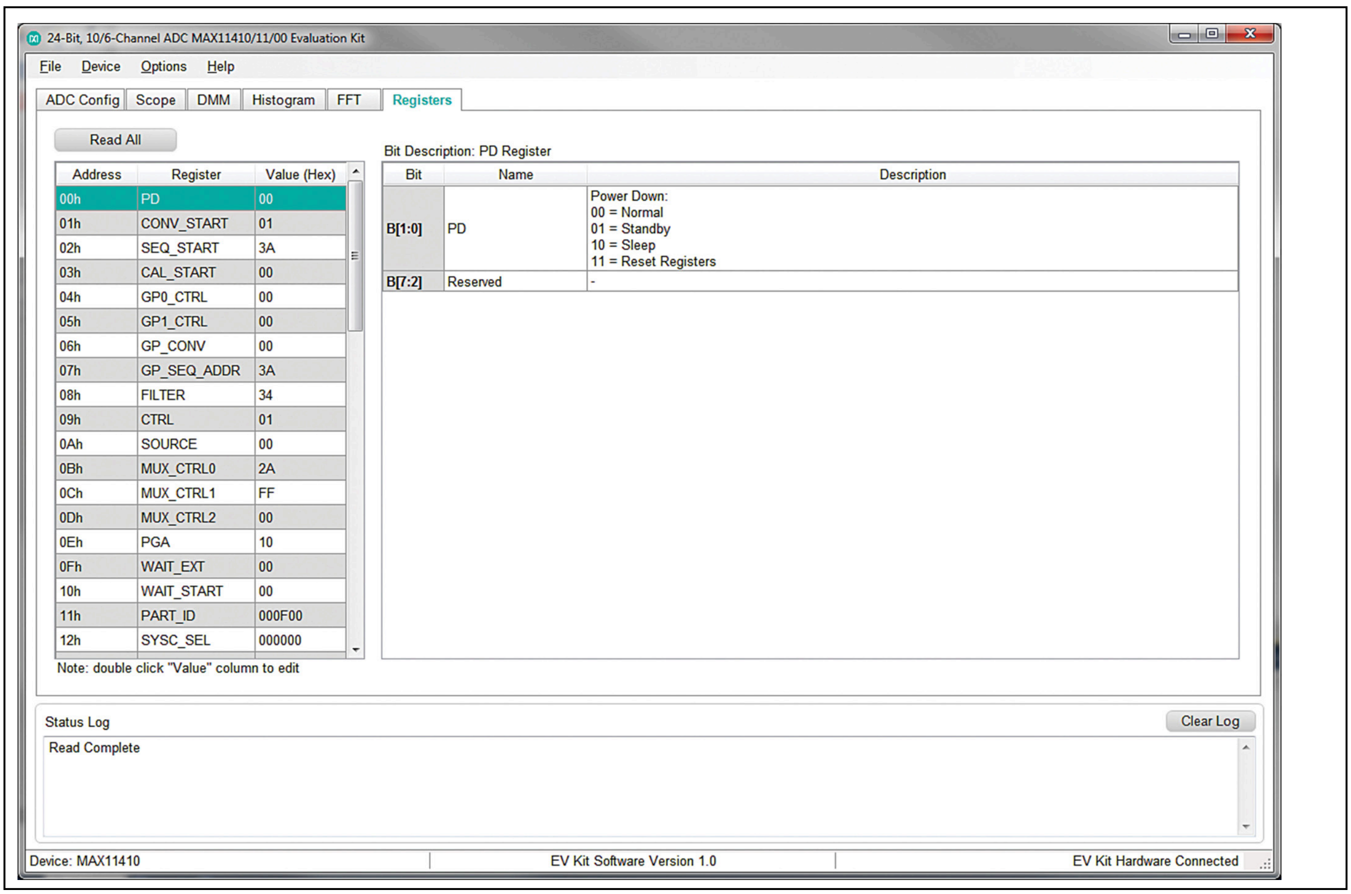


Figure 8. EV Kit Software (Registers Tab)

ADC Inputs

The ADC inputs at the screw terminal (J1, J2) have series 1kΩ input protection resistors. To bypass these resistors, remove the jumpers on JP8 and connect to the AINX pin on the right.

External Clock

The ADC can be configured to use an external clock. In the GUI, go to the **Other** tab on the **ADC Config** tab and change the clock to **External** using the **Clock** drop-down list. To use the on-board oscillator, move a jumper to the CLK position on JP4. To connect a user-supplied clock, remove any jumper on JP4 and connect the signal to the GPIO0/CLK testpoint.

GPIO

Testpoints and jumpers are provided for the two GPIO signals. To set the input/output modes of the GPIO go to the **Other** tab on the **ADC Config** tab. If the GPIOs are set as inputs the jumpers JP5 and JP4 can be used to set the inputs high or low. See Table 2. Each GPIO has a 100kΩ resistor to GND on the EV kit. GPIO0 has an added option be being set to an external clock. See the External Clock section.

User-Supplied SPI

To evaluate the ADC on this EV kit with a user-supplied SPI bus, disconnect digital signals from the isolator by removed resistors R50–R53. Apply the user-supplied SPI signals to CSB, MOSI, MISO, and SCLK at the SPI and GPIO Header (J5). Make sure the return ground is connected to GND on the EV kit.

EV Kit Power

By default the EV kit is configured to power from the USB 5V. To power the board externally, first disconnect the USB. Then move JP14 to EXT_5V and connect 5V to the EXT_5V testpoint or to the power jack J6. Connect the USB for communication with the GUI.

V_{DUT} Power

V_{DUT} powers the ADC and one side of the digital isolator. By default V_{DUT} is connected to V_{ADJ}, which is the output of an adjustable LDO (MAX8842) set to 3.3V. To adjust V_{ADJ}, change resistors R80 and R81 according to the equation below for the desired output. Ensure V_{ADJ} is within the range 3.6V to 2.8V as the minimum voltage for the MAX6072 is 2.8V and the maximum voltage for the MAX11410 is 3.6V.

$$V_{ADJ} = 1.225V \times (R80/R81 + 1)$$

V_{DUT} can also be power externally with EXT_VDUT test point. To power externally, move JP12 to EXT_DUT and provide a voltage (3.6V to 2.7V) on the test point.

Table 2. Description of Jumpers

JUMPER	JUMPER NAME	JUMPER POSITION	DESCRIPTION
JP1	AV_{DD}	Short*	Connects on-board V_{DUT} to AV_{DD}
JP2	V_{DDREG}	Short*	Connects on-board V_{DUT} to V_{DDREG}
JP3	V_{DDIO}	Short*	Connects on-board V_{DUT} to V_{DDIO}
JP4	GPIO0/CLK	V_{DDIO}	Sets GPIO0 high (V_{DDIO}) Note 1
		CLK	Provides an external clock to GPIO0/CLK
		GND	Sets GPIO0 low (GND)
JP5	GPIO1	V_{DDIO}	Sets GPIO1 high (V_{DDIO}) Note 1
		GND	Sets GPIO1 low (GND)
JP6	V_{REF}	$2.5V_{REF}$*	Sets V_{REF} to 2.5V
		$1.25V_{REF}$	Sets V_{REF} to 1.25V

Table 2. Description of Jumpers (continued)

JUMPER	JUMPER NAME	JUMPER POSITION	DESCRIPTION
JP7	REFP	REF0P	Sets REF0P(AIN0) to V_{REF}
		REF1P*	Sets REF1P to V_{REF}
		REF2P	Sets REF2P to V_{REF}
JP8	AINX	Short*	Connects AINX input to screw terminal through 1kΩ resistor
JP9	REFXP	Short*	Connects REFXP input to screw terminal through 1kΩ resistor
JP10	REF1N	Short*	Sets REF1N to GND
JP11	REF2N	Short*	Sets REF2N to GND
JP12	V_{DUT}	EXT_VDUT	V_{DUT} is powered from external EXT_VDUT test point
		V_{ADJ}*	V_{DUT} is powered from on-board V_{ADJ}
JP13	5V ENABLE	Short*	Enabled 5V from transformer T1
JP14	POWER	EXT_5V	Board is powered from external EXT_5V test point or J6 power jack
		V_{USB}*	Board is powered from USB 5V

Component Information, PCB Layout, and Schematic

See the following links for component information, PCB layout diagrams, and schematic.

- MAX11410 EV BOM
- MAX11410 EV PCB Layout
- MAX11410 EV Schematic

Ordering Information

PART	TYPE
MAX11410EVKIT#	EV Kit

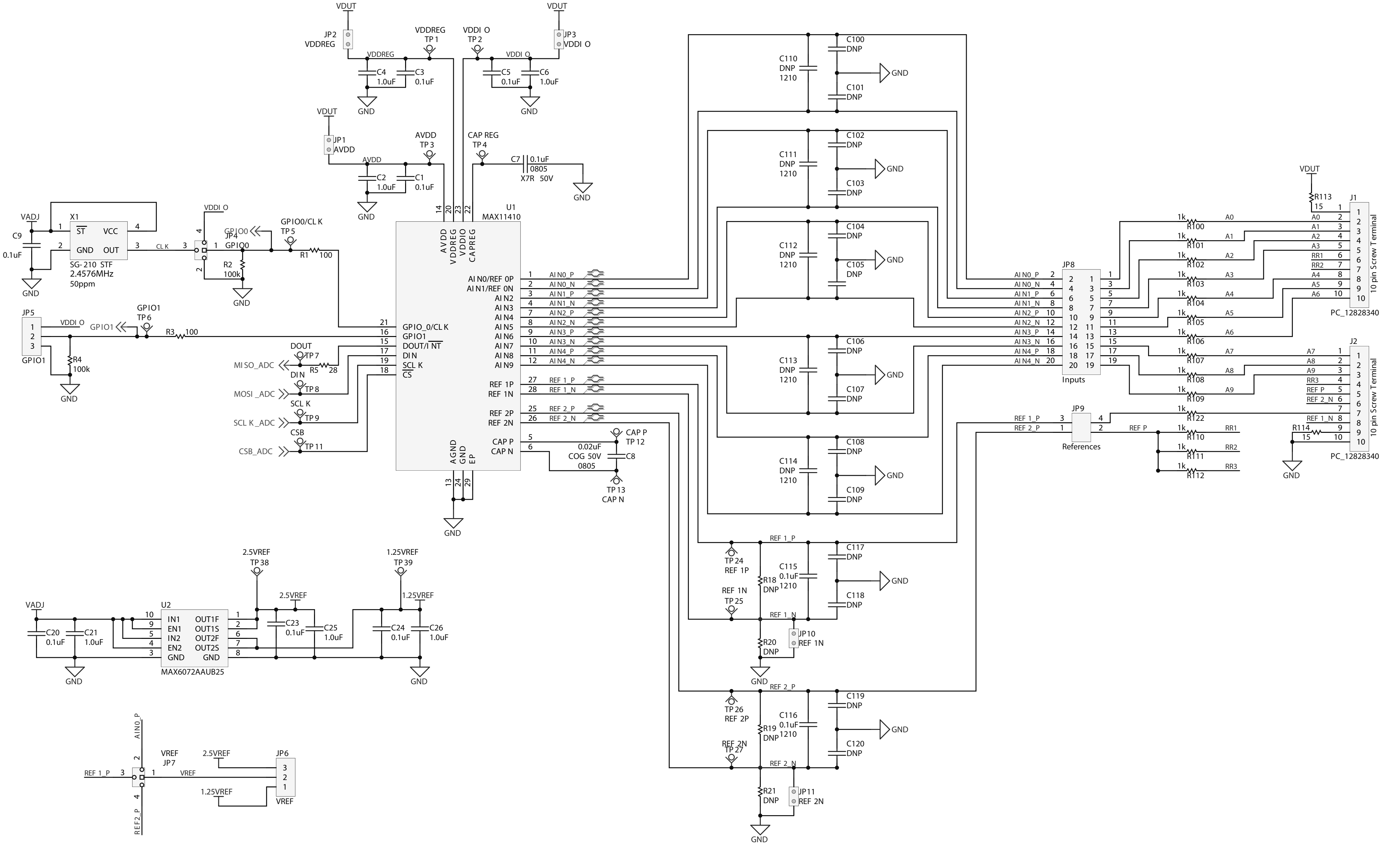
#Denotes RoHS compliant.

Revision History

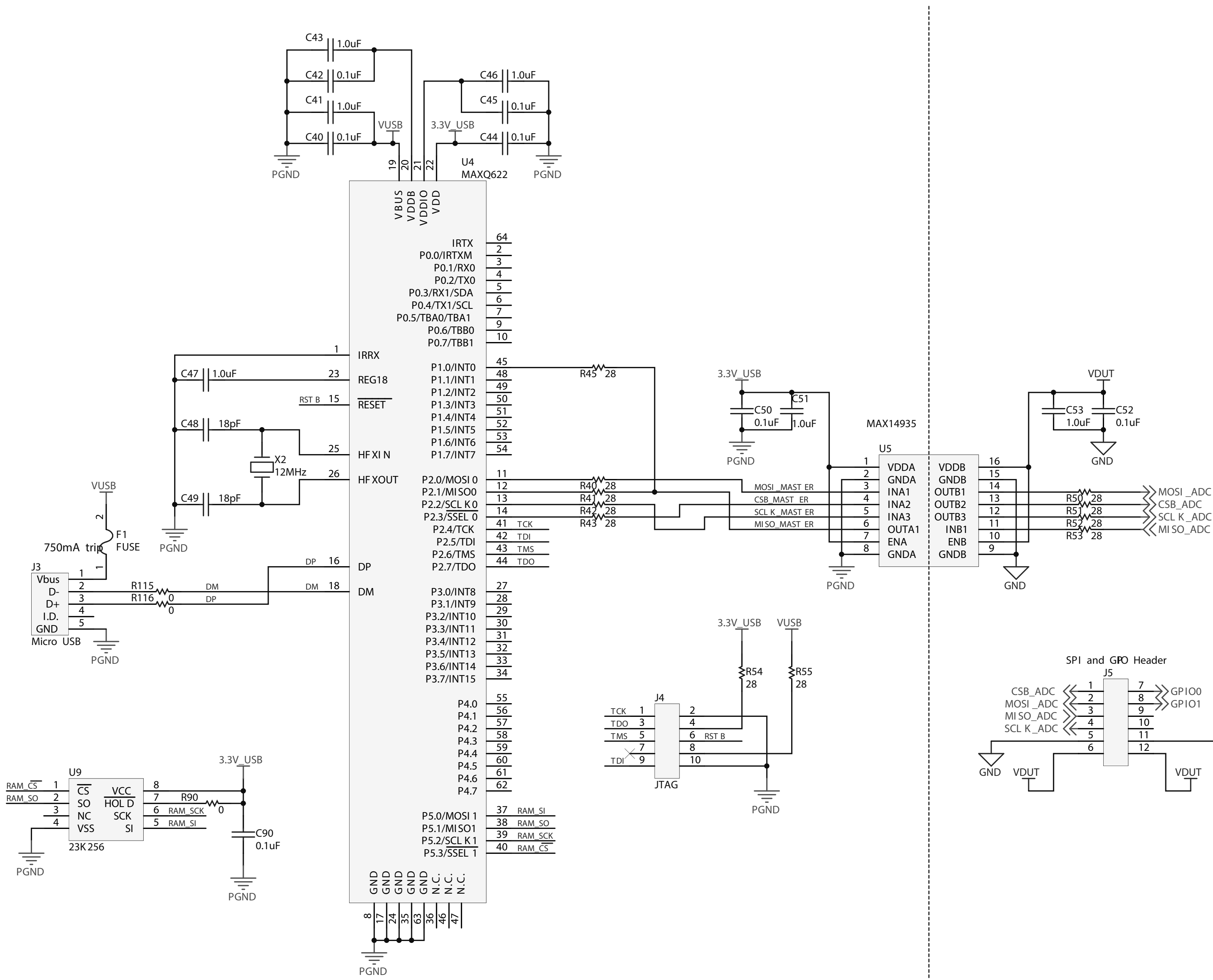
REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	3/16	Initial release	—

Designator	Quantity	Description	Manufacturer	Manufacturer Part Number
C1, C3, C5, C9, C20, C23, C24, C40, C42, C44, C45, C50, C52, C60, C62, C63, C65, C90,	25	0.1uF 10%, 25V, X7R ceramic capacitor (0603)	TDK	C1608X7R1E104K080AA
C2, C4, C6, C21, C25, C26, C41, C43, C46, C47, C51, C53, C70, C71, C80, C81	16	1.0uF 10%, 16V, X7R ceramic capacitor (0603)	Murata	GRM188R71C105KA12D
C7	1	0.1uF, 10%, 50V, X7R ceramic capacitor (0805)	Kemet	C0805C104K5RACTU
C8	1	0.02uF,5%, 50V, COG ceramic capacitor (0805)	Murata	GRM21B5C1H203JA01L
C48, C49	2	18pF, 5%, 50V, COG ceramic capacitor (0603)	Vishay	VJ0603A180JXACW1BC
C61	1	4.7uF, 10%, 10V, X5R ceramic capacitor (0603)	TDK	CGB3B1X5R1A475K055AC
C64	1	10uF, 10%, 10V, X5R ceramic capacitor (0603)	TDK	C1608X5R1A106K080AC
C100, C101, C102, C103, C104, C105, C106, C107, C108, C109, C117, C118, C119, C120	0	100pF, 2%, 16V, PPS capacitor (0603)	Panasonic	ECH-U1C101GX5
C110, C111, C112, C113, C114	0	0.1uF, 2%, 16V, PPS capacitor (1210)	Panasonic	ECH-U1C104GX5
C115, C116	2	0.1uF, 2%, 16V, PPS capacitor (1210)	Panasonic	ECH-U1C104GX5
D1	1	Diode Array (SOT143-4)	Infineon	BAS 4002A RPP E6327
D2	1	5.6V Zener Diode (SOT-123)	Fairchild Semiconductor	MMSZ5232B
DS1	1	Green LED (0805)	Kingbright	APT2012SGC
F1	1	Resettable Fuse, 750mA Trip	Bourns	MF-FSMF035X-2
J1, J2	2	10 pin Screw Connector, 2.54mm pitch	TE Connectivity	1-282834-0
J3	1	USB Micro-B Receptical	Molex	105017-0001
J4	1	10-pin (2x5) Header, 2.54mm pitch	TE Connectivity	5-146258-5
J5	1	12-pin (2x6) Right Angle Header, 2.54mm pitch	FCI	68021-412HLF
J6	1	DC Power Jack	Kycon	KLDX-0202-B
JP1, JP2, JP3, JP10, JP11, JP13	6	2-pin Header, 2.54mm pitch	TE Connectivity	826936-2
JP4, JP7	2	4-pin T-Header, 2.54mm pitch	TE Connectivity	826936-4
JP5, JP6, JP12, JP14	4	3 Pin Single Row Header	3M	961103-6404-AR
JP8	1	20-pin (2x10) Header, 2.54mm pitch	FCI	67996-420HLF
JP9	1	4-pin (2x2) Header, 2.54mm pitch	TE Connectivity	5-146258-2
R1, R3	2	100Ω, 1%, 1/10W resistor (0603)	Vishay	CRCW0603100RFKEA
R2, R4, R81	3	100kΩ, 1%, 1/10W resistor (0603)	Vishay	CRCW0603100KFKEA
R5, R40, R41, R42, R43, R45, R50, R51, R52, R53, R54, R55	12	28Ω, 1%, 1/10W resistor (0603)	Vishay	CRCW060328R0FKEA

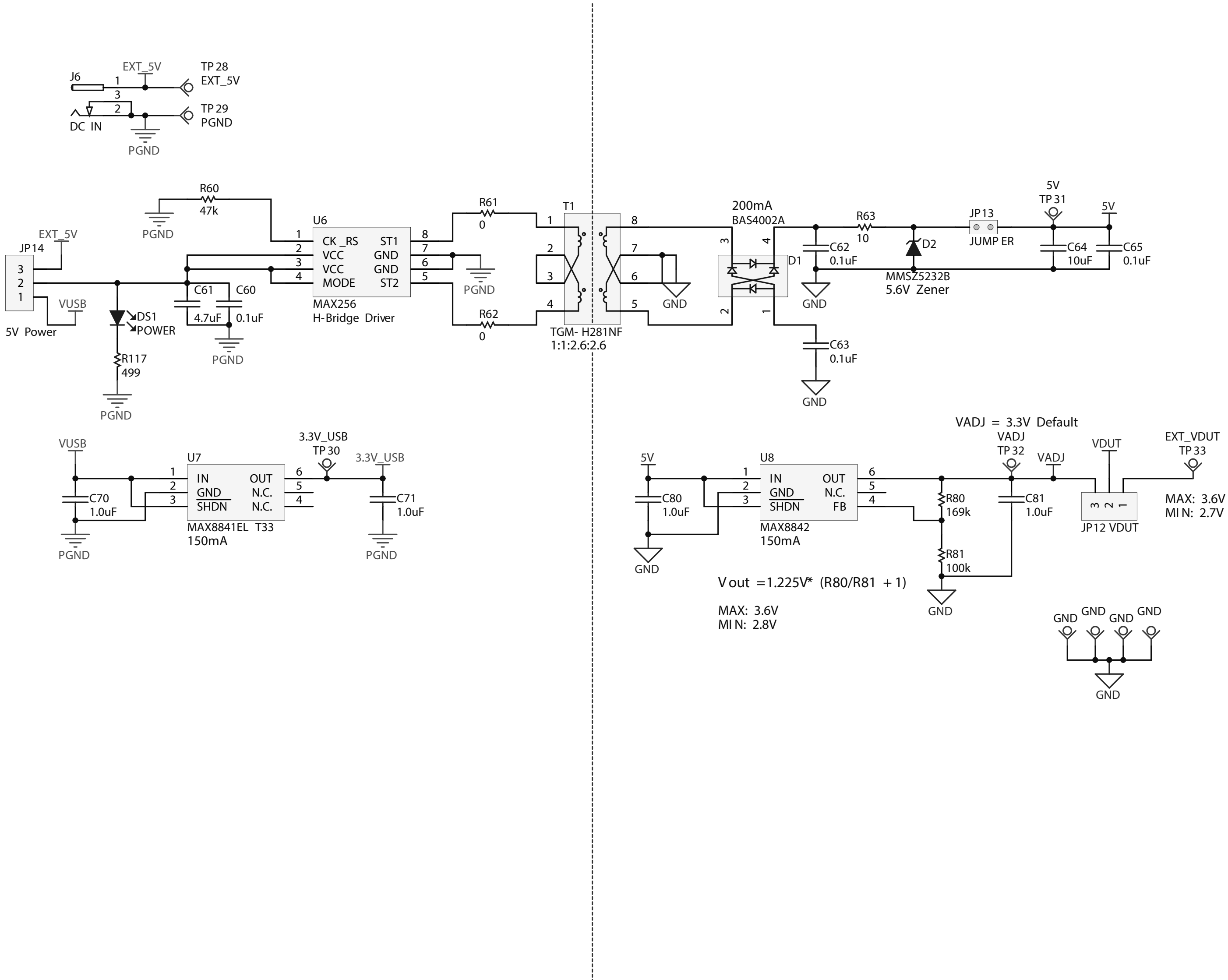
R18, R19, R20, R21	0	DNP (0603)		
R60	1	47kΩ, 1%, 1/10W resistor (0603)	Vishay	CRCW060347K0FKEA
R61, R62, R90, R115, R116	5	0Ω, 1%, 1/10W resistor (0603)	Vishay	CRCW06030000Z0EB
R63	1	10Ω, 1%, 1/2W resistor (0805)	Panasonic	ERJ-P06F10R0V
R80	1	169kΩ, 1%, 1/10W resistor (0603)	Vishay	CRCW0603169KFKEA
R100, R101, R102, R103, R104, R105, R106, R107, R108, R109, R110, R111, R112, R122	14	1kΩ, 1%, 1/10W resistor (0603)	Vishay	CRCW06031K00FKEA
R113, R114	2	15Ω, 1%, 1/10W resistor (0603)	Vishay	CRCW060315R0FKEB
R117	1	499Ω, 1%, 1/10W resistor (0603)	Vishay	CRCW0603499RFKEA
T1	1	1:2.6 Transformer	Halo	TGM-H281NFRL
TP1(VDDREG), TP2 (VDDIO), TP3 (AVDD), TP28 (EXT_5V), TP30 (3.3V_USB), TP31 (5V), TP32 (VADJ), TP33 (EXT_VDUT), TP38 (2.5VREF), TP39 (1.25VREF)	10	Red Test Point	Keystone	5010
TP4 (CAPREG), TP5 (GPIO0/CLK), TP6 (GPIO1). TP7 (DOUT), TP8 (DIN), TP9 (SCLK), TP11 (CSB), TP12 (CAPP) TP13 (CAPN) , TP24 (REF1P), TP25 (REF1N), TP26 (REF2P), TP27(REF2N)	13	White Test Point	Keystone	5012
'TP29 (PGND), TP34 (GND), TP35 (GND), TP36 (GND), TP37 (GND)	5	Black Test Point	Keystone	5011
U1	1	ADC(TQFN -28)	Maxim	MAX11410
U2	1	Voltage Reference (uMAX)	Maxim	MAX6072AAUB25
U4	1	Microcontroller (LQFP)	Maxim	MAXQ622G-0000+
U5	1	Isolator (SOIC)	Maxim	MAX14935BAWE+
U6	1	H-Bridge Driver (SOIC)	Maxim	MAX256ASA+
U7	1	3.3V LDO(QFN)	Maxim	MAX8841ELT33+
U8	1	Adjustable LDO (QFN)	Maxim	MAX8842ELT+
U9	1	256KBit SRAM (SOIC-8)	Microchip	23K256
X1	1	2.4576MHz Oscillator	EPSON	SG-210 STF
X2	1	12MHz Oscillator (3.2 x 2.5mm)	CTS	403C35D12M00000
	24	Jumpers open wire		

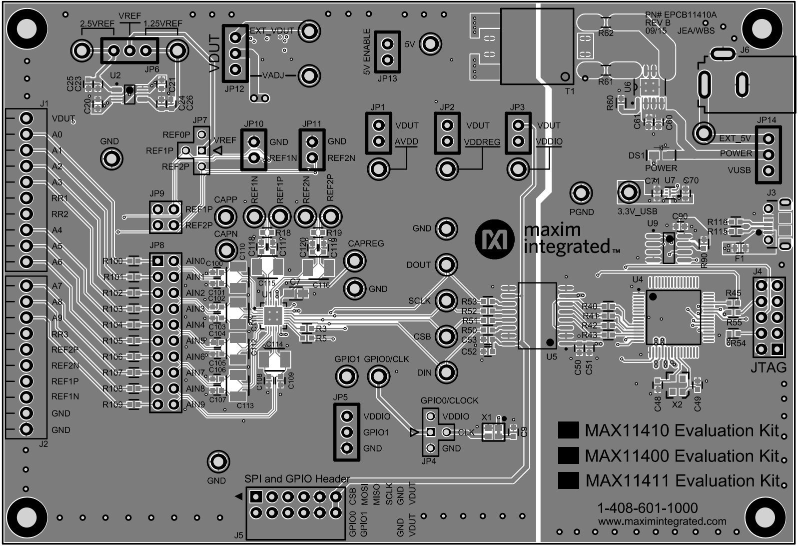


U1
MAX11410
AVDD
VDDREG
VDDIO
CAPREG
AIN0/REF 0P
AIN1/REF 0N
AIN2
AIN3
AIN4
AIN5
AIN6
AIN7
AIN8
AIN9
REF 1P
REF 1N
REF 2P
REF 2N
CAP P
CAP N
GPIO_0/CLK
GPIO1
DOUT/INT
DIN
SCLK
CS
AGND
GND
EP
X1
SG-210 STF
2.4576MHz
50ppm
ST
VCC
GND
OUT
C9
0.1uF
VADJ
VDUT
JP1
AVDD
JP2
VDDREG
JP3
VDDIO
JP4
GPIO0
JP5
GPIO1
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP11
TP12
TP13
CAP REG
C7
0.1uF
0805
X7R 50V
C1
C2
C3
C4
C5
C6
1.0uF
R1
100
R2
100k
R3
R4
R5
28
MISO_ADC
MOSI_ADC
SCLK_ADC
CSB_ADC
DOUT
DIN
SCLK
CSB
0.02uF
COG 50V
C8
GND
JP8
Inputs
AIN0_P
AIN0_N
AIN1_P
AIN1_N
AIN2_P
AIN2_N
AIN3_P
AIN3_N
AIN4_P
AIN4_N
REF 1_P
REF 1_N
REF 2_P
REF 2_N
C100 DNP
C101 DNP
C102 DNP
C103 DNP
C104 DNP
C105 DNP
C106 DNP
C107 DNP
C108 DNP
C109 DNP
C110 DNP 1210
C111 DNP 1210
C112 DNP 1210
C113 DNP 1210
C114 DNP 1210
R100
R101
R102
R103
R104
R105
R106
R107
R108
R109
R110
R111
R112
R113
R114
R122
1k
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
RR1
RR2
RR3
REF P
REF 2_N
REF 1_N
J1
J2
10 pin Screw Terminal
PC_12828340
JP9
References
C115 0.1uF 1210
C116 0.1uF 1210
C117 DNP
C118 DNP
C119 DNP
C120 DNP
R18 DNP
R19 DNP
R20 DNP
R21 DNP
TP24 REF 1P
TP25 REF 1N
TP26 REF 2P
TP27 REF 2N
JP10 REF 1N
JP11 REF 2N
U2
MAX6072AAUB25
IN1
EN1
IN2
EN2
OUT1F
OUT1S
OUT2F
OUT2S
C20 0.1uF
C21 1.0uF
C23 0.1uF
C24 0.1uF
C25 1.0uF
C26 1.0uF
2.5VREF
TP38
1.25VREF
TP39
JP6
VREF
JP7
REF 1_P
AIN0_P
REF2_P

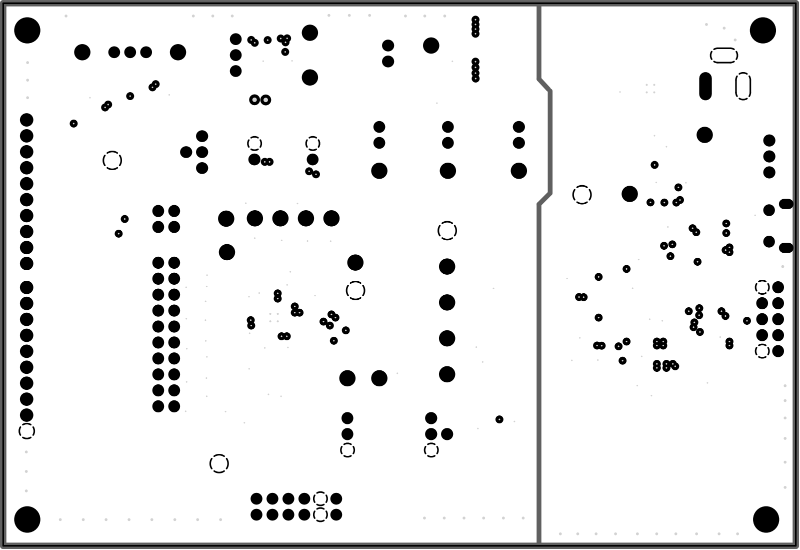


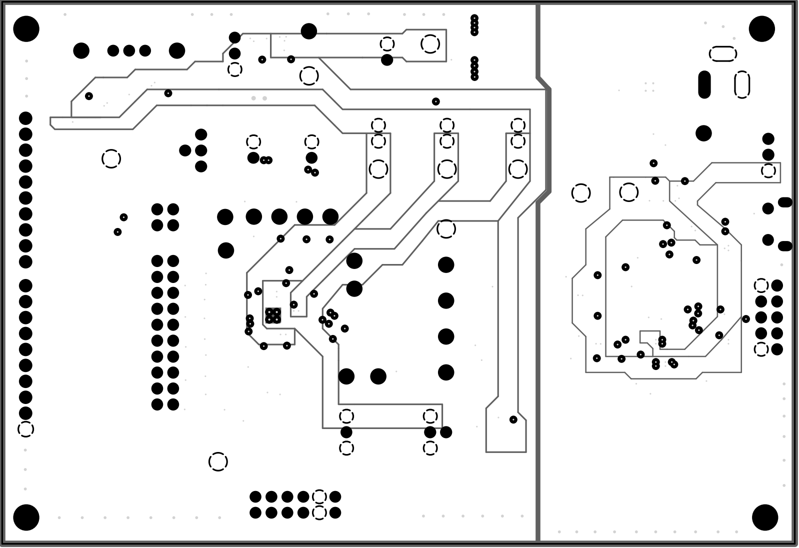
U4
MAXQ622
VBUS
VDDB
VDDIO
VDD
C43 1.0uF
C42 0.1uF
C41 1.0uF
C40 0.1uF
C46 1.0uF
C45 0.1uF
C44 0.1uF
VUSB
3.3V_USB
PGND
IRRX
REG18
RESET
HFXIN
HFXOUT
DP
DM
C47 1.0uF
C48 18pF
C49 18pF
X2 12MHz
F1 FUSE
750mA trip
J3
Micro USB
Vbus
D-
D+
I.D.
GND
R115 0
R116 0
IRTX
P0.0/IRTXM
P0.1/RX0
P0.2/TX0
P0.3/RX1/SDA
P0.4/TX1/SCL
P0.5/TBA0/TBA1
P0.6/TBB0
P0.7/TBB1
P1.0/INT0
P1.1/INT1
P1.2/INT2
P1.3/INT3
P1.4/INT4
P1.5/INT5
P1.6/INT6
P1.7/INT7
P2.0/MOSI 0
P2.1/MISO0
P2.2/SCLK0
P2.3/SSEL 0
P2.4/TCK
P2.5/TDI
P2.6/TMS
P2.7/TDO
P3.0/INT8
P3.1/INT9
P3.2/INT10
P3.3/INT11
P3.4/INT12
P3.5/INT13
P3.6/INT14
P3.7/INT15
P4.0
P4.1
P4.2
P4.3
P4.4
P4.5
P4.6
P4.7
P5.0/MOSI 1
P5.1/MISO1
P5.2/SCLK1
P5.3/SSEL 1
GND
N.C.
R45 28
R40 28
R41 28
R42 28
R43 28
MAX14935
U5
VDDA
GNDA
INA1
INA2
INA3
OUTA1
ENA
VDDB
GNDB
OUTB1
OUTB2
OUTB3
INB1
ENB
C50 0.1uF
C51 1.0uF
C53 1.0uF
C52 0.1uF
VDUT
MOSI_MASTER
CSB_MASTER
SCLK_MASTER
MISO_MASTER
R50 28
R51 28
R52 28
R53 28
MOSI_ADC
CSB_ADC
SCLK_ADC
MISO_ADC
J4
JTAG
TCK
TDO
TMS
TDI
RSTB
R54 28
R55 28
SPI and GPIO Header
J5
GPIO0
GPIO1
U9
23K256
CS
SO
NC
VSS
VCC
HOLD
SCK
SI
RAM_CS
RAM_SO
RAM_SCK
RAM_SI
R90 0
C90 0.1uF

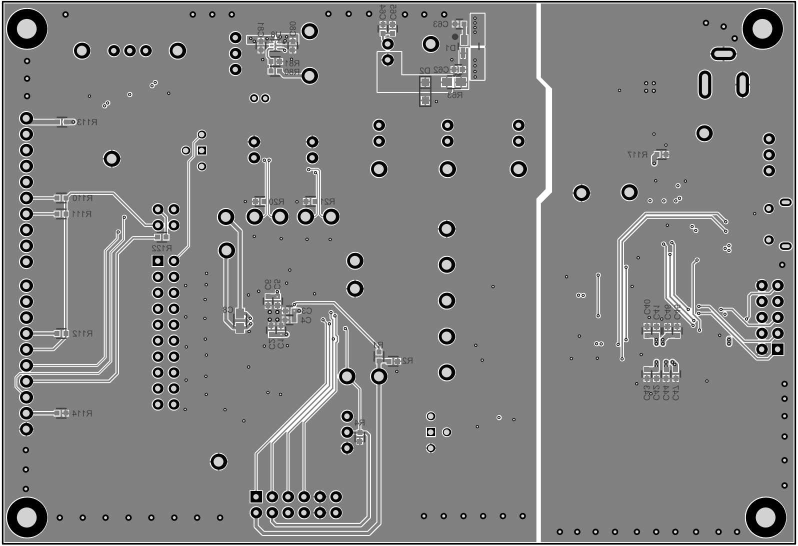

J6
EXT_5V
TP 28
EXT_5V
TP 29
PGND
DC IN
PGND
R60
47k
PGND
EXT_5V
JP14
5V Power
VUSB
DS1
POWER
R117
499
PGND
U6
CK _RS
VCC
VCC
MODE
ST1
GND
GND
ST2
MAX256
H-Bridge Driver
C61
4.7uF
C60
0.1uF
PGND
R61
0
R62
0
PGND
T1
TGM- H281NF
1:1:2.6:2.6
GND
200mA
BAS4002A
D1
C62
0.1uF
GND
C63
0.1uF
GND
R63
10
D2
MMSZ5232B
5.6V Zener
JP13
JUMP ER
5V
TP 31
5V
C64
10uF
C65
0.1uF
VUSB
U7
IN
GND
SHDN
OUT
N.C.
N.C.
MAX8841EL T33
150mA
3.3V_USB
TP 30
3.3V_USB
C70
1.0uF
C71
1.0uF
PGND
PGND
VADJ = 3.3V Default
5V
U8
IN
GND
SHDN
OUT
N.C.
FB
MAX8842
150mA
C80
1.0uF
GND
R80
169k
R81
100k
GND
VADJ
TP 32
VADJ
C81
1.0uF
VDUT
JP12 VDUT
EXT_VDUT
TP 33
MAX: 3.6V
MIN: 2.7V
Vout =1.225V* (R80/R81 + 1)
MAX: 3.6V
MIN: 2.8V
GND
GND
GND
GND
GND



PN# EPCB11410A
REV B
09/15
JEA/WBS
VREF
2.5VREF
1.25VREF
JP6
U2
VDUT
EXT_VDUT
VADJ
JP12
5V ENABLE
5V
JP13
T1
R62
R61
U6
R60
C61
C60
J6
JP14
EXT_5V
POWER
VUSB
DS1
POWER
J1
VDUT
A0
A1
A2
A3
RR1
RR2
A4
A5
A6
A7
A8
A9
RR3
REF2P
REF2N
REF1P
REF1N
GND
GND
J2
GND
JP7
REF0P
REF1P
REF2P
VREF
JP10
GND
REF1N
JP11
GND
REF2N
JP1
VDUT
AVDD
JP2
VDUT
VDDREG
JP3
VDUT
VDDIO
JP9
REF1P
REF2P
CAPP
CAPN
REF1N
REF1P
REF2N
REF2P
R18
R19
CAPREG
GND
JP8
AIN0
AIN1
AIN2
AIN3
AIN4
AIN5
AIN6
AIN7
AIN8
AIN9
R100
R101
R102
R103
R104
R105
R106
R107
R108
R109
U1
R3
R5
GND
DOUT
SCLK
CSB
DIN
R53
R52
R51
R50
C53
C52
U5
PGND
3.3V_USB
C71
U7
C70
J3
U9
C90
R116
R115
R90
F1
maxim integrated
U4
R40
R41
R42
R43
C50
C51
R45
R55
R54
J4
JTAG
C48
X2
C49
GPIO1
GPIO0/CLK
JP5
VDDIO
GPIO1
GND
GPIO0/CLOCK
VDDIO
CLK
GND
JP4
X1
C9
GND
SPI and GPIO Header
CSB
MOSI
MISO
SCLK
GND
VDUT
GPIO0
GPIO1
GND
VDUT
J5
MAX11410 Evaluation Kit
MAX11400 Evaluation Kit
MAX11411 Evaluation Kit
1-408-601-1000
www.maximintegrated.com






R113
R110
R111
R112
R114
R122
R20
R21
C8
C3
C4
R2
R4
R117
C63
D1
C62
D2
R63
R81
R80
C81
C80
C64
C65
C9
C5
C1
C2
C40
C41
C46
C42
C43
C45
C44
C47