

## Using the Trig Avionics TY9x and compatible VHF transceivers on MGL Avionics iEFIS systems.



### General

The Trig TY91 transceiver supports two different interface formats: RS232 and the Trig Avionics propriety TMAP interface (RS485 based).

All MGL EFIS systems supporting remote radio interfaces support the RS232 interface which uses a Garmin compatible communications format. This format allows you to set frequencies and the selected frequencies can be displayed on the EFIS.

The TMAP interface allows you, in addition to configure the radio (volume and the various settings on the radio), select dual watch operation and other functions. This makes the TMAP interface an option should you want to install the radio body without a control head (remote radio control via the EFIS). Note however, that it is possible to install the Trig control head in addition to control via the EFIS.

You can use either the RS232 connection using the Garmin compatible communications protocol with basic functionality (this requires that your Trig TY9x has its own control head so you can set volume etc) or you can use the TMAP interface. In this case you can use either the TY9x transceiver body on its own (all control via the EFIS) or you can also install a Trig control head in addition (this allows you to control the TY9x from either device).

### Firmware requirements

In order to use the Trig TY9x TMAP on an iEFIS system the following minimum firmware versions need to be installed:

iEFIS G3 with iBOX (regular iEFIS system): 1.0.2.9

iEFIS G2 with iBOX (regular iEFIS system): 3.0.0.2

iBOX Firmware: 18 (Release date code 100516)

iEFIS G3 Lite: 1.0.2.9

iEFIS Extender if used with Lite: 13 (Release date code 100516)

Current firmware is available on the MGL Avionics website under the “Firmware” tab. Installation instructions are on the relevant pages under this tab.

Note that the iBOX and Extender (if used) firmware requires updating if you are using an earlier version. This does not apply to Extenders connected via the CAN bus as these do not use their RS232 ports.

## **TMAP interface connection to the iEFIS**

The transceiver offers two TMAP connections. These are two connections onto the same TMAP bus so you can use either connection as you prefer.

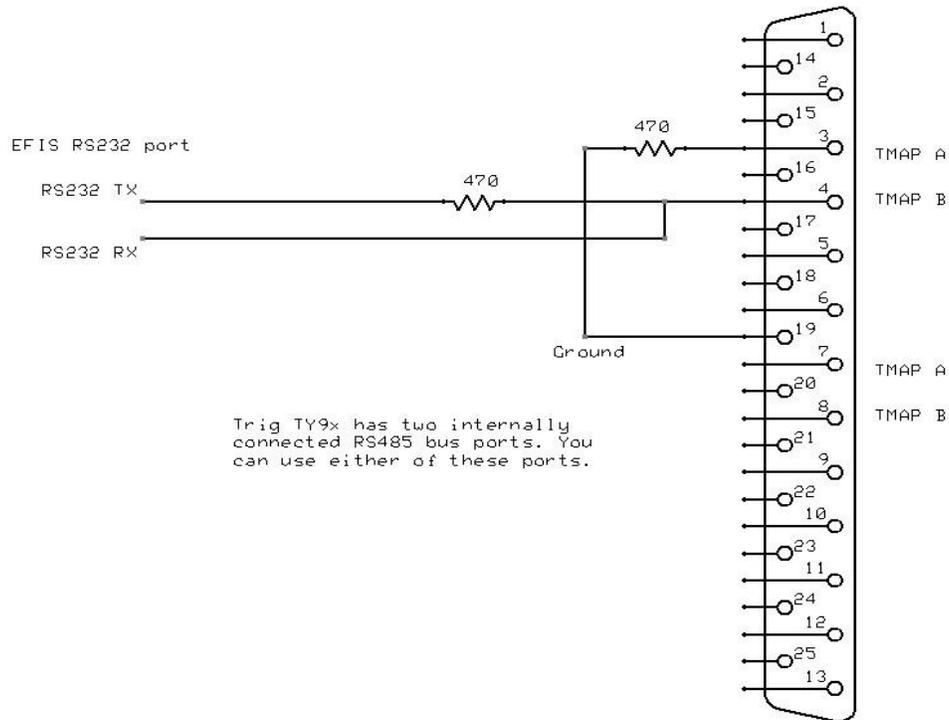
The iEFIS is connected via one of the RS232 ports which are capable of operating in a half duplex mode to satisfy the requirements of the RS485 TMAP interface.

The RS232 TX line is connected to TMAP B via a 470 ohm resistor.

The RS232 RX line is connected to TMAP B directly.

The TMAP A line is connected to ground via a 470 ohm resistor.

Should you also like to connect a Trig control head, it is recommended to use the second TMAP interface on the transceiver body.



## Configuration of the iEFIS

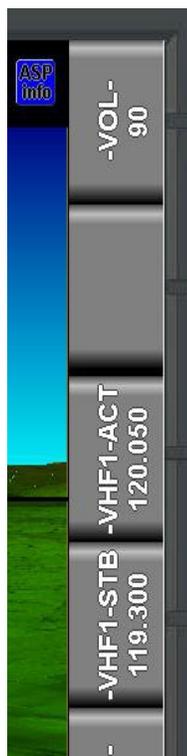
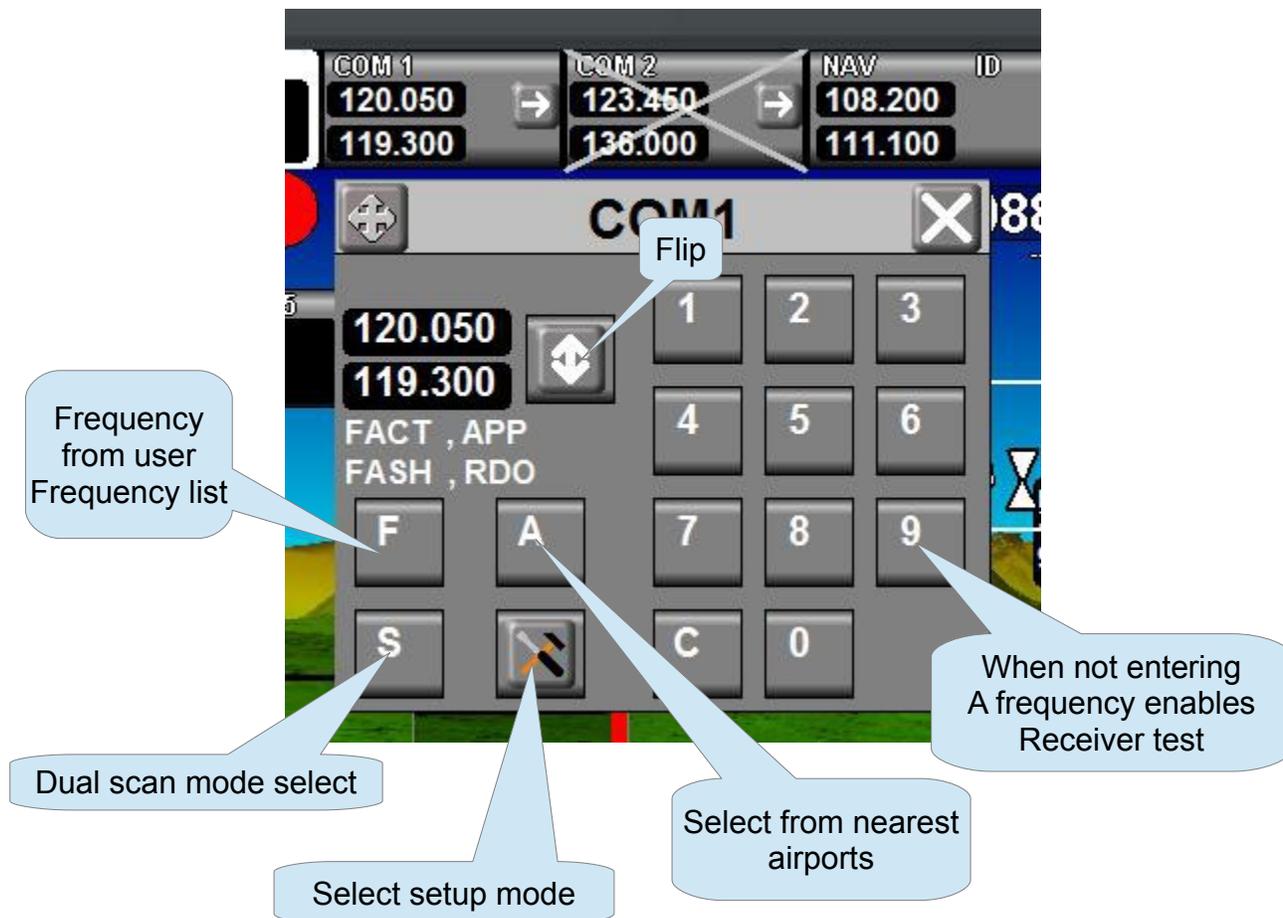
On the iEFIS, go to “system setup” and select “serial port routing/allocations”. Select “Trig COM 1 radio” or “Trig COM 2 radio” onto the RS232 port you have chosen to use.

In “Equipment Enables” enable use of COM1 or COM2 as needed.

Note: On the iEFIS lite you can use either port on the panel (RS232 port 1 or RS232 port 2) or if you have the iEFIS extender module fitted, any of the 5 available RS232 ports on this device.

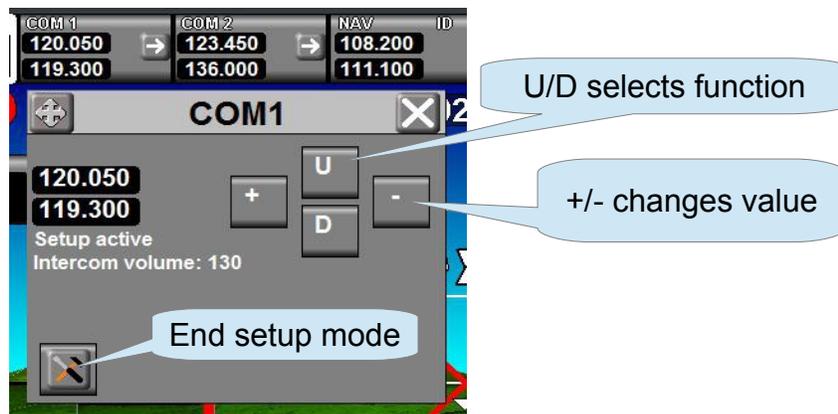
On the regular iEFIS using an iBOX, select any of the 5 available RS232 ports (RS232 port 6 is dedicated as NMEA port and cannot be used). Note that for regular iEFIS systems the RS232 port on the panel itself cannot be used for the Trig radio as it cannot operate in half duplex mode.

# Using the iEFIS radio interface with the Trig transceiver



Radio controls available from Rotary controls are "Volume" (Receiver volume) and rotary frequency selections for main and standby frequencies.

Note: Other radio settings are available from the setup function:



Available setup items: Intercom volume and squelch (VOX noise gate), AUX volume and muting function, Sidetone volume and receiver squelch offset.

Please view the Trig transceiver use and installation manuals for specifics.

## **Using a Trig control head**

The Trig TY9x transceiver body may be used with the Trig control head as described in the Trig TY9x installation manual while at the same time connected to the iEFIS as described in this document. Connect the control head to the transceiver body using the second TMAP port for convenience (it does not matter which port goes to which device).

Note: The Trig system permits two control heads on one transceiver, you cannot install more than two. The iEFIS takes the part of the first or second control head. The communications protocol provides for up to two controllers on which one is active at any time. Generally, the controller that you use to change a setting or frequency becomes the active controller. There may be a small but insignificant delay noticeable if you perform an input on a controller that is not currently the active controller. This is due to the changeover negotiation required on the TMAP bus.

## **EFIS systems with Multiple panels:**

Regular iEFIS with iBOX:

You can change frequencies from any panel however only the current primary panel may adjust volume and other settings.

IEFIS Lite with two panels:

Only the current master panel may change frequencies, volume or any settings.