

## MAX22506E Evaluation Kit

Evaluates: MAX22506E

### General Description

The MAX22506E evaluation kit (EV kit) is a fully assembled and tested PCB that demonstrates the functionality of the MAX22506E half-duplex, high speed RS-485/RS-422 transceiver. The EV kit operates from a single 3V to 5.5V supply and includes selectable on-board termination.

### Features

- Operates From a Single 3V to 5.5V Supply
- Terminal Block Connectors for Easy RS-485/RS-422 Evaluation
- Fully Assembled and Tested

### Quick Start

#### Required Equipment

- MAX22506E EV kit
- 3.3V, 500mA DC power supply
- 50MHz Signal/function generator
- Oscilloscope

### Startup Procedure

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

- 1) Ensure that all jumpers are in their default positions (see [Table 1](#)).
- 2) Set the DC power supply to 3.3V and connect the DC power supply between VCC (TP1) and GND (TP2) test points on the EV kit.
- 3) Connect the oscilloscope probes to the DI input (TP7), A (TP8), B (TP9), and RO (TP4).
- 4) Turn on the power supply.
- 5) Set the signal/function generator to output a 25MHz 0-to-3V square wave.
- 6) Connect the signal/function generator to the DI test point.
- 7) Using the oscilloscope, verify that the A, B, and RO-outputs switch as the DI signal toggles.

[Ordering Information](#) appears at end of data sheet.



## Detailed Description of Hardware

The MAX22506E EV kit is a fully assembled and tested circuit board for evaluating the MAX22506E high-speed, half-duplex RS-485/RS-422 transceiver (U1). The EV kit can be used for standalone evaluation or can be connected (using the on-board terminal block) to an RS-485/RS-422 network for easy in-system evaluation.

### Driver and Receiver Enable Selection

The EV kit features three jumpers (J2, J4, and J5) to enable/disable the driver and receiver outputs. Set J2 to low (2-3) to enable the receiver. Set J4 to high (1-2) to enable the driver.

To actively control both enables, remove the J2 and J4 shunts and close J5, which connects DE and  $\overline{RE}$  together. J5 is DNI, by default. Install a 2-pin header to use the J5 jumper.

### Termination for an End-of-Line Transceiver

The MAX22506E EV kit includes a 120 $\Omega$  termination resistor (R2) between the A and B RS-485 driver outputs/receiver inputs on the MAX22506E.

**Table 1. Jumper Table (J2, J4, J5)**

JUMPER	SHUNT POSITION	DESCRIPTION
J2	1-2	$\overline{RE}$ is high. The RS-485 receiver is disabled.
	2-3*	$\overline{RE}$ is low. The RS-485 receiver is enabled.
J4	1-2*	DE is high. The RS-485 driver outputs are enabled.
	2-3	DE is low. The RS-485 driver outputs are disabled.
J5	Open*	DE and $\overline{RE}$ are not connected together.
	Closed	DE and $\overline{RE}$ are connected together.

\*Default position.

## Ordering Information

PART	TYPE
MAX22506EEVKIT#	EV Kit

#Denotes RoHS compliance.



# MAX22506E Evaluation Kit

Evaluates: MAX22506E

## MAX22506E EV Kit Bill of Materials

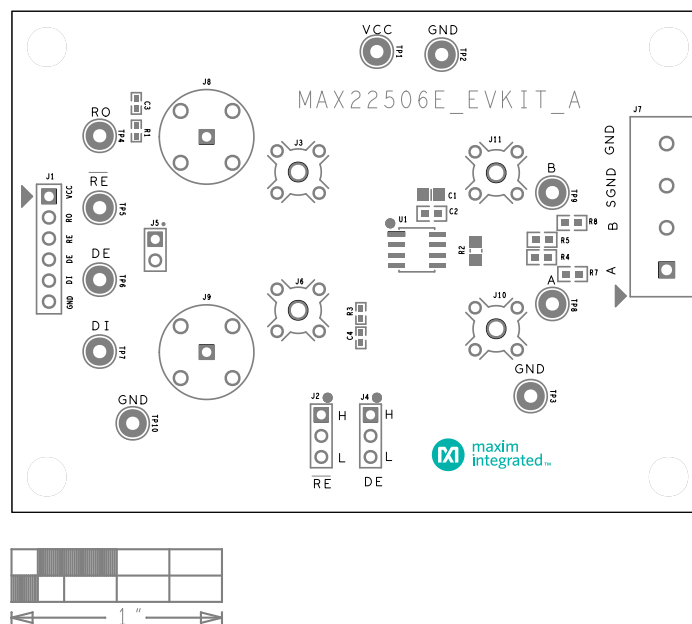
ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
1	C1	-	1	GRM21BR61A106KE19;ECJ-2FB1A106; CL21A106KPCLQNC;GRM219R61A106KE44	MURATA;PANASONIC; SAMSUNG ELECTRONICS;MURATA	10UF	CAPACITOR; SMT (0805); CERAMIC CHIP; 10UF; 10V; TOL=10%; MODEL=; TG=-55 DEGC TO +85 DEGC; TC=X5R
2	C2	-	1	C0603C104K5RAC;C1608X7R1H104K; ECJ-1VB1H104K;GRM188R71H104KA93; CGJ3E2X7R1H104K080AA; C1608X7R1H104K080AA;CL10B104KB8NNN; CL10B104KB8NFN	KEMET;TDK;PANASONIC;MURATA; TDK;TDK;SAMSUNG ELECTRO- MECHANICS; SAMSUNG ELECTRONICS	0.1UF	CAPACITOR; SMT (0603); CERAMIC CHIP; 0.1UF;50V; TOL=10%; TG=-55 DEGC TO +125 DEGC; TC=X7R;
3	J2, J4	-	2	PCC03SAAN	SULLINS	PCC03SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT THROUGH; 3PINS; -65 DEGC TO +125 DEGC
4	J7	-	1	OSTTC042162	ON-SHORE TECHNOLOGY INC	OSTTC042162	CONNECTOR; FEMALE; THROUGH HOLE; TERMINAL BLOCK ONE PIECE WIRE PROTECTOR; COLOR BLUE; RIGHT ANGLE; 4PINS
5	J8, J9	-	2	5-1634503-1	TE CONNECTIVITY	5-1634503-1	CONNECTOR; FEMALE; THROUGH HOLE; LOW PROFILE BNC PCB SOCKET; STRAIGHT; 5PINS
6	R2	-	1	CRCW0805120RFK	VISHAY DALE	120	RESISTOR; 0805; 120 OHM; 1%; 100PPM; 0.125W; THICK FILM
7	R4-R6	-	3	CRCW06030000ZS;MCR03EZPJ000; ERJ-3GEY0R00	VISHAY DALE;ROHM; PANASONIC	0	RESISTOR; 0603; 0 OHM; 0%; JUMPER; 0.10W; THICK FILM
8	SPACER1-SPACER4	-	4	9032	KEYSTONE	9032	MACHINE FABRICATED; ROUND-THRU HOLE SPACER; NO THREAD; M3.5; 5/8IN; NYLON
9	TP1	-	1	5010	KEYSTONE	N/A	TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; RED; PHOSPHOR BRONZE WIRE SIL;
10	TP2, TP3, TP10	-	3	5011	KEYSTONE	N/A	TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; BLACK; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
11	TP4-TP9	-	6	5014	KEYSTONE	N/A	TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; YELLOW; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
12	U1	-	1	MAX22506EASA+	MAXIM	MAX22506EASA+	EVKIT PART - IC; 50MBPS HALF-DUPLEX RS-485/RS-422 TRANSCEIVERS WITH HIGH EFT IMMUNITY; PACKAGE OUTLINE DRAWING: 21-0041; PACKAGE CODE: S8+2C; PACKAGE LAND PATTERN: 90-0096
13	PCB	-	1	MAX22506E	MAXIM	PCB	PCB:MAX22506E
14	C3, C4	DNP	0	C0402C103K5RAC;GRM155R71H103KA88; C1005X7R1H103K050BE;CL05B103KB5NNN; UMK105B7103KV	KEMET;MURATA;TDK; SAMSUNG ELECTRONIC; TAIYO YUDEN	0.01UF	CAPACITOR; SMT (0402); CERAMIC CHIP; 0.01UF; 50V; TOL=10%; TG=-55 DEGC TO +125 DEGC; TC=X7R
15	J1	DNP	0	PBC06SAAN	SULLINS ELECTRONICS CORP.	PBC06SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 6PINS; -65 DEGC TO +125 DEGC
16	J3, J6, J10, J11	DNP	0	131-5031-00	TEKTRONIX	131-5031-00	CONNECTOR; WIREMOUNT; 3 GHZ 20X LOW CAPACITANCE PROBE; STRAIGHT; 5PINS
17	J5	DNP	0	PCC02SAAN	SULLINS	PCC02SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT THROUGH; 2PINS; -65 DEGC TO +125 DEGC
18	R1, R3	DNP	0	CRCW0402100RFK; 9C04021A1000FL; RC0402FR-07100RL	VISHAY DALE;PANASONIC; YAGEO PHYCOMP	100	RESISTOR; 0402; 100 OHM; 1%; 100PPM; 0.063W; THICK FILM
19	R7, R8	DNP	0	CRCW06031K00FK;ERJ-3EKF1001	VISHAY DALE;PANASONIC	1K	RESISTOR; 0603; 1K; 1%; 100PPM; 0.10W; THICK FILM
TOTAL			27				



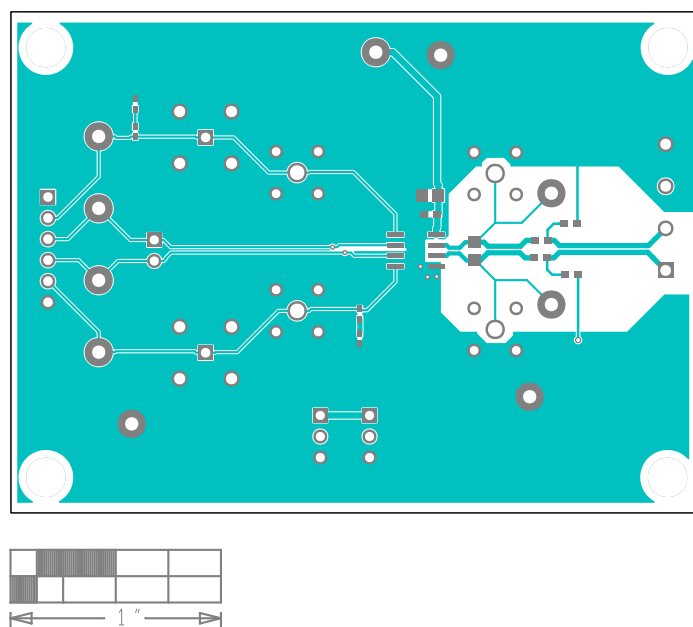




## MAX22506E EV Kit PCB Layout Diagrams



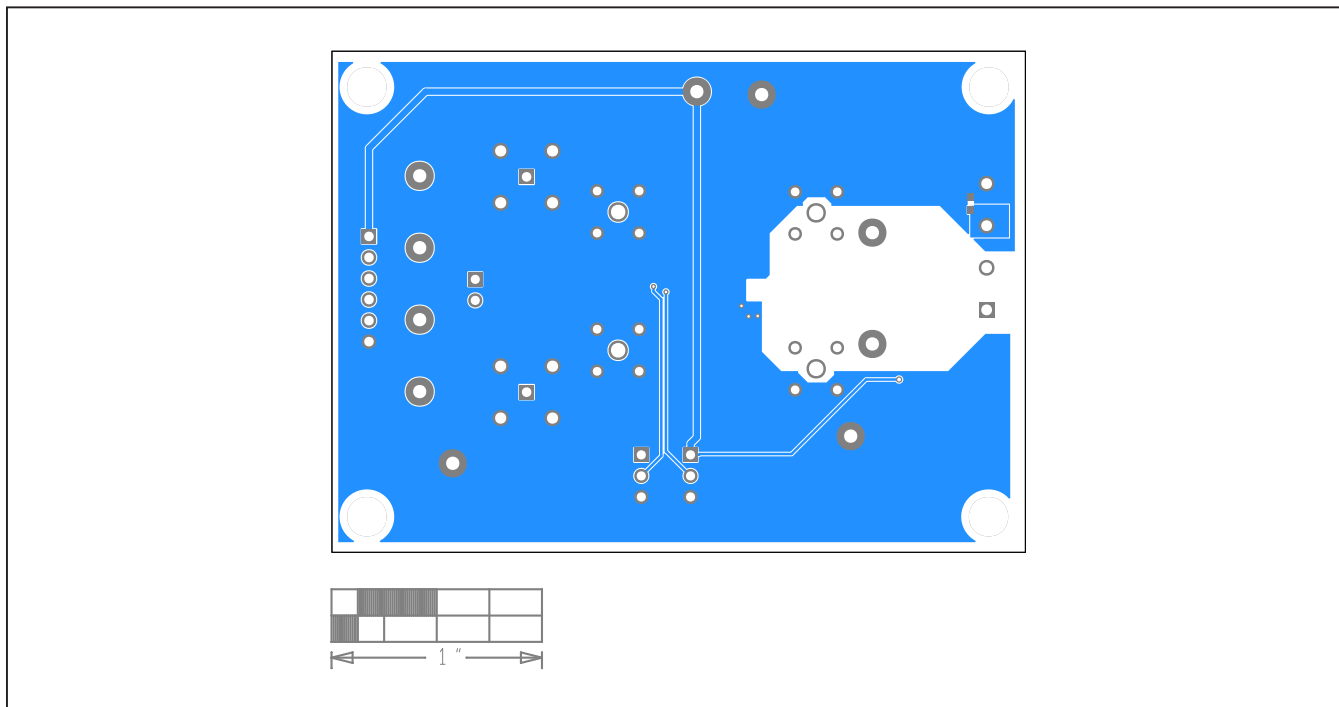
MAX22506E EV Kit—Top Silkscreen



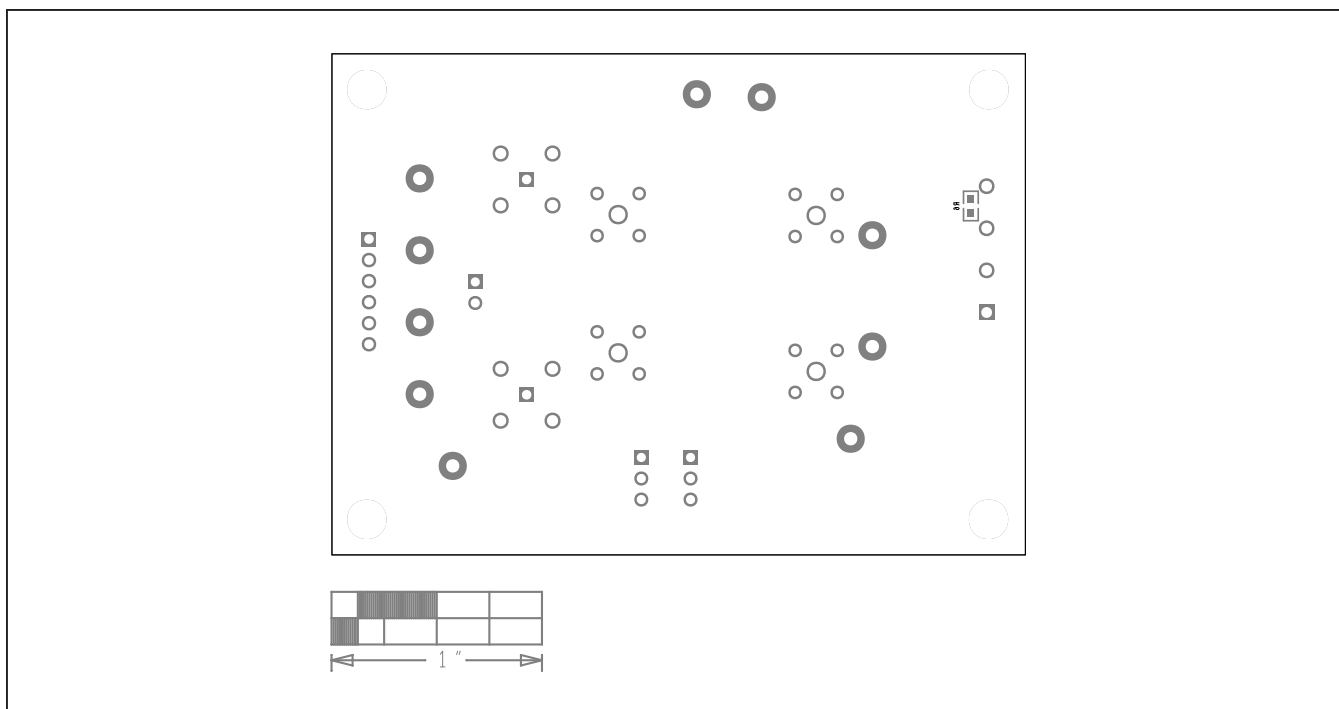
MAX22506E EV Kit—Top



## MAX22506E EV Kit PCB Layout Diagrams (continued)



MAX22506E EV Kit—Bottom



MAX22506E EV Kit—Bottom Silkscreen



## Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	2/21	Initial release	—

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