

XTR50011-D EVALUATION BOARD

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ABSTRACT

This application note describes how to use the XTR50011-D Evaluation Board. This covers XTR50011-D features and describes how to evaluate them.

INTRODUCTION

The XTR50011-D Evaluation Board is a laboratory tool for measurement and design validation. It is not expected to be used as a production tool. It enables end user to test application at high temperature up to 200degC.

The Evaluation Board does not come equipped with a XTR50011-D device in the board socket. A device must be procured and the socket populated by the end user for operation.

The board is metallic marked "11" in the bottom right corner for identification.

Note:

This document refer to the XTR50010 datasheet. Please review up to date version of this XTR50010 datasheet for any further product detailed information.

XTR50011-D EVALUATION BOARD BOM

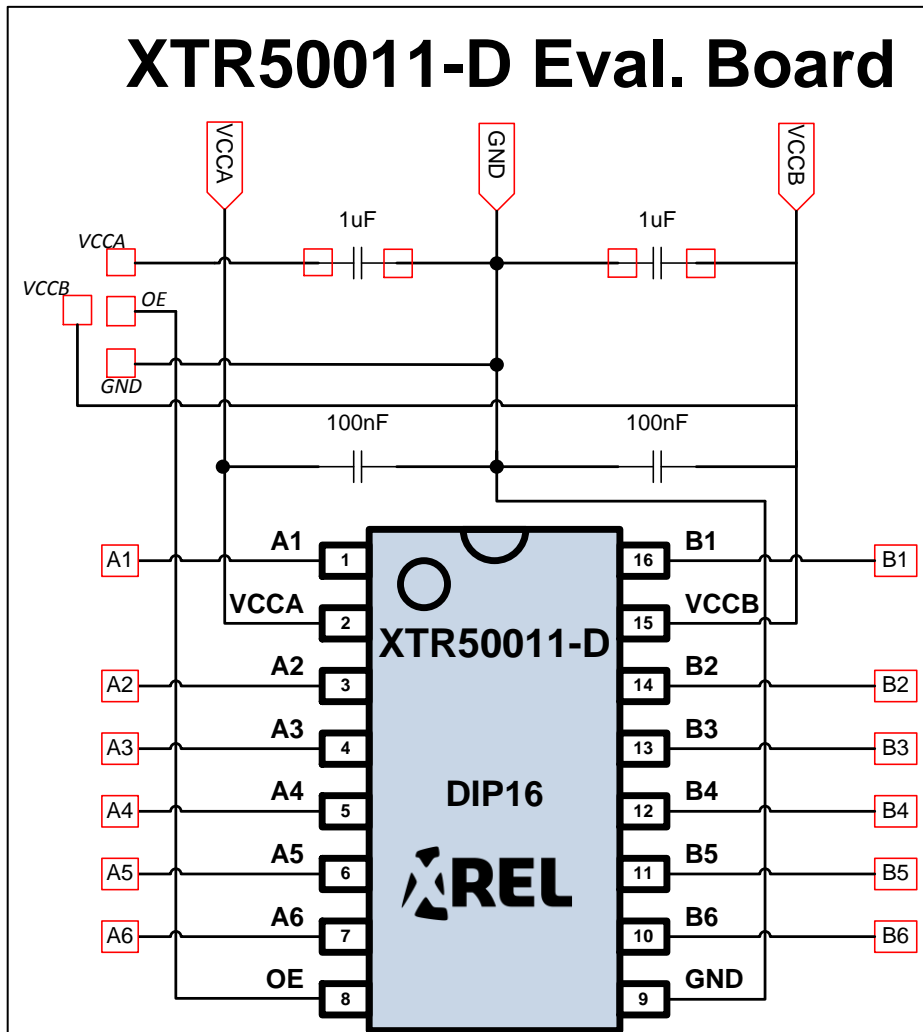
- 3 wires (PTFE rated at 250degC) to connect VCCA, VCCB and GND. Those 3 wires are labeled accordingly.
- 1uF capacitors X7R rated 125degC: 2pcs
- 100nF capacitors NPO rated 200degC: 2pcs
- Jumper top set up OE XTR50011-D pin voltage: VCCA, VCCB or GND.
This jumper is made of metal wire to be connected to 2 single connector receptacles (Digikey Ref. ED90066-ND)
- 16 pin socket for the XTR50011-D built using single connector receptacles (Digikey Ref. ED90066-ND).
- Ports A and B 7 bit channel single point connector to solder every individual signal for level translation through the XTR50011-D.

XTR50011-D EVALUATION BOARD FEATURES

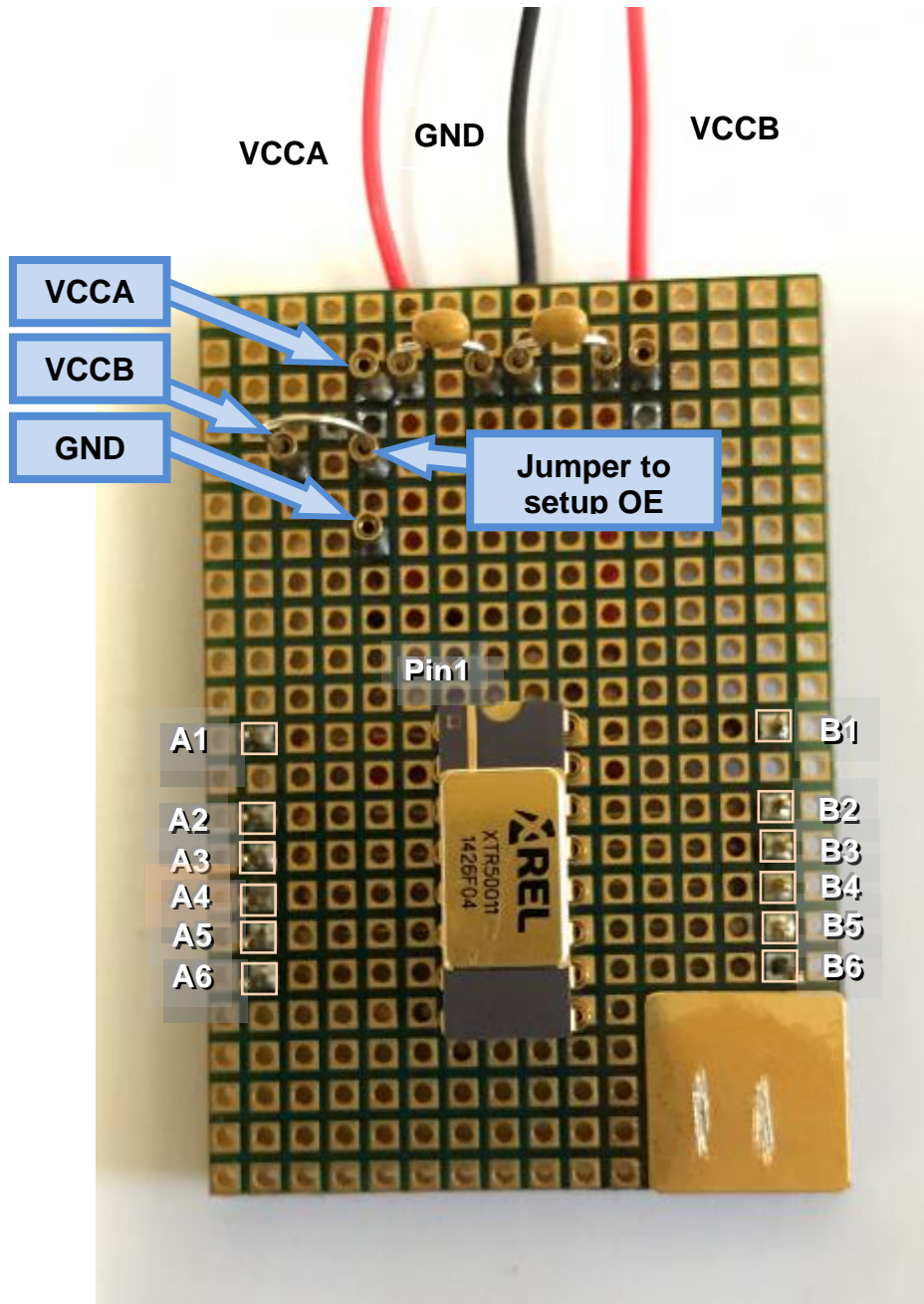
The XTR50011-D Evaluation Board feature enables the end user to easily exercise each of the ports A and B and assess XTR50011 features as part of its final design.

For further information about the XTR50011-D features and characteristics please refer to the XTR50010 datasheet.

The board is built from below schematic:



Below is a photo of the Evaluation Board:



The Evaluation Board is built using materials and devices able to operate up to steady 200degC for 2000Hrs continuously. It is built on a Polyimide Breadboard and used solder is High Melting Point type.

In the center of the board an empty socket is located to host a XTR50011-D part. The board is delivered without this part.

This socket enables the end user to change the XTR50011-D part whenever it is needed.

This board has 3 wires hooked up to it:

- VCCA
- VCCB
- GND

Those 3 wires are tagged with above names and refer respectively to the XTR50011-D pins VCCA, VCCB and GND. End user is free to connect VCCA and VCCB in line to what fits best his design and his testing purpose.

A jumper is implemented to set OE signal which is connected to XTR50011-D pin of the same name. Thanks to this jumper OE signal can be connected to either of the following: VCCA, VCCB or GND.

Orientation of the XTR50011-D part is indicated on the photo as pin 1.

At the top of the board are two X7R 1uF capacitors are hooked up to single connector receptacle. Their purpose is to decouple the power supply VCCA and VCCB against GND at the entry point of the board. They are 125degC rated and will derate at temperature above 125degC. However their capacitance value will remain good enough to achieve the board entry filtering considering a close loop XTR50011-D power supply decoupling is achieved by two NPO capacitors of 100nF each. Those are soldered in close contact with the XTR50011-D socket.

For extended life above 175degC, the end user may replace the two 1uF X7R capacitors with higher capacitance capacitors to take in account derating.

Each port A and B channel bit is connected to a single point connector equivalent (refer to above board photo) by a bare metal wire soldered on the bottom side of the board.

XTR50011-D EVALUATION BOARD OPERATION

End user has to solder VCCA, VCCB and GND to proper power supply required by his design. VCCA and VCCB are the 2 voltage domains in between the level shifter chip XTR50011-D is set.

End user has to select the OE jumper position among the 2 possible ones:

- VCCA or VCCB selecting the one voltage which is up when the level shifter is supposed to be active.
- GND if the XTR50011-D output are supposed to be at High Impedance state.

Each individual port A and B bits are to be connected respectively to every bit signal the level shifter is expected to translate respecting the voltage domains:

- All port A bits must be referring to VCCA voltage
- All port B bits must be referring to VCCB voltage

Port A and B bits are single point connector. End user can either use single bit female connector or solder a wire.

Prior to be shipped the Evaluation Board has been extensively tested.

Note:

Prior to power up the board make sure metal material or any direct electric conductor is held away from being in contact with the Evaluation Board bottom side to prevent any short circuit which may either damage the board and the XTR50011-D part.

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