Response to TCB Findings

TCB - RF exposure exhibit implies that the device can be installed indoors. The manual suggests it is for vehicle installation only. If indoor installations are intended, professional installation may not be easily justified as explained and AC line conducted emissions requirement becomes applicable for any installation outside a vehicle. Please clarify the installation condition for each of the three antennas.

WaveRider - The antennas are to be externally vehicle mounted (the two whip antennas) or mounted outside on a permanent or semi-permanent (e.g. trailer) structure. In the past, outdoor antennas usually had warnings to provide 2 m clearance. This is an impractical distance to enforce for a vehicle or trailer mounted antenna. The inclusion of the RF exposure material was done to justify using separation distances of 20 and 30 cm which are more realistic for vehicles and trailers in our opinion. There is no expectation that the antennas be used indoors and there are no words to that effect in the manual.

For the whip antennas, only vehicle mounting is expected, with power coming from the vehicle system. The whip antenna is a poor choice for any other installation, since it is not very high gain, and the omnidirectional aspect is not good for multi-path.

For the panel antenna, mounting on a trailer or van is expected, again using the internal 12 VDC power system. We do not expect the MMT to be mounted on permanent structures, but we see no reason to preclude this option if the user wishes to do so. The antenna could be mounted outdoors on a permanent structure, but the professional installer must then find a 12 VDC power source, since the MMT9000 cannot be plugged directly into the AC mains and we are not offering any AC-DC power conversion accessories. Furthermore, we already offer an outdoor modem, the EUM3006, which will run off of the AC lines. We also offer indoor modems (EUM3005) so it is not expected that users would buy MMT9000 instead.

TCB - If the unit can be offered to the market as a non-vehicle operation device under certain cases, then the MMT9000 is required to show compliance with 15.207 AC line conducted emissions limits, when powered through an unmodified off-the-shelf DC power supply. In other words, any installation condition where the unit can be powered via AC power lines (direct/indirect) requires 15.207 data. Or alternatively the unit must be limited to vehicle (battery power) applications only. Please clarify / provide test data as appropriate.

Waverider - The MMT9000 will be offered to the market for vehicle mount only. This is already clear in the user manual and sales documentation and will be communicated to the sales team. The EUM3005 and EUM3006 are already offered to the market for non-vehicle applications.

TCB - The plots supplied for spurious emissions (radiated and conducted) in the test report do not show the receiver system settings. Clarifications on detector settings and their corresponding RBW and VBW are needed for QP, Average and Peak detectors. Also it is not clear if peak measurements have been taken above 1GHz and compared to 20dB above the average limit.

Test House - Unless otherwise noted (as in the spectrum analyzer screen captures), conducted emissions are measured at the antenna port with RBW of 100 kHz and VBW of 3 MHz with Peak detection.

Radiated emissions below 1 GHz are measured with RBW of 1 MHZ and VBW of 3 MHz for Peak detection, and RBW of 120 kHz and VBW of 3 MHz for Quasi-Peak detection.

Radiated emissions above 1 GHZ are measured with RBW of 1 MHz and VBW of 3 MHz for Peak detection, and RBW of 1 MHz and VBW of 100 Hz for Average detection over 100 sweeps.

All unreported emissions are at least 20 dB below the applicable emission limits.