

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

From: Chris Harvey

Date: October 2, 2013

1. Please update the Block Diagram exhibit to include the frequencies of operation for this transmitter.

Spot - Corrected

2. Please revise the FCC Modular Approval letter to include the FCC ID of this device.

Spot – This is in the process of being revised, and will be submitted shortly

3. Even though the Form 731 exhibit does not get uploaded, the FCC ID on the Form 731 provided to me is missing the '-' that is present in other exhibits.

CT – Revised form 731

4. The exhibit named FCC Label has guidance on labeling the host device, but the FCC ID number has typos in 2 instances (LV2-STX3 and L2V-TSX3-1 are both wrong). Also, the IC number referenced on page 3 has additional characters '-1' which are not part of the IC number for this application. This same issue is also found in the User's Manual exhibit.

Spot - Corrected

5. The manual also states that the device complies with FCC 15.247 and 15.249, which has not been documented in this application. Please correct the manual.

Spot - Corrected

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

7. The RF Exposure brief indicates 0.139 W but the Form 731 shows 0.192W. Please determine the correct power and update the exhibit(s) as needed.

CT – The RF Exposure Info data of .139 W is the maximum expected output power prior to the antenna gain calculation.

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.

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.

10. The FCC Modular Approval letter indicates that this device will be demonstrated to comply with SAR requirements, but the IC RF Exposure exhibit shows compliance with only mobile RF Exposure category MPE calculations with a 4dBi worst case antenna gain.....

Spot - The module is intended to be approved as a mobile device. Portable devices will require a separate approval by the OEM.

11. The FCC MPE exhibit indicates 0.192W EIRP, but that seems to be the conducted power from the report. This exhibit also does not mention antenna gain. Also, the duty factor is stated as 0.96%, but this is not justified in other exhibits. Please note that if a very low duty cycle is used to demonstrate RF Exposure compliance, then the FCC will require a PBA.

CT – 0.192 W is the EIRP value including the 3dB gain of the Antenna as stated in the Test Report

12. Please provide clear Installation Guidance that will be provided to the OEM installers to address all antenna trace manufacturing requirements, antenna selection and installation separation distance requirements.

Spot – Section 6 of the STX3 User's Manual has been modified to further clarify the antenna requirements

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.

14. In RF Test Report,
 - a. At page 7 of the report for Power limit testing, please verify the stated limit and correct as needed.
 - b. At page 8 of the report for "Emissions Limitations for Mobile Earth Stations", the test result doesn't fit with 15.202(f) description. Please verify and provide appropriate rule parts for the testing.

CT – a) Limit has been corrected.

b) The rule part for "Emissions Limitations for Mobile Earth Stations" is 25.202(f) as listed.

IC items:

Industry Canada requires the Model Number to be located on the label in accordance with RSP-100

Spot –

4. Labelling of Certified Radio Equipment

Certified radio equipment shall be labelled in accordance with the Category I equipment labelling requirements of RSS-Gen.

RSS-Gen

3.2.1 Labelling Requirements for the Host device

The host device shall be properly labelled to identify the modules within the host device.



The Industry Canada certification label of a module shall be clearly visible at all times when installed in the host device, otherwise the host device must be labelled to display the Industry Canada certification number of the module, preceded by the words "Contains transmitter module", or the word "Contains", or similar wording expressing the same meaning, as follows:

Contains transmitter module IC: XXXXXX-YYYYYYYYYYY
where XXXXXX-YYYYYYYYYYY is the module's certification number.

The applicant for equipment certification of the module shall provide with each unit of the module either a label such as described above, or an explanation and instructions to the user as to the host device labelling requirements.

This is called out in the User Manual

Contains Transmitter Module FCC ID: L2V-STX3

Contains Transmitter Module IC:3989A-STX3

Please provide an Industry Canada Modular Approval Checklist in accordance with RSS-GEN.

CT – RSS-GEN section checklist is contained within RSS-170's checklist

Response by: Alex Macon & Spot, LLC

Submitted by: Amanda Reed

Date: October 11, 2013