

# Connecting and configuring the Sandia STX165R transponder to the MGL iEFIS system

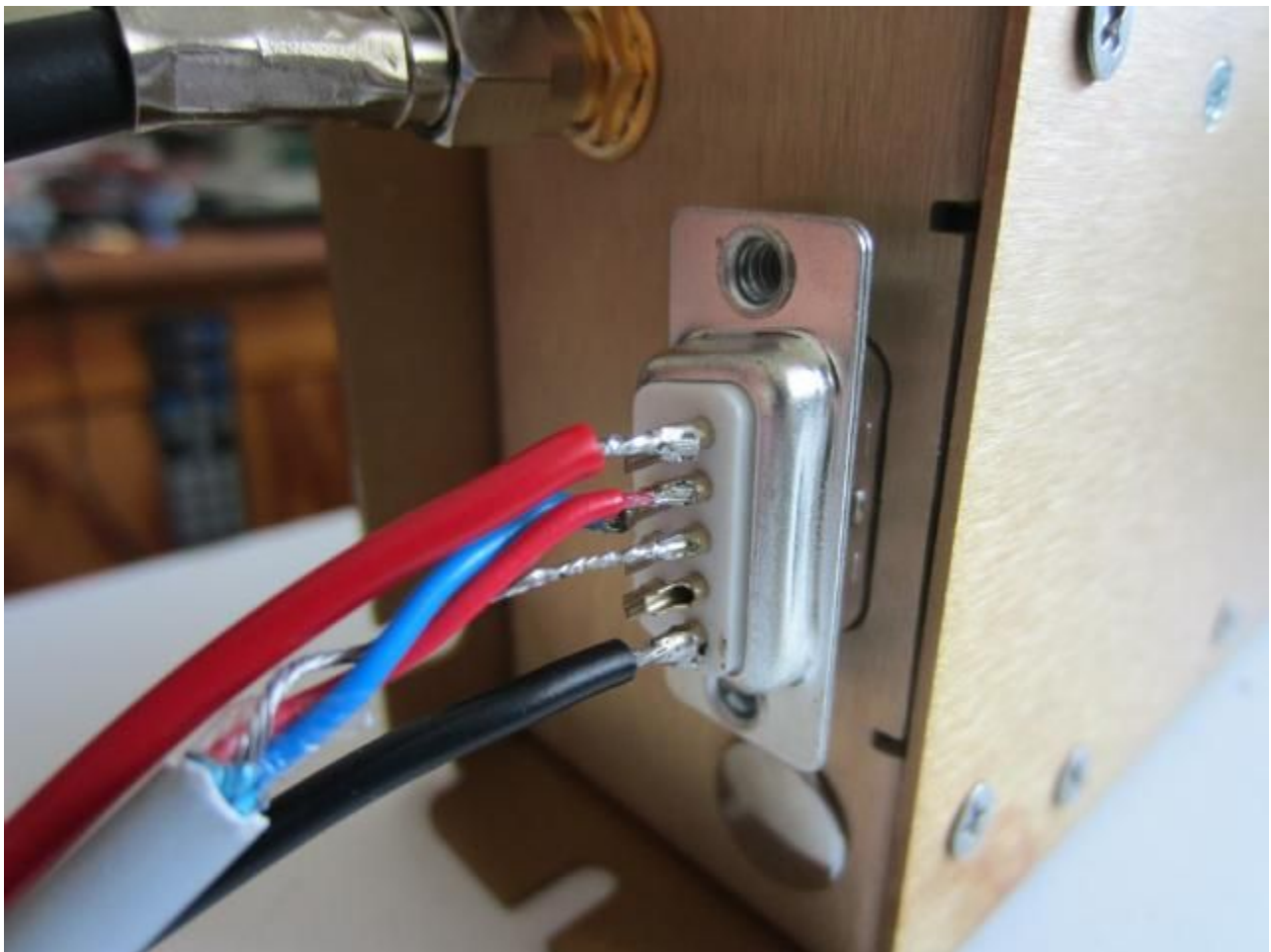
Please refer to the Sandia Aerospace website for the installation manual. Please take heed of RF and antenna installation requirements. Ensure that RF cable losses are within specified limits.

This document specifies how to connect and configure the transponder to work with an MGL iEFIS.

The transponder has two D-type connectors. The D-15 is used as parallel altimeter encoder input. This connector is NOT used with the MGL installation and must remain unused.

You will only need to connect the D-9 connector. You will supply power and at least two wires to connect to your chosen serial port on the iBOX of the MGL EFIS system.

This image shows the required connections (also refer to the Sandia installation manual).



- Pin 1 - Avionics power supply, typically 12V (thick red wire in this image)
- Pin 2 - connect this to the RS232 transmitter (TX) on the iBOX

- Pin 3 - RS232 ground. See note below
- Pin 5 - Avionics power supply ground
- Pin 7 - Connect this to the RS232 receiver (RX) on the iBOX

### **Note on RS232 ground**

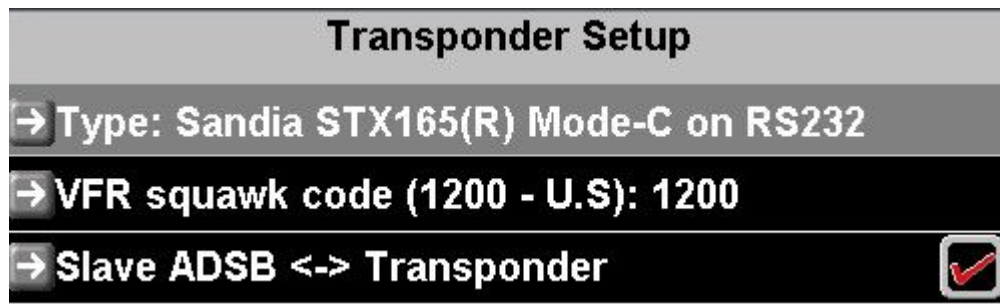
In most installations your EFIS and your transponder would be connected to the same ground point. In this case, do not connect the RS232 ground on both sides as this will create a ground loop and could potentially cause damage should your transponder lose its own power supply ground (for example a cable break).

You may connect the ground (either from the iBOX side or the transponder side) to the shield of the RS232 cable as is shown in this image. Do not connect the shield on both sides.

If your EFIS and transponder are not connected to the same power supply or if you are using an AvioGuard isolated power conditioning system on the EFIS or transponder side only (in this case we have two separate supplies and the grounds are not connected), you need to connect the RS232 ground between the two systems.

Avoid using then cable shield as ground connection – use an inner core for this (so you need a three core shielded cable). The shield should only be connected on one side for maximum effect.

### **EFIS setup**



Select the above in your System setup -> Transponder setup

Enter the VFR code for your region. If you have an ADSB-out system connected to the EFIS, you can select to slave the two to each other. In this case squawk codes and ident will be mirrored on each device.

Serial port routing/allocations	
→ RS232 port 1 (Internal):	MGL Blackbox data feed
→ RS232 port 1 (External):	MGL ECB
→ RS232 port 2 (External):	MGL COM 1 radio
→ RS232 port 3 (External):	SL40 COM 2 radio
→ RS232 port 4 (External):	Not used
→ RS232 port 5 (External):	Sandia Transponder
→ RS232 port 6 (External):	GPS NMEA (fixed)

Select the serial port that you have connected the Sandia transponder to. For this example we have chosen port 5. The relevant pins on the iBOX are marked T5 and R5 for TX and RX.

After you have selected the serial port, please restart your system to enable the new settings.

### Using the transponder



Tap on the small transponder status display on the top to bring up the transponder control.

Tap the ID icon to activate the ID when directed by ATC to do so.

Tap the V icon to select your standard VFR code into the transponder.

Tap the MD icon to select the transponder operating mode.

Note: "ON" = transponder active in mode A (altitude is not transmitted)

"ALT" = transponder active in mode C (altitude will be transmitted)

Use the numeric icons to tap in the desired transponder squawk code.

Tap "C" to cancel and re-enter the code. Partially entered codes are not activated, you must enter 4 digits.

Tap "X" to close the transponder control.