4 TCB SUBMISSION

This section addresses points specifically requested by EMCT upon submission to TCB selected by EMCT (Curtis-Strauss). The TCB requested clarifications are pasted in italic.

Refer to [17] as well as exchange of correspondence in Section 5 below.

Equipment used:

- **Spectrum analyser: Agilent ESA E4407B**
- **Oscilloscope: Agilent 54642A**
- **RF Signal generator: Agilent E4437B**

4.1 PCB Overlays.

1. Layout diagrams have been mentioned in the confidentiality request. This document was not supplied. Please provide the document or revise the confidentiality request.

Please refer to CD Rev 1.0.3, under the directory "/PCB Overlays".

An updated letter has been provided where confidentiality is only requested for schematics and BOM. Overlays have been removed from the exhibit. It was left out to EMCT on how to deal with this issue.

4.2 Operational Description

2. An operational description is required as a separate exhibit. If this is part of the manual, it needs to be extracted and supplied. This description should also address the following issues;

The mentioned issues are dealt with separately below.

4.2.1 Extracts of Operational Description

From [9]:

> *The RFI-9256 is a frequency-hopping spread spectrum (FHSS) radio modem operating in the international 900MHz ISM band. It has been type approved for operation in Australia (915-928MHz), New Zealand (921-929MHz), and countries regulated by the FCC (902-928MHz).*
>
> *The RFI-9256 is suitable for many applications including point-to-point, point-to-multipoint, and SCADA protocol networks.*
>
> *An RFI-9256 OEM module is available for OEM applications.*

It incorporates the following features [9]:

- *CRC error detection and recovery via retries*
- *Up to 30km point-to-point*
- *Dual RS-232 serial ports*
- *User selectable interface speeds between 110 and 115200bps*
- *1 W (30dBm) RF output power*

- *Programmable I/O for SCADA applications*
- *Front panel indicators for RSSI, TX power, and status*
- *Can be installed and commissioned without test equipment.*
- *Sensitivity <-108dBm for BER 1 part in 10-4*
- *Operating voltage 9 to 30VDC*
- *Operates at -10ºC to +60ºC with 95% non-condensing humidity*
- *Protocol routing modes.*

Its applications are briefly described [10]:

- *Point to Multipoint Data Acquisition and Control*

  Intelligent built in Modem can interface with virtually any standard Data logger, PLC, computer; i.e. any RS232device. In built buffers handshake with Input/output devices at data speeds up to 115,000 bps and transparently move data to the other end.

- *Linking of local and remote RS232 serial ports*

  Depending upon the geography and terrain, the Radio modems can communicate reliably over considerable distances. Good line of site paths from mountain top to hill can extend useful range up to 30 km. The RFI 9256 can be used as a repeater to extend range indefinitely.

- *Parallel digital I/O and expansion*

  8 parallel digital I/O in addition to the standard RS232 serial port, are provided in the RFI 9256 model Radio modems. Expansion radio interface modules (RIM) permit very large SCADA capability. For more details regarding interface parameters, contact the manufacturer.

- *Diagnostics functions*

  The second RS 232 port can be used as a diagnostics channel for monitoring network performance, and for additional data routing if required.

A low-level RF transceiver block diagram is provided Figure 1 below, for reference purposes:

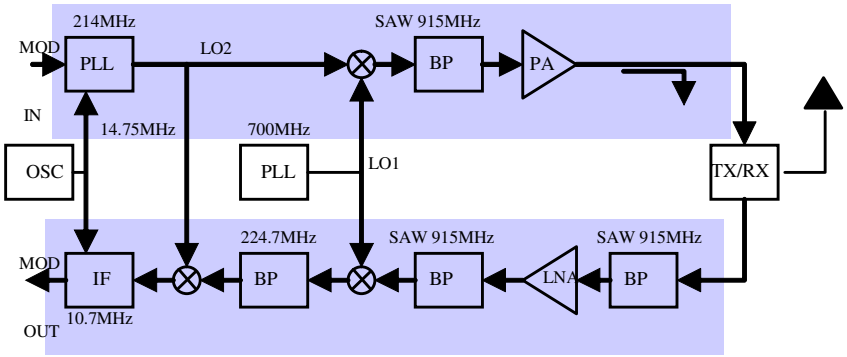

Figure 1: RFI-9256 RF Transceiver Block Diagram