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General Description

The MAX2771 evaluation kit (EV kit) simplifies evaluation of the MAX2771, a next-generation Global Navigation Satellite System (GNSS) receiver covering the L1, L2, L5, E1, E5, E6, B1, B2, and B3 bands, as well as the GPS, GLONASS, Galileo, QZSS, IRNSS, and BeiDou navigation satellite systems on a single chip. It enables testing of device performance and requires no additional support circuitry. Standard 50 Ω SMA connectors are included on the EV kit for the inputs and outputs to allow for quick and easy evaluation on the test bench.

The MAX2771 EV kit contains a microcontroller (MCU) that translates between the three-wire SPI interface and USB to allow the user to configure internal registers and modes with Graphical User Interface (GUI) software running on a PC. The EV kit is fully assembled and tested at the factory.

This document provides a component list, a list of equipment required to evaluate the device, a straightforward test procedure to verify functionality, a description of the EV kit circuit, the circuit schematic, and artwork for each layer of the printed circuit board (PCB).

Features

- Easy Evaluation of the MAX2771 IC
- +2.7V to +3.3V Single-Supply Operation
- 50Ω SMA Connectors on the RF and Baseband Input and Outputs
- All Critical Peripheral Components Included
- Micro-USB Port for Interfacing with PC

Quick Start

Required Equipment

This section lists the recommended test equipment to verify operation of the MAX2771. It is intended as a guide only and some substitutions are possible.

- One RF signal generator capable of delivering minimum -120dBm up to 3.0GHz (Keysight N5182B or equivalent)
- An RF spectrum analyzer with a range of 100kHz to 3.0GHz (Keysight N9020A or equivalent)
- A power supply capable of up to 1A at +2.7V to +6V
- One Digital multi-meter for measuring the supply current (Keysight 34461A or equivalent) (optional)
- 50Ω coaxial RF cable with SMA connectors
- A network analyzer (e.g., HP 8753D or equivalent) to measure small-signal return loss (optional)
- A dual power supply capable of delivering up to 1A at ±5V
- A user-supplied Windows-based PC
- Oscilloscope or logic analyzer to measure digital outputs(optional)

Ordering Information appears at end of data sheet.



Procedure

This section provides a step-by-step guide to operating the EV kit and testing the device functions.

Caution: Do not turn on the DC power or RF signal generators until all connections are completed.

The MAX2771 EV kit includes two on-board MAX8510 linear regulators for powering up the MAX2771 device to a regulated supply voltage of +2.85V. When using the linear regulators, connect pins 1-2 of headers J15 and J16. The MAX2771 can also be powered directly through an external power supply connected to pin 2 of these headers. Pin 1 of these 3-pin headers is marked with a dot on the silkscreen.

Download the MAX2771 EV Kit Software

- Download the MAX2771 EV kit software from the Maxim Integrated website, run the installation file, and install it.
- Start running the GUI program.

Powering the EV Kit

- Connect the PC to the on board MAX32625 PICO microcontroller module on the EV kit using the provided USB cable. The GUI should indicate EV kit connected in the status log.
- Connect a DC supply set to +3V (through an ammeter if desired) to headers J13 and ground J14 on the EV kit. Do not turn on the supply. When using the on-board linear regulators to power the MAX2771, connect pins 1-2 of headers J15 and J16.
- Connect a DC supply set to +5V to header J28 on the EV kit. Connect a DC supply set to -5V to header J29 on the EV kit. Do not turn on the supply. Connect the ground to J25.
- Make sure that headers J17– J24 are shorted for proper supply connection to the MAX2771.
- Turn on the power supplies, the digital multimeter should read around 20mA of current.

High-Band Connections

- Set the RF signal generator to 1575.42MHz, -110dBm power. Do not turn on the generator's output. Connect the RF signal generator to the LNA_ HI_IN input (J4) using a coaxial RF cable with SMA connectors.
- Connect LNA_HI_OUT SMA connector (J5) to the MIX_HI_IN SMA connector (J6) on the EV kit using a short coaxial RF cable with SMA connectors.
- In the GUI's Streaming and Registers tab, write 0xBEA41603 to the register at address 0x0 and write 0x00C00002 to the register at address 0x9.
- Connect the output of the MAX4444 buffer, I_OUT_ ANA (J10) on the EV kit to a spectrum analyzer using a coaxial RF cable with SMA connectors.
- In the GUI's Receiver, IF and AGC tab (make sure Auto Update is ON),
 - Select Filter type as bandpass filter.
 - Select Filter Order to 5th Order Butterworth option.
 - Select filter Bandwidth to 2.5MHz.
 - Select GAIN set from GAININ.
 - Select ADC Bypass mode in Output Driver Configuration.
- Turn on the RF signal generator output and observe the output in Signal analyzer at 4.092MHz. See <u>Figure 1</u> below.
- Set the Driver Configuration to CMOS logic to observe the ADC digital output at J26 header pins. ADC Output Bit and Data format can be selected accordingly from GUI. See Figure 2.

Evaluates: MAX2771

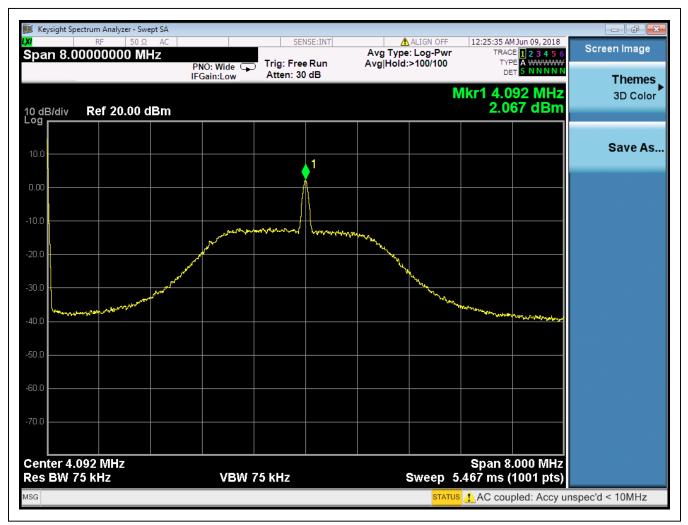


Figure 1. Spectrum of IF Signal within the Filter response (High Band)

Evaluates: MAX2771



Figure 2. ADC Outputs on Oscilloscope

Evaluates: MAX2771

Low-Band Connections

- Set the RF signal generator to 1176.45MHz, -110dBm power. Do not turn on the generator's output. Connect the RF signal generator to the LNA_ LO_IN input (J1) using a coaxial RF cable with SMA connectors.
- Connect LNA_LO_OUT SMA connector (J2) to the MIX_LO_IN SMA connector (J3) on the EV kit using a coaxial RF cable with SMA connectors.
- Connect the output of the MAX4444 buffer, I_OUT_ ANA (J10) on the EV kit to a spectrum analyzer using coaxial RF cable with SMA connectors.
- In the GUI's Streaming and Registers tab, write 0xBEA41603 to the register at address 0x0 and write 0x00C00002 to the register at address 0x9.
- In the GUI's Receiver, PLL and Clock tab (make sure Auto Update is on),
 - Select L2/L5band.
 - Select Fractional PLL Mode in PLL Control Mode.
 - Set Reference division ratio to 3 and input LO Frequency to 1173.3333MHz.
 - Check for the Lock detect button to go green.
- In the GUI's Receiver IF and AGC tab,
 - Select 'LNA_LO is Active' in LNA Mode field.
 - Select Mixer Mode as 'Enable Low Band'
 - Select Filter type as bandpass filter.

Component Suppliers

SUPPLIER	WEBSITE
Murata Mfg. Co., Ltd.	www.murata.com
Rakon Ltd.	www.rakon.com
Yageo Corporation	www.yageo.com
Kemet Electronics Pvt Ltd	www.kemet.com/

Note: Indicate that you are using the MAX2771 when contacting these component suppliers.

- Select Filter Order to 5th Order Butterworth option.
- Select filter Bandwidth to 2.5MHz.
- Update Centre Frequency bits with value 1100000.
- Select GAIN set from GAININ in AGC mode
- Select ADC Bypass mode in Output Driver Configuration.
- Turn on the RF signal generator output and observe the output in Signal analyzer at 3.11MHz.
- Set the Driver Configuration to CMOS logic to observe the ADC digital output at J26 header pins.

Layout Issues

A good PCB is an essential part of an RF circuit design. The EV kit PCB can serve as a guide for laying out a board using the MAX2771. Keep traces carrying RF signals as short as possible to minimize radiation and insertion loss. Use impedance control on all RF signal traces. The exposed paddle must be soldered evenly to the board's ground plane for proper operation. Use abundant vias beneath the exposed paddle and between RF traces to minimize undesired RF coupling. To minimize coupling between different sections of the IC, each VCC pin must have a bypass capacitor with low impedance to the closest ground at the frequency of interest. Do not share ground vias among multiple connections to the PCB ground plane. Refer to the Layout Issues section of the MAX2771 IC data sheet for more information

Ordering Information

PART	TYPE	
MAX2771EVKIT#	EV Kit	

#Denotes RoHS-compliant

Evaluates: MAX2771

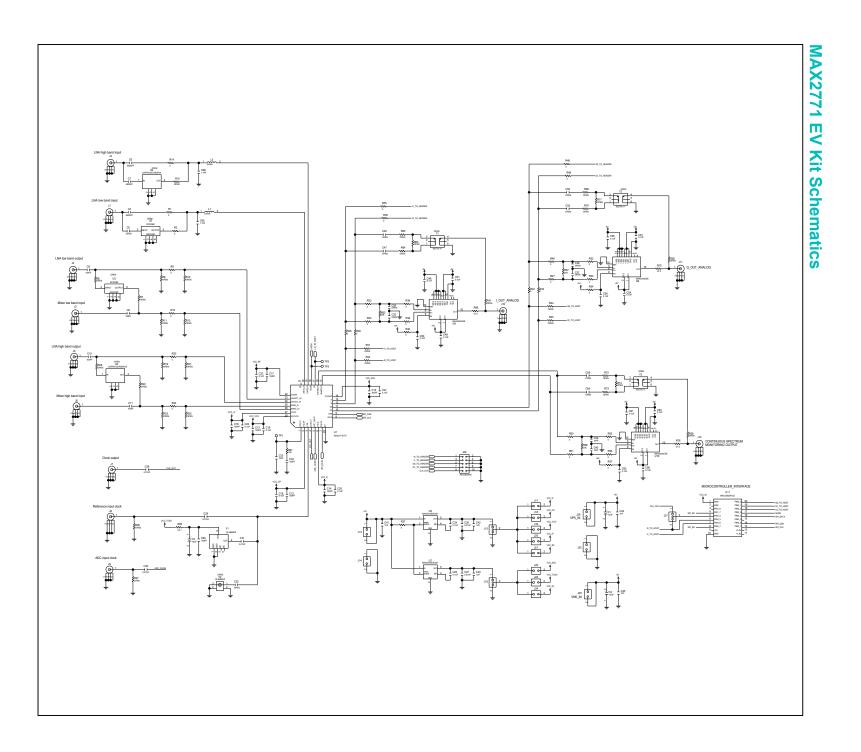
MAX2771 EV Kit Bill of Materials

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION	COMMENTS
1	C1-C3	-	3	TAJB106K016R; T494B106K016A	AVX;AVX	10UF	CAPACITOR; SMT (3528); TANTALUM CHIP; 10UF; 16V; TOL=10%	
2	C4, C6, C7	-	3	C0402C682K5RAC; GRM155R71H682KA88	KEMET;MURATA	6800PF	CAPACITOR; SMT (0402); CERAMIC CHIP; 6800PF; 50V; TOL=10%; TG=-55 DEGC TO +125 DEGC; TC=X7R	
3	C8-C17, C64	-	11	C0402C101J5GAC; NMC0402NPO1011; CC0402JRNPO9BN101; GRM1555C1H101JA01; C1005C0G1H101J050	KEMET;NIC COMPONENTS CORP.;YAGEO PHICOMP;MURATA;TDK	100PF	CAPACITOR; SMT (0402); CERAMIC CHIP; 100PF; 50V; TOL=5%; TG=- 55 DEGC TO +125 DEGC; TC=C0G	
4	C18-C25, C48-C51, C54- C57, C60-C63	-	20	C0402C104J4RAC	КЕМЕТ	0.1UF	CAPACITOR; SMT; 0402; CERAMIC; 0.1uF; 16V; 5%; X7R; -55degC to + 125degC; 0 +/-15% degC MAX.	
5	C26-C31	-	6	NMC0402X7R103K16TRP; GRM155R71C103KA01; CC0402KRX7R7BB103	NIC COMPONENTS CORP.; MURATA;YAGEO	0.01UF	CAPACITOR; SMT (0402); CERAMIC CHIP; 0.01UF; 16V; TOL=10%; MODEL=; TG=-55 DEGC TO +125 DEGC; TC=X7R	
6	C33	-	1	C0402C0G500-150JNP; GRM1555C1H150JA01	VENKEL LTD.;MURATA	15PF	CAPACITOR; SMT (0402); CERAMIC CHIP; 15PF; 50V; TOL=5%; TG=- 55 DEGC TO +125 DEGC; TC=C0G	
7	C34	-	1	CC0402KRX7R9BB751	YAGEO	750PF	CAP; SMT (0402); 750PF; 10%; 50V; X7R; CERAMIC CHIP	
8	C39, C40	-	2	C0402C100J5GAC; GRM1555C1H100JA01	KEMET;MURATA	10PF	CAPACITOR; SMT (0402); CERAMIC CHIP; 10PF; 50V; TOL=5%; TG=- 55 DEGC TO +125 DEGC; TC=C0G	
9	C41-C45	-	5	C0402C105K8PAC	KEMET	1UF	CAPACITOR; SMT (0402); CERAMIC CHIP; 1UF; 10V; TOL=10%; TG=- 55 DEGC TO +85 DEGC; TC=X5R	
10	C65	-	1	GRM1554C1E1R1CA01	MURATA	1.1PF	CAP; SMT (0402); 1.1PF; +/-0.25PF; 25V; JIS; CERAMIC CHIP ;	
11	C66	-	1	GJM1555C1H1R7WB01	MURATA	1.7PF	CAPACITOR; SMT (0402); CERAMIC CHIP; 1.7PF; 50V; TOL=0.05PF; TG=-55 DEGC TO +125 DEGC; TC=C0G	
12	J1-J4, J10-J12	-	7	142-0701-801	JOHNSON COMPONENTS	142-0701-801	CONNECTOR; FEMALE; BOARDMOUNT; END LAUNCH JACK RECEPTACLE- ROUND CONTACT; STRAIGHT; 2PINS	
13	12-19	-	5	142-0701-201	JOHNSON COMPONENTS	142-0701-201	CONNECTOR; FEMALE THREADED; THROUGH HOLE; SMA; STRAIGHT THROUGH; 5PINS	
14	J13, J14, J17-J25, J28, J29	-	13	PEC02SAAN	SULLINS	PEC02SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 2PINS	
15	J15, J16, J27	-	3	PEC03SAAN	SULLINS	PEC03SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 3PINS	
16	J26	-	1	PEC05DAAN	SULLINS ELECTRONICS CORP.	PEC05DAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 10PINS; - 65 DEGC TO +125 DEGC	
17	L1	-	1	LQW18AN8N4C80	MURATA	8.4NH	INDUCTOR; SMT (0603); WIREWOUND; 8.4NH; 0.2NH; 1.6A ;	
18	L2	-	1	LQW18AN5N6C80	MURATA	5.6NH	INDUCTOR; SMT (0603); WIREWOUND; 5.6NH; 0.2NH; 1.9A ;	
19	R1, R2, R14, R29, R30, R33- R40, R42, R43, R46-R57	-	27	RC0402JR-070RL; CR0402-16W-000RJT	YAGEO PHYCOMP; VENKEL LTD.	0	RESISTOR; 0402; 0 OHM; 5%; JUMPER; 0.063W; THICK FILM	
20	R9, R12, R20, R24	-	4	RC1608J000CS; CR0603-J/-000ELF;RC0603JR- 070RL	SAMSUNG ELECTRONICS; BOURNS;YAGEO PH	0	RESISTOR; 0603; 0 OHM; 5%; JUMPER; 0.10W; THICK FILM	
21	R60	-	1	CR0402-16W-22R1FT	VENKEL LTD.	22.1	RESISTOR; 0402; 22.1 OHM; 1%; 100PPM; 0.063W; THICK FILM	
22	R61	-	1	ERJ-2GEJ153	PANASONIC	15K	RESISTOR; 0402; 15K OHM; 5%; 200PPM; 0.1W; THICK FILM	
23	R62, R67, R68	-	3	ERJ-2GEJ203X	PANASONIC	20К	RESISTOR; 0402; 20K OHM; 5%; 200PPM; 0.10W; THICK FILM	
24	R66, R75, R76	-	3	CR0402-16W-47R5FT; CRCW040247R5FK	VENKEL LTD.;VISHAY	47.5	RESISTOR; 0402; 47.5 OHM; 1%; 100PPM; 0.063W; THICK FILM	

Evaluates: MAX2771

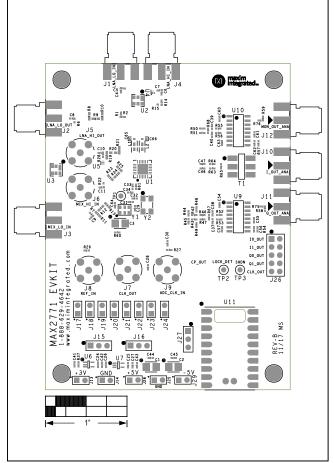
1 1	ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION	COMMENTS
16 TH-TR3 . 3 SOUD KEYSTONE NA TOTAL LEDATE AND BOARD WREE SUPERALE PARKAGE CONTINUE DAWARD HER INFORMED BOARD HER INFORMED BERGYZE 27 UI . 1 MAC2771ETH MAXIM MAS2771ETH CONTINUE DAWARD HER INFORMED BOARD HER INFORMED BERGYZE 28 UI UI . 2 MAS2771ETH MAXIM MAS2771ETH CONTINUE DAWARD HER INFORMED BOARD HER INFORMED BERGYZE 29 UE-UI . 2 MAS2870EX20H MAXIM MAXIM MAXIMARESE CONTINUE DAWARD HER INFORMED BOARD HER INFORMED BERGYZE 30 UI 1. MAS2870EX20H MAXIM MAXIMARESE CONTINUE DAWARD HER INFORMED BOARD HER INFORMED BERGYZE 31 VI 1 MAS28059F00 MAXIM MAXIMARESE CONTINUE DAWARD HER INFORMED BERGYZE 32 VI 1 MAS28059F00 MAXIMARESE CONTINUE DAWARD HER INFORMED BERGYZE 33 VI 1 MAS28059F00 MAS28059F00 COUNDE BOARD HER INFORMED H	25	SU15-SU24	-	10	STC02SYAN		STC02SYAN	TOTAL LENGTH=0.256IN; BLACK; INSULATION=PBT CONTACT=PHOSPHOR	
27 UI I. MAX271ETH MAXM MAX271ETH ONSAME DUTLIEE DAWING 21 (IN PLACAGE) DUTLIEE DAWING 21 (IN PLACAGE) DUTLIEE DAWING 21 (IN PLACAGE) PATTERNS DOODS 28 UR, UT I. Z MAXES TIETH MAXM MAXES TIETH DIVENE DAWING 21 (IN PLACAGE) PATTERNS DOODS 29 UR, UT I. Z MAXES TIETH MAXM MAXES TIETH DIVENE UNATAGE TOWNONE INCOMENDATION DETER TIETH AND TABLE PARAMAGE 20 UR, UT I. Z MAXES TIETH MAXM MAXES TIETH DIVENE UNATAGE TOWNONE INCOMENTS 31 UT1 I. AX444EEEE MAXM MAXE44EEEE DOWNONE TOWNONE TIETH AND TOWNONE INCOMENTS 32 PCE I. MAXES TIETH MAXM MAXEA4EEEE SOUTH TOWNONE INCOMENTS MOXES TIETH 33 V1 I. MAXEA4EEEE RAKON FG 300MCL SOUTH TOWNONE TO	26	TP1-TP3	-	3	5000	KEYSTONE	N/A	TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; RED; PHOSPHOR BRONZE	
18 U0, U7 - 2 MAXES IDEAG29- MAXIM MAXES IDEXCH-9 MAXES IDEXCH-9 <t< td=""><td>27</td><td>U1</td><td>-</td><td>1</td><td>MAX2771ETI+</td><td>MAXIM</td><td>MAX2771ETI+</td><td>GNSS RECEIVER; TQFN28-EP; PACKAGE OUTLINE DRAWING: 21-0140; PACKAGE CODE: T2855+3; PACKAGE LAND</td><td></td></t<>	27	U1	-	1	MAX2771ETI+	MAXIM	MAX2771ETI+	GNSS RECEIVER; TQFN28-EP; PACKAGE OUTLINE DRAWING: 21-0140; PACKAGE CODE: T2855+3; PACKAGE LAND	
29 UB-L10 - 3 MAXMA MAXMA MAXA44ESE LONOPSTORTION DEFERENTIAL-TO- SINGLE-ENARCE LINE RECEIVERS WITH ENABLE 30 U11 - 1 MAX32825PICO MAXMA MAX2825PICO MAX32825PICO BOARD DESION FOR MAX32825PICO FOR MITEORETICAL DESION FOR MITEOR MIREATA VAEDE DOMP/FICE LAD. INFORMATION MIREATA VAEDE DESION DESION FOR MITEOR DESION FOR MITEOR DESI	28	U6, U7	-	2	MAX8510EXK29+	MAXIM	MAX8510EXK29+	HIGH PSRR; LOW-DROPOUT; 0.12A LINEAR	
30 U11 1 MAX3282SPICD MAXIM MAX3282SPICD MAX328SPICD MAX328SPICD MAX328SPICD MAX328SPICD MAX328SPICD MAX328SPICD MAX328SPICD MAX328SPICD MAX328SPICD MAX328SP	29	U8-U10	-	3	MAX4444ESE+	MAXIM	MAX4444ESE	LOW-DISTORTION; DIFFERENTIAL-TO- SINGLE-ENDED LINE RECEIVERS WITH	
11 Y1 - 1 IT3200C_16.368MHZ PAKON 16.368MHZ SMT 3.2 MM 3.2.5 MM 3.2.	30	U11	-	1	MAX32625PICO	MAXIM	MAX32625PICO	MAX32625PICO BOARD DESIGN FOR MAX32625 ARM CORTEX-M4F; BOARD;	
33 C5 DNP 0 CO402C682X6RAC; GRM 55R7 H82XA83 KEMET.MURATA 8800PF CAPACITOR; SMT (0402); CERAMIC CHP; 860(07 1425 DEG); TO-YTR 34 C32 DNP 0 MACA02X7R1982XA83; CARACCHP; SMT (0402); CCA0402X7R77BB103 NIC COMPONENTS CORP.; MURATA;YAGEO 0.01UF CAPACITOR; SMT (0402); CERAMIC CHP; 0.01UF; 16V; TOL=10%; MOREL; TG=45 DEGC TO +125 DEGC; TO=X7R 35 C35-C38 DNP 0 C0402C100JSGAC; GRM 5595C1H100JA01 KEMET.MURATA 10PF CAPACITOR; SMT (0402); CERAMIC CHP; 0.01UF; 16V; TOL=15%; TG= 55 DEGC TO +125 DEGC; TO=X7R 36 C46, C47, C52, C53, C58, C59 DNP 0 C0402C100JSGAC; GRM 559C1H100JA01 KEMET 0.1UF CAPACITOR; SMT (0402); CERAMIC CHP; 10P; 50; YTR; -55degC to +125degC to +125 DEGC; TO=X7R 37 R22, R28, R29, R22, R28, R29, R28, R27 DNP 0 C040221R-070RL; CR04022R-07WA02 16W-0409R+WCP; VENKEL LTD. 0 RESISTOR; 0402; 00HM; 5%; JUMPER; D0262W; THICK FILM 38 R28, R27 DNP 0 RC0402/R-07WA02; 16W A5W; THICK FILM 0 40 R68, R71, R74 DNP 0 RCV04022C0WFK VISHAY DALE;KOA SPEER 49.9 41 T1-T3 DNP <td>31</td> <td>Y1</td> <td>-</td> <td>1</td> <td>IT3200C_16.368MHZ</td> <td>RAKON</td> <td>16.368MHZ</td> <td>SMT 3.2 MM X 2.5 MM; 10PF; 16.368MHZ; +/-</td> <td></td>	31	Y1	-	1	IT3200C_16.368MHZ	RAKON	16.368MHZ	SMT 3.2 MM X 2.5 MM; 10PF; 16.368MHZ; +/-	
33 CS DNP 0 GMM202882/RNAC; GMM202882/RNAC; CMM202882/RNAC; CMM202882/RNAC; CMM202877108X101; CMM2072103K10TRP; GRM155771108XA01; CMM207A77AGE0 KEMET.MURATA BB00PF CERAMIC CHIP; B00P; S0V; TOL=10%; TG=S5 DEGC TO 142 DEGC; CMM207103KA01; CMM207A77AGE0 34 C32 DNP 0 NMC0402X7R103K10TRP; GRM155771103KA01; CM0207A77AGE0 NLC COMPONENTS CORP.; MURATA?YAGE0 0.01UF CAPACITOR; SMT (0402); CERAMIC CHIP; 10P; 50V; TOL=10%; MODEL; TG=S0 DEGC TO 123 DEGC; CM207R 35 C35-C38 DNP 0 C0402C100JGAC; GRM1555C1H100JA01 KEMET.MURATA 10PF CAPACITOR; SMT (0402); CERAMIC CHIP; 10P; 50V; TOL=5%; TG= SD EGC TO 125 DEGC; TO 125 DEGC; TO 125 DEGC; CM207C10125 CM2; TO 125 DEGC; TO 125 DEGC; TO 125 DEGC; CM207C1 OUI; 10V; 5%; type; 55degC to 125degC; 0 +15% degC MAX; 36 C46, C47, C52, C53, C58, C59 DNP 0 C04022100/GR1; CR4042160/ORD; YAGED PHYCOMP; VENKEL LTD. 0.1UF CAPACITOR; SMT (0402); CERAMIC CHIP; 10P; 5%; degC MAX; 38 R26, R27 DNP 0 RC402JR-070RL; CR4042160/GFK; YISAV DALE;YAGEO 1K RESISTOR; 0402; 00 OHM; 5%; JUMPH 0.0529W; THICK FILM 39 R26, R27 DNP 0 CRC402JR-070RL; CR40422100FK; VISHAY DALE;YAGEO 1K RESISTOR; 0402; 00 OHM; 1%; 100PPM;	32	РСВ	-	1	MAX2771	MAXIM	PCB	PCB:MAX2771	-
34 C32 DNP 0 SMRUGARY INDUK NITY: COMPONENTS CORP.: MURATA:YAGEO 0.01UF CERAMIC CHIP: 0.01UF; 10V; 10V; 10V; 10V; MODEL; TG=-5 DEGC; TO=-125 DEGC; 35 C35-C38 DNP 0 C0402C100JSGAC; GRM15S5C1H100JA01 KEMET.MURATA 10PF CAPACITOR; SMT (0402); CERAMIC CHIP: 10P; 50V; TOL=5%; TG=- 55 DEGC TO +125 DEGC; 36 C46, C47, C52; C35, C58, C59 DNP 0 C0402C104JSGAC; GRM15S5C1H100JA01 KEMET 0.1UF CAPACITOR; SMT (0402); CERAMIC; 0.1UF; 16V; TOL=5%; TG=- 55 DEGC TO +125 DEGC; TC=-C0G 37 R5, R7, R15, R22, R28, R31, R32, R28, R31 DNP 0 C0402C104JR-070RL; CR4002-16W-000RJT VAGEO PHYCOMP; VENKEL LTD. RESISTOR; 0402; 0.0HM; 5%; JJMEEE; 0.083W; THICK FILM 38 R26, R27 DNP 0 CRCW0402489FK; RV0402-16W-000RJT VISHAY DALE; AGA SPEER 4.99 RESISTOR; 0402; 4.9.0HM; 1%; IOPPM, 0.0625W; THICK FILM 39 R63, R64, R68, R70, R72, R73 DNP 0 CRCW040240FK; VISHAY DALE; AGSEO 1K RESISTOR; 0402; 200.0HM; 1%; IOPPM, 0.0625W; THICK FILM 40 R65, R71, R74 DNP 0 CRCW0402200FK; VISHAY DALE 200 RESISTOR; 0402; 200.0HM; 1%; IOPPM, 0.0625W; THICK FILM	33	C5	DNP	0		KEMET;MURATA	6800PF	CERAMIC CHIP; 6800PF; 50V; TOL=10%;	
35 C35-C38 DNP 0 OGM/L00/BGACC GMM1595C1H100JA01 KEMET,MURATA 10PF CERRANC CHIP; 10PF; 50V; TOL=5%; TG 65 DEG: CT 0+125 DEG; TC -C060 36 C46; C47, C52, C53, C58, C59 DNP 0 C0402C104J4RAC KEMET 0.1UF CAPACTOR; SMT; 0402; CERRANC; 0.1UF; 16V; 5%; XTR; -55degC to +125degC; 0.4/-15% degC MAX. 37 R32, R28, R31, R44, R54, R58, R59 DNP 0 RC0402JR-070RL; CR04024R0FK; YAGEO PHYCOMP; VENKEL LTD. 0 RESISTOR; 0402; 0.0HM; 5%; JUMPER; 0.063W; THICK FILM RESISTOR; 0402; 0.0HM; 5%; JUMPER; 0.063W; THICK FILM 38 R26, R27 DNP 0 RC04024R0FK; RC34022FR071KL VISHAY DALE; XGEO 1K RESISTOR; 0402; 40.9 0HM; 1%; JUMPER; 0.063W; THICK FILM 39 R63, R64, R69, R70, R72, R73 DNP 0 CRCW0402200FFK VISHAY DALE; YAGEO 1K RESISTOR; 0402; 1K; 1%; 100PPM, 0.063W; THICK FILM ILM 40 R65, R71, R74 DNP 0 CRCW0402200FFK VISHAY DALE 200 RESISTOR; 0402; 1K; 1%; 100PPM, 0.063W; THICK FILM ILM 41 T1-T3 DNP 0 ADTT4-1+ MIN-CIRCUITS ADTT4-1+ SF2208E	34	C32	DNP	0	GRM155R71C103KA01;		0.01UF	CERAMIC CHIP; 0.01UF; 16V; TOL=10%; MODEL=; TG=-55 DEGC TO +125 DEGC;	
36 C53, C54, C57, C44, C47, C52, C57, DNP 0 C0402C104J4RAC KEMET 0.1UF CERAMIC; 0.1UF; 169; 5%; X7R; -55degC to + 125degC, 0 +/-15% degC MAX. 37 R6, R7, R15, R22, R28, R31, R44, R45, R58, R59 DNP 0 RC0402JR-070RL; CR0402-16W-000RJT YACEO PHYCOMP; VENKEL LTD. 0 RESISTOR: 0402; 0 -HM; 5%; JUMPER; 0.063W; THICK FILM 38 R26, R27 DNP 0 CRCW040249R9FK; RX73HETTP44R9F VISHAY DALE;YAGEO 1K RESISTOR: 0402; 149; 0-HM; 1%; 100PPM, 0.0623W; THICK FILM 39 R63, R64, R69, R69, R70, R72, R73 DNP 0 CRCW0402200RFK; VISHAY DALE;YAGEO 1K RESISTOR: 0402; 140; 140; FILM 140 40 R65, R71, R74 DNP 0 CRCW0402200RFK VISHAY DALE;YAGEO 1K RESISTOR; 0402; 140; 140; FILM 41 T1-T3 DNP 0 ADTT4-1+ MINI-CIRCUITS ADTT4-1+ SESTOR; 0402; 200 OHM; 1%; 100PPM, 0.0625W; THICK FILM 42 U2, U3 DNP 0 ADTT4-1+ MINI-CIRCUITS ADTT4-1+ SWTI PART-FRANSFORMER; SMT; 0.2.100HHz; SURFACE MOUNT RF TRANSFORMER; SMT; 0.2.100HHz; SURFACE MOUNT RF TRANSFORMER; SMT; 0.2.100HHz; SURFACE MOUNT RF TRANSFORMER;	35	C35-C38	DNP	0		KEMET;MURATA	10PF	CERAMIC CHIP; 10PF; 50V; TOL=5%; TG=-	
37 R22, R28, R31, R32, R41, R44, R45, R58, R39 DNP 0 RC0402/R070RL; CR402-16W-000RJT YAGEO PHYCOMP; VENKEL LTD. 0 RESISTOR; 0402: 0.0HM; 5%; JUMPER; 0.063W; THICK FILM 38 R26, R27 DNP 0 CRCW040249R9FK; RK73HIETTP49R9F VISHAY DALE;KOA SPEER 4.9.9 RESISTOR; 0402: 19.9 OHM; 1%; 100PPM; 0.0625W; THICK FILM Image: Comparison of the	36		DNP	0	C0402C104J4RAC	KEMET	0.1UF	CERAMIC; 0.1uF; 16V; 5%; X7R; -55degC to	
36 Rc6, R27 DNP 0 RK73H1ETTP49R9F VISHAT DALE, ROA SPEER 49.9 100PPM; 0.0625W; THICK FILM 39 R63, R64, R69, R70, R72, R73 DNP 0 CRCW04021K00FK; RC0402PR-071KL VISHAY DALE;YAGEO PHICOMP 1K RESISTOR; 0402; 1K; 1%; 100PPM; 0.0625W; THICK FILM 40 R65, R71, R74 DNP 0 CRCW0402200RFK VISHAY DALE 200 RESISTOR; 0402; 200 OHM; 1%; 100PPM; 0.0625W; THICK FILM 41 T1-T3 DNP 0 CRCW0402200RFK VISHAY DALE 200 RESISTOR; 0402; 200 OHM; 1%; 100PPM; 0.0625W; THICK FILM 42 U2, U3 DNP 0 ADTT4-1+ MINI-CIRCUITS ADTT4-1+ SF2208E EVKIT PART-TRANSFORMER; SMT; 0.2-120MHZ; SURFACE MOUNT RF TRANSFORMER 43 U4, U5 DNP 0 SAFFB1G57KE0F0A MURATA SAFFB1G57KE0F0A FILTER; SAW; HI-FREQUENCY CERAMIC SOLUTION; SMT; 1575.4MHZ 44 Y2 DNP 0 RAFFB1G57KE0F0A MURATA SAFFB1G57KE0F0A EVKIT PART-CRYSTAL; SMT 5X.32; 5PF TO 50PF; 16.368MHZ; +/- SPPM TO +/-S0PPM TO +/-S0PPM TO +/-S0PPM 45 R8, R10, R11, R23, R25 DNP	37	R22, R28, R31, R32, R41, R44,	DNP	0			0		
39 R70, R72, R73 DNP 0 RC0402FR-071KL PHICOMP 1K 100PPM; 0.0625W; THICK FILM 40 R65, R71, R74 DNP 0 CRCW0402200RFK VISHAY DALE 200 RESISTOR; 0402; 200 OHM; 1%; 100PPM; 0.063W; THICK FILM 41 T1-T3 DNP 0 ADTT4-1+ MINI-CIRCUITS ADTT4-1+ EVKIT PART -TRANSFORMER; SW, F10, 2.2-120MH2; SURFACE MOUNT RF TRANSFORMER 42 U2, U3 DNP 0 SF2208E MURATA SF2208E EVKIT PART-FILTER; SAW; SAW FILTER; SMU; 1227MHZ 43 U4, U5 DNP 0 SAFFB1G57KE0F0A MURATA SAFFB1G57KE0F0A FILTER; SAW; HI-FREQUENCY CERAMIC SOLUTION; SMT; 1575.4MHZ 44 Y2 DNP 0 RSX-5_16.368MHZ RAKON 16.368MHZ EVKIT PART -CRYSTAL; SMT 5X3.2; SPT D5 SOPF; 16.368MHZ; +/- SPPM TO +/-25PPM; TO -50PPM TO +/-50PPM 45 R8, R10, R11, R13, R19, R21, R23, R25 DNP 0 N/A N/A OPEN PACKAGE OUTLINE 0603 RESISTOR EVENT PART -CRYSTAL;	38	R26, R27	DNP	0		VISHAY DALE;KOA SPEER	49.9		
40R65, R71, R74DNP0CRCW0402200RFKVISHAT DALE200100PPM; 0.063W; THICK FILM41T1-T3DNP0ADTT4-1+MINI-CIRCUITSADTT4-1+EVKIT PART-TRANSFORMER; SMT; 0.2-120MHZ; SURFACE MOUNT RF TRANSFORMER42U2, U3DNP0SF2208EMURATASF2208EEVKIT PART-ILTER; SAW; SAW FILTER; SMD; 1227MHZ43U4, U5DNP0SAFFB1G57KE0F0AMURATASAFFB1G57KE0F0AFILTER; SAW; HI-FREQUENCY CERAMIC SOLUTION; SMT; 1575.4MHZ44Y2DNP0RSX-5_16.368MHZRAKON16.368MHZEVKIT PART-CRYSTAL; SMT 5X3.2; SPF TO 50PF; 16.368MHZ; +/- SPPM TO +/-S0PPM TO +/-S0PPM45R8, R10, R11, R13, R19, R21, R23, R25DNP0N/AOPENPACKAGE OUTLINE 0603 RESISTOR	39		DNP	0			1К		
41 T1-T3 DNP 0 ADTT4-1+ MINI-CIRCUITS ADTT4-1+ SMT; 0.2-120MHZ; SURFACE MOUNT RF 42 U2, U3 DNP 0 SF208E MURATA SF208E EVKIT PART-FILTER; SAW; SAW FILTER; SAW; BILTER; SAW; SAW FILTER; SAW; HI-FREQUENCY CERAMIC SOLUTION; SMT; 1575.4MHZ 43 U4, U5 DNP 0 SAFFB1G57KE0F0A MURATA SAFFB1G57KE0F0A FILTER; SAW; HI-FREQUENCY CERAMIC SOLUTION; SMT; 1575.4MHZ 44 Y2 DNP 0 RSX-5_16.368MHZ RAKON 16.368MHZ EVKIT PART -CRYSTAL; SMT 5X3.2; SPF TO SOPF; 16.368MHZ; +/- SPPM TO +/-SSPPM; TO +/-SSPPM TO +/-SSPPM 45 R8, R10, R11, R23, R25 DNP 0 N/A N/A OPEN PACKAGE OUTLINE 0603 RESISTOR	40	R65, R71, R74	DNP	0	CRCW0402200RFK	VISHAY DALE	200	100PPM; 0.063W; THICK FILM	
42 02, 03 0NP 0 SP2208E MURATA SP2208E SAW FILTER; SMD; 1227MHZ 43 U4, U5 DNP 0 SAFFB1G57KE0F0A MURATA SAFFB1G57KE0F0A FILTER; SAW; HI-FREQUENCY CERAMIC SOLUTION; SMT; 1575.4MHZ 44 Y2 DNP 0 RSX-5_16.368MHZ RAKON 16.368MHZ EVKIT PART -CRYSTAL; SMT 5X3.2; 5PF TO 50PF; 16.368MHZ; +/- 5PPM TO +/-50PPM EVKIT PART -CRYSTAL; SMT 5X3.2; 5PF TO 50PF; 16.368MHZ; +/- 5PPM TO +/-50PPM TO +/-50PPM 45 R8, R10, R11, R13, R19, R21, R23, R25 DNP 0 N/A OPEN PACKAGE OUTLINE 0603 RESISTOR	41	T1-T3	DNP	0	ADTT4-1+	MINI-CIRCUITS	ADTT4-1+	SMT; 0.2-120MHZ; SURFACE MOUNT RF	
43 04, 05 DNP 0 SAFPBIGS/REDUX SAFPBIGS/REDUX CERAMIC SOLUTION; SMT; 1575.4MHZ 44 Y2 DNP 0 RSX-5_16.368MHZ RAKON 16.368MHZ EVKIT PART -CRYSTAL; SMT 5X3.2; SPF TO 50PF; 16.368MHZ; +/- 5PPM TO +/-55PPM; TO +/-55PPM TO +/-50PPM 45 R8, R10, R11, R23, R25 DNP 0 N/A OPEN PACKAGE OUTLINE 0603 RESISTOR EVENT	42	U2, U3	DNP	0	SF2208E	MURATA	SF2208E		
44 Y2 DNP 0 RSX-5_16.368MHZ RAKON 16.368MHZ SMT 5X3.2; 5PF TO 50PF; 16.368MHZ; +/- 5PPM TO +/-55PPM TO +/-55PPM 45 R8, R10, R11, R13, R19, R21, R23, R25 DNP 0 N/A N/A OPEN PACKAGE OUTLINE 0603 RESISTOR PACKAGE OUTLINE 0603	43	U4, U5	DNP	0	SAFFB1G57KE0F0A	MURATA	SAFFB1G57KE0F0A		
45 R13, R19, R21, DNP 0 N/A N/A OPEN RESISTOR RESISTOR	44	Y2	DNP	0	RSX-5_16.368MHZ	RAKON	16.368MHZ	SMT 5X3.2; 5PF TO 50PF; 16.368MHZ; +/-	
TOTAL 146	45	R13, R19, R21,	DNP	0	N/A	N/A	OPEN		
	TOTAL			146					

MAX2771 EV Kit Bill of Materials (continued)



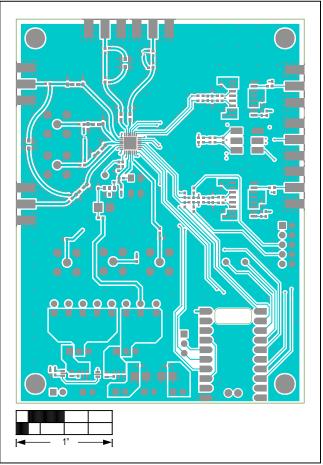
Evaluates: MAX2771

Evaluates: MAX2771



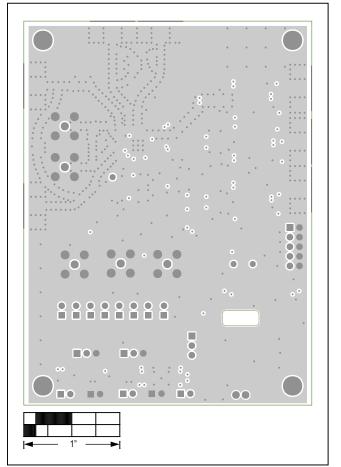
MAX2771 EV Kit PCB Layout Diagrams

MAX2771 EV Kit—Top Silkscreen



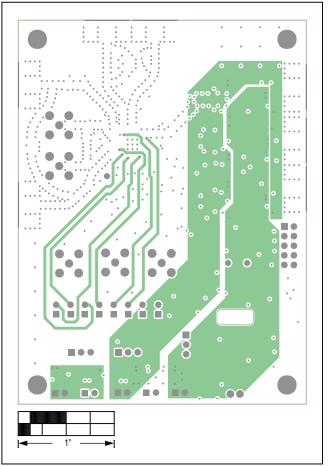
MAX2771 EV Kit—Top

Evaluates: MAX2771

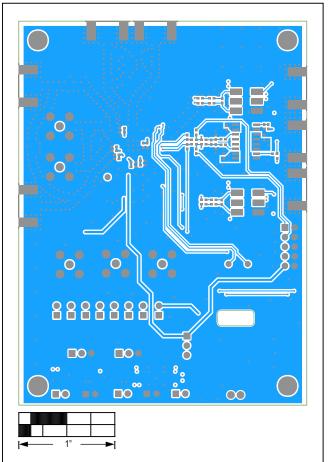


MAX2771 EV Kit PCB Layout Diagrams (continued)

MAX2771 EV Kit—Level 2 GND

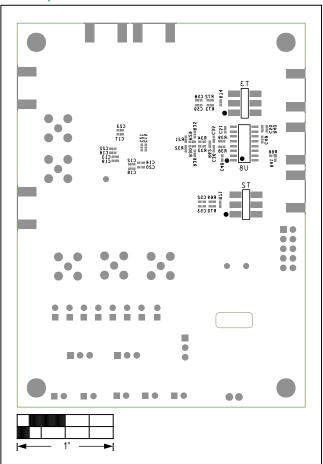


MAX2771 EV Kit—Level 3 PWR



MAX2771 EV Kit PCB Layout Diagrams (continued)

MAX2771 EV Kit—Bottom



MAX2771 EV Kit—Bottom Silkscreen

Evaluates: MAX2771

Revision History

REVISION	REVISION	DESCRIPTION	PAGES
NUMBER	DATE		CHANGED
0	8/18	Initial release	—

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