

UK Microwave Group 10GHz Loan Equipment Basic Description and Operating Instructions.

Introduction

As part of its membership benefits, the UKuG loans out items of GHz bands equipment for short periods, usually 6 months. This allows members to get an idea about operation on the various bands before committing time and money to their own equipment. The equipment represents the type of equipment that can be assembled from a combination of homebrew, surplus and commercial parts.

SYSTEM DESCRIPTION

Built by G4BAO, it consists of a G4DGU 10GHz – 144MHz transverter and a 1.5W PA in a weatherproof diecast box (1) All transmit receive switching is provided in the box, controlled by the external transceiver. It connects to a GW4DGU feedhorn on a 45cm Sky dish via a short SMA patch lead. It has a mounting bracket for an up to 2-inch pole. Cabling for operation with an FT817 is provided. Other rigs can be used but great care must be taken not to exceed the drive levels.

The Transverter produces approximately 1.5W on 10368MHz with a maximum 144MHz drive of 2 Watts.

UNDER NO CIRCUMSTANCES INCLUDING TRANSIENT SHOULD THE DRIVE EXCEED THIS POWER.

This corresponds to the FT817 "two bar" power level with a 13.8V supply and it is strongly recommended that the "**one bar**" setting is used.

The transverter has the following, clearly marked, connectors and cables:

- Powerpoles for connection to the 12V supply
- N female for 144MHz IF input
- N female for 10MHz reference input
 - The transverter can be run with or without an external 10MHz reference but if run without, it will be unlocked and may be slightly "off frequency"
- Sma female for 10GHz in/out connection to feedhorn
- Mini power plug to provide 12V to the FT817
- Bulgin Buccaneer connector wired for connection to power and control lead to an FT817
- 8 pin Mini DIN for connection to the FT817 ACC connector
 - TXGND pin provides a PTT low signal to the transverter
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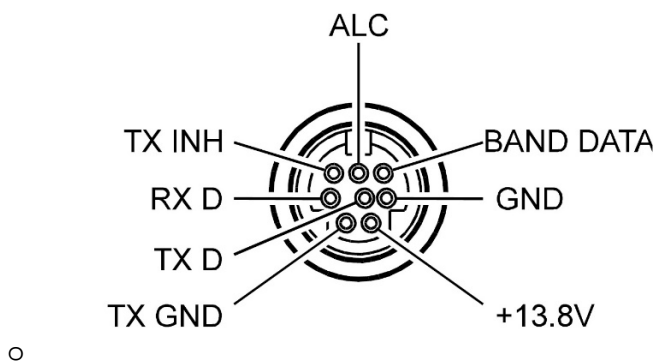


Figure 1 Connections on the FT817 Mini Din plug. looking at solder side of plug (NOT THE PINS)

BASIC OPERATION

Mount the dish on a vertical pole or tripod with the feedhorn at the bottom. As the dish is an offset one, the dish face will point downwards by about 27 degrees to beam at the horizon.

It is already set to this for a vertical pole so there is no need to adjust the dish angle

Connect up 12V power to the powerpoles, the SMA patch lead to the feed and transverter (Do not overtighten! Use fingers only unless you have the correct torque wrench for SMA connectors!)

Under no circumstances should you operate the transverter without the feed connected, there is no VSWR protection for the PA!

Connect up the DC power to the FT817 and the lead to the ACC connector.

If you are **NOT** using an FT817 you must make up an adaptor lead for your radio PTT line to plug the DIN plug in to.

Under no circumstances should you take the connector apart and rewire it!

Pressing the PTT on the FT817 should make the transverter transmit. If you listen carefully you will here the transverter's internal relay make a click.

Notes

- 1. While the box is weatherproof, the connectors etc are not, so for any operation outdoors you are responsible for providing weather protection. For short portable operations, a plastic bag can be used to keep the rain off, but for more permanent installations, proper weatherproofing of all connectors and leads is the responsibility of the loanee.***