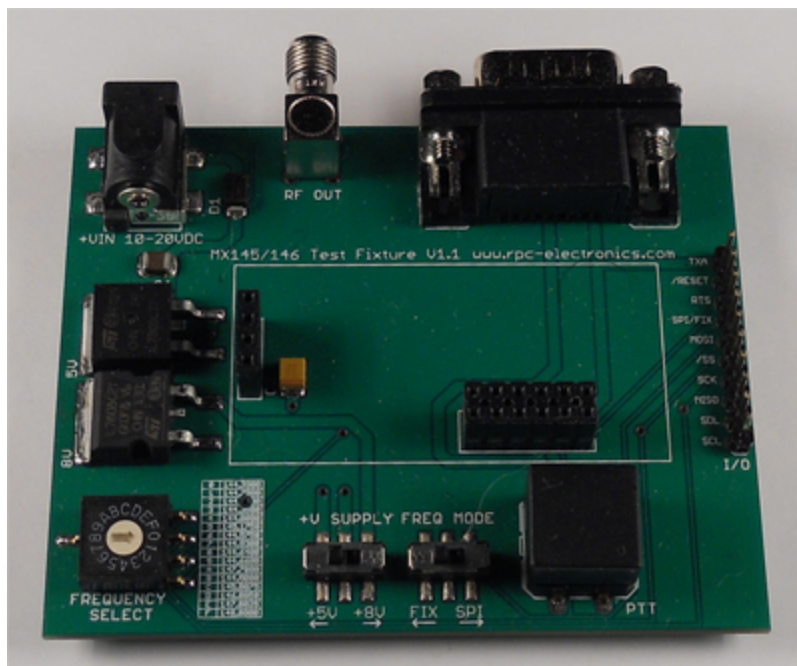




RPC Electronics, LLC

SRB MX14x Test Fixture

User's Manual



Rev A.

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1. Introduction

Thank you for purchasing the SRB MX14x Test Fixture! This fixture serves as a complete test bed for the Small RF Budget MX146, MX146LV and MX145 family of VHF (2M) transmitter modules. This test fixture can power the module, key via local PTT control, change frequency utilizing the built-in frequency table and provides a full interface to the I2C and SPI programming interfaces.

2. Package Contents

Upon opening the package, you will find the following items:

- SRB MX14x Test Fixture
- Quick-Reference frequency switch table

3. Device Overview

The MX14x Test Fixture was designed to give you a fully functional platform for testing every aspect of the module plugged into the fixture. From the simple function of keying the radio to the ability to change frequency, measure output power and talk to it via the SPI or I²C programming interfaces (external hardware/software required).

a. Interface Connections

Power

The power connection is a standard coaxial style jack with a positive (+) 2.1mm center pin. The voltage input level can be +10-20 VDC.

RF Output

The RF connector is a standard polarity female SMA. This low loss connector is a perfect match for the low power output of the MX14x modules. It's recommended that any test cables between the measurement equipment and the MX14x test fixture utilize a single SMA connector and avoid using adapters that might cause attenuation of the RF signal.

Audio/External PTT

The audio injection port is a DB9 male connector. The pinout follows the popular Kantronics/APRS Tracker scheme to make connecting a keying/audio source simple.

Pinout

Pin 1	Transmit Audio
Pin 2	No Connection
Pin 3	Push To Talk
Pin 4	No Connection
Pin 5	No Connection
Pin 6	Ground
Pin 7	Input Voltage (Optional from primary coaxial power jack)
Pin 8	No Connection
Pin 9	No Connection

Extended I/O Header

This header is used to interface to the SPI and I²C programming pins on MX14x

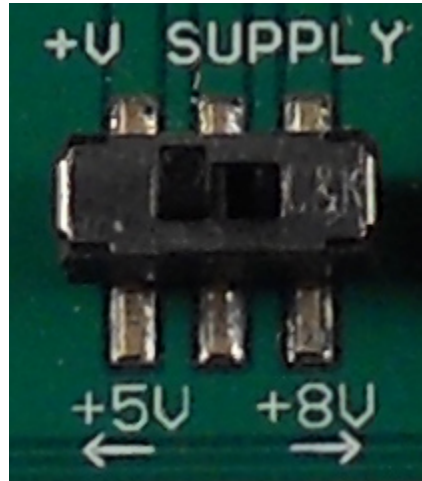
module.



b. Module Supply Voltage Control

The MX14x test fixture includes both 5VDC and 8VDC voltage regulators. For this reason, the minimal input voltage needs to be at least 10VDC to cover the overhead on the 8VDC regulator.

The voltage is set via one of the on-board slide switches

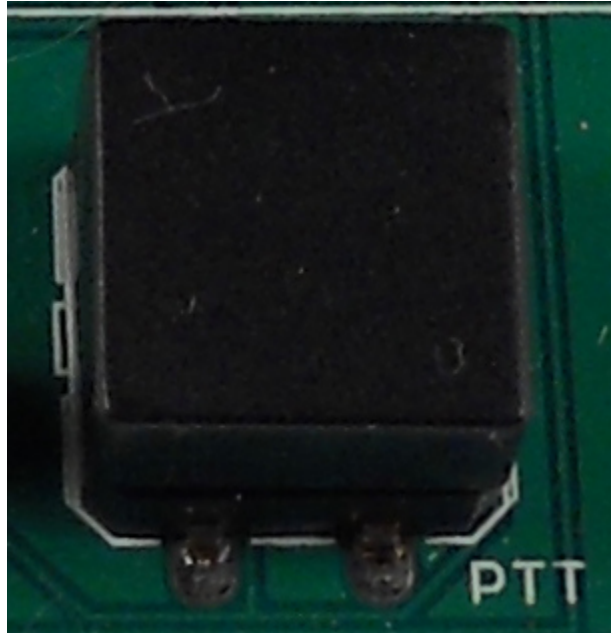


IMPORTANT! When selecting the voltage, be sure to select the voltage required for the model being tested!

Note: The newest model, the MX145H is dual-voltage tollerant, 5V or 8V. The voltage level used determines the ouput power level

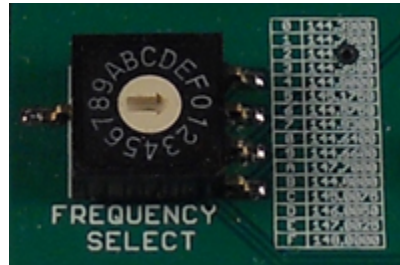
c. Local PTT Control

The on-board local PTT is a momentary switch that can be used to force the module into transmit. The PTT will stay asserted as long as this button is held in.



d. Frequency Selector

The MX14x module is in FIX frequency mode, the on-board 16 position rotary switch is used to pick from a table of pre-determined frequencies.



Channel Number	Frequency
F	144.3900
E	144.7900
D	144.9900
C	144.3500
B	144.8000
A	145.1750
9	144.5750
8	144.9300
7	144.6400
6	144.6600
5	147.7000
4	144.0000
3	145.0075
2	146.0050
1	147.0025
0	148.0000

NOTE: The table printed on the test fixture is not correct. Please refer to the table above.

IMPORTANT! The FIX/SPI switch labeling is reversed. Please select the “SPI” position to use the on-board frequency select switch.