OCKAM
INSTRUMENTS, INC.

Service Bulletin

How to set the jumpers correctly on interfaces which use the NMEA channel

This note applies to:

050 RS232 Interface revisions D and E.
Rev D has two boards, back board type OKE3240
Rev E has a single board marked [T3A].

041 GPS Interface, all revisions (Used on 001 systems only).
Revs A thru C have two boards, back board type OKE3240
Revs D and E have a single board marked [T3A].

042 NMEA tap
no S/N
Two designs

What's this about?

The Ockam system bus has 16 channels, numbered 0 to 15. Channel 0 provides synchronization, while channels 1-4 carry display and interface data. In 1996, with the development of the 041 GPS interface and 041 NMEA tap, the NMEA channel was added. The goal was to provide a way to conveniently distribute NMEA-0183 data to multiple clients. Details are covered in the white paper at http://www.ockam.com/NMEAdistribution.pdf.

Interfaces which use the NMEA channel have jumpers to assign which channels to talk and listen on when processing NMEA data. If the jumpers are set incorrectly, NMEA data may be sourced to a different channel than another interface is listening on. In normal operation, systems which use the 001 processor rely on the 041 GPS interface to source NMEA channel data. The Tryad T1 processor sources the NMEA channel directly.

The 050 RS232 interface can also source to the NMEA channel, although this is usually done only for troubleshooting purposes. In normal operation, the RS232 interface listens to the NMEA channel in order to meld it with Ockam data when feeding the OS4 driver.

Originally, 001 systems using the 041 were set up to use channel 5. When the T1 processor was developed, channel 6 was used to avoid possible conflicts. Now, units in the field set to channel 5 are being mixed with newer units set to channel 6, causing installation issues.

How to determine if there is a problem.

The source for NMEA data is the 041 GPS interface (in 001 systems) or the T1 (in Tryad systems). The clients are the T1 RS232 output, the 050 interface and the 041 NMEA tap. If you use any of these clients, you should check that they are delivering data normally.

- For the NMEA tap, the light should be flickering.

- For the RS232 interface, select NMEA data (use Hyperterminal to send the !S2 command). After the check, return to normal operation (!S1 or !S3).

- If no data is output from either, check the 041 GPS interface to ensure it's set correctly. Also check that the GPS itself is outputting.

Setup

In order to be sure that the system is ready for upgrades, we recommend setting all system components to use channel 6.

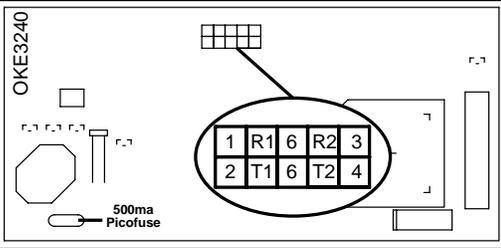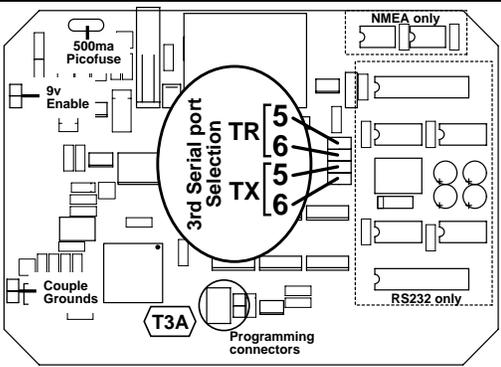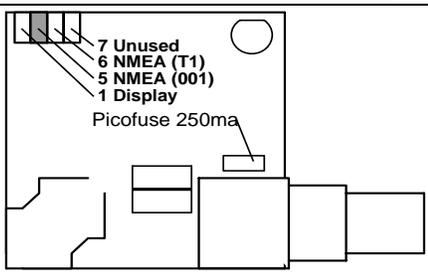2-board serial interfaces using OKE3240

050 RS232 rev D	R1->1	T1->2	R2->6	T2->6
041 GPS revs A thru C	R1->1	T1->6	R2->3	T2->4

1-board serial interfaces using [T3A]

050 RS232 rev E	TR->6	TX->6
041 GPS revs D and E	TR->6	TX->6

All NMEA taps   6

Location and description of jumpers

050D RS232 and 041 A to C GPS Interfaces	
050E RS232 and 041 D and E GPS Interfaces	
042 NMEA tap (Rev A) Listen-only Default setting was channel 5 (for 001 systems)	
042 NMEA tap (Rev B) Listen-only Default setting was channel 6 (for T1 systems)	