
TECHNICAL NOTE TN-994
**Calibrating and Operating a TB8100 Receive
only Reciter**

12 April 2005

Applicability

TBA5XXX-XXXX receive only reciters

1. Introduction

When using the Calibration Kit software, the functions associated with the exciter no longer work. Changes also have to be made to the alarm control in the Service Kit software. These changes are detailed in section 2.

The TBA50XX reciter has no transmitter enabled and requires a different method of tuning the 12.8MHz reference TCXO than measuring the transmitter frequency. Section 3 in this technical note details an alternative method to adjust the 12.8MHz TCXO.

2. Changes to Standard Setup

Calibration Kit Software.

The following calibration options are supported by the receive only reciter

- **Frequency Setup Tab:**
 - Set Receiver VCO
 - Tune Receiver Front End
- **Reciter Calibration Tab**
 - RSSI Calibration
 - Balanced Line Calibration
 - Unbalanced Line Calibration

The following calibration options are **NOT** supported by the receive only reciter

- **Frequency Setup Tab:**
 - Set Exciter VCO
- **Reciter Calibration Tab**
 - FCL Auto Tuning
 - FCL Calibration
 - VCO Calibration
 - Carrier Freq offset adjustment

Service Kit Software.

The following alarms need to be **disabled** in the Service Kit software.

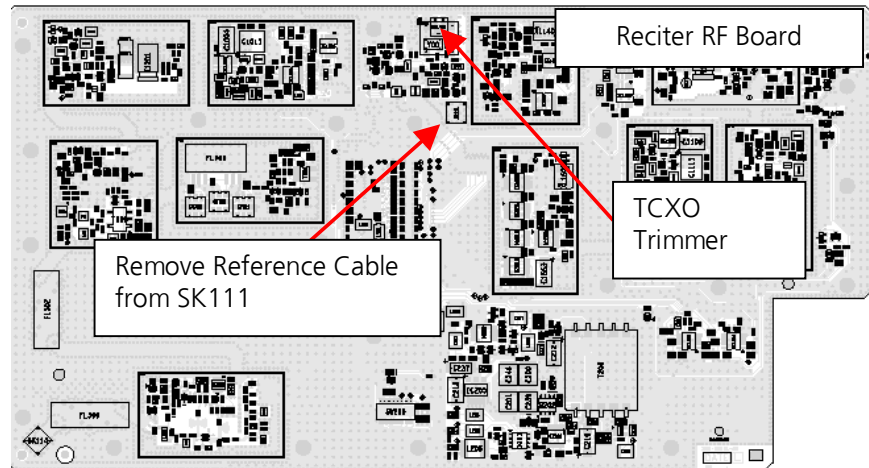
- Open the Configure > Alarms > Alarm Control window and disable the "No PA detected" alarm in the Power Amplifier alarm control section.
- While in the same window, locate the reciter alarm section and disable the "Synthesiser out of lock" "Exciter" alarm.

3. Adjusting The TCXO

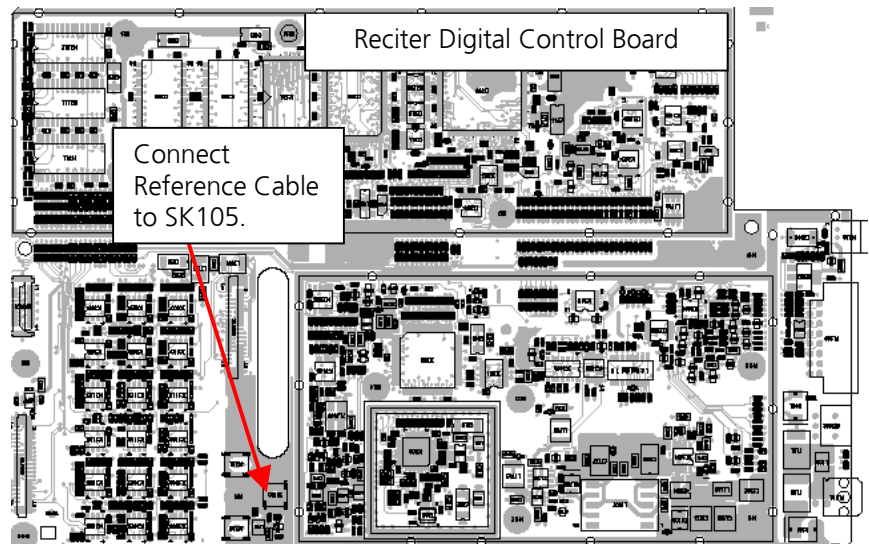
Caution: Observe electrostatic precautions when carrying out this procedure.

The 40MHz clock is phase locked to the 12.8MHz TCXO reference, and therefore can provide an indirect method of tuning the TCXO. To measure this frequency and tune the TCXO, the following steps can be carried out.

- Remove the side covers from the reciter.
- Identify the RF PCB as shown below.



- Locate the external reference connector on the back of the reciter identified by the label REF. The cable from this connector will be plugged into SK111 shown above.
- Release the external reference cable from it's retaining clips on the reciter RF board and unplug the cable from SK111 by carefully lifting the connector.



- Turn the reciter over to see the digital control board.
- Carefully plug the reference cable into SK105 shown above.
- Measure the 40MHz clock frequency by connecting a suitable frequency counter to the external reference (REF) BNC connector.
- Adjust the TCXO trimmer (see page 1) to set the clock frequency to within 4Hz of 40MHz (0.1ppm).
- After the TCXO frequency is set, reconnect the external reference cable to SK111 on the reciter RF board and secure it into the retaining clips.

- Replace the side covers on the reciter.

4. Issuing Authority

Name and Position of Issuing Officer	Jeff Northcott Senior Technical Support Engineer		
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