

FCC ID: L2V-STX3
IC ID: 3989A-STX3
CT Project: p1320003

From: Chris Harvey

Date: November 6, 2013

Original 6. The Schematic Diagram exhibit shows module connections PB4 and PB5 that go to GPSTx and GPSRx locations on the board, which seems to imply that this device has a GPS Transmitting device. Please clarify what these connections are and what they are used for. Additionally there are U1Tx and U1Rx points that go to Tx and Rx points on the board.

Spot – Updated to show the host serial port & unused pins

Continued Q6. Just removing the letters GPS from GPSTx does not help without further explanation. Now this just raises the question about what the Tx is. Is this the Tx for the fundamental transmitter, or is this another transmitter in the schematic? They need to further explain what the traces are for as we requested in the original question.

Spot – The previous version of the schematic which had labels with references to GPS was an early pre-production print. The original concept was to provide a dedicated serial port which would allow the host to provide GPS NMEA to the STX3 separately from the host serial interface. This feature was never implemented and this serial port was then assigned to the host interface. I have added excerpts from the User's Manual and have annotated some additional information in the descriptions.

Original 8. The FCC Modular Approval letter indicates that this device does not have Digital Inputs that are supposed to be buffered, but the Block Diagram shows Serial TTL input to this device. Please correct the Modular Approval letter and indicate if this device complies with the Buffered input requirement.

Spot - Part 15-212 states:

“..(ii) The modular transmitter must have buffered modulation/data inputs (if such inputs are provided) to ensure that the module will comply with part 15 requirements under conditions of excessive data rates or over-modulation. ..”

There are no inputs to the STX3 that can affect either the RF modulation or the data rate of the transmissions. The TTL serial lines are for configuration and command functions only. All on-air data packets and the baseband/RF modulation is generated independently by the on-board ASIC.

Continued Q8. Their Modular Letter needs to include this explanation about the serial port use and the fact that this data cannot impact modulation or data rates because the device apparently DOES have data ports that are not buffered. The modular letter needs to be updated.

Spot – As we stated, the STX3 has no un-buffered pins which can affect the modulation or data rates of the RF signal being generated. Detailed information has been added to the Modular Checklist.

9. The FCC Modular Approval letter indicates that this device has a unique Antenna Connector, but this appears to have a pin on the PCB for connection to an antenna trace. There is FCC Guidance on Licensed Modules and for Trace Antenna compliance, but due to the US Government shutdown, I cannot determine the KDB numbers.

Spot - The module is not approved for use with an antenna trace under this application. This device is only approved for use with the specified ceramic patch antenna. The pin on the board is to be connected directly to the specified antenna.

Continued Q9. The module does not have an RF connector and relies on an installation to a host that contains a connection to a pin that has a trace to some antenna connector. In order to NOT have an antenna or antenna connector on the module, there MUST be control over installation, and the installation guidance MUST be part of this application review. This cannot be a regular Modular Approval, but must be a Limiter Modular Approval because this item #4 of the Modular Approval cover letter is NOT met.



Spot - Paragraph 6.2 of the User's Manual contains detailed instructions for the installation and use of the specified antenna which satisfies the requirements for a limited modular approval. These instructions are enforced as part of the Globalstar certification process whereby any device utilizing the STX3 module must be submitted to Globalstar for approval prior to being provisioned for operation on the Globalstar satellite network. Adherence to these requirements is an integral part of the Globalstar certification process.

Modular item #4. "The modular transmitter must comply with the antenna requirements of Section 15.203 and 15.204(c). The antenna must either be permanently attached or employ a "unique" antenna coupler (at all connections between the module and the antenna, including the cable). Any antenna used with the module must be approved with the module, either at the time of initial authorization or through a Class II permissive change. The "professional installation" provision of Section 15.203 may not be applied to modules.

CT – Noted

13. Some exhibits indicate 4dBi gain (such as manual) and some exhibit mention 3dBi gain (such as RSS-102 MPE and RF report) and some don't mention antenna gain at all. The application exhibits must be consistent.

CT – User's Manual has been corrected.

Continued Q13 All exhibits that mentioned the 3dBi antenna gain need to be corrected and recalculated with the 4dBi value.

Spot – Please indicate the exact location of any reference to 4dB. The updated exhibits reference only the 3 dB value.

RF Exposure Info	3dB
Users Manual	3dB
PA25-1615-025SA Data Sheet	3dB

Response by: Spot, LLC

Submitted by: Amanda Reed

Date: November 11, 2013