Re: FCC ID: P3YSPOTCELL0004

Applicant: Spotwave Wireless Inc.
Correspondence Reference Number: 4915
731 Confirmation Number: TC138935
Date of Original Email: 08/20/2002

Subject: Request for additional information

In regards to your recent TCB grant referenced above we kindly request that you provide the following additional information.

1) Updated exhibits as follows. Please remove all references to other FCC ID equipment. It appears that non authorized changes have been made to previously certified equipment. Please note that the FCC considers this new equipment Original FCC IDs should not be displayed on any equipment changed without authorization. Any changes made to previously certified equipments should be handled under permissive change rules for those FCC IDs.

Response – revised report uploaded

2) Additional line items to form 731 as appropriate. (For TCB) It appears that this equipment can transmit in 2 possibly 3 frequency bands. Only one is contained in the submitted form 731.

Response – the frequency range listed on the grant covered 4 bands. I will modify the grant to reflect the 4 bands.

3) Clarification and correction of stated power. Form 731 states .005 W, MPE calculation states 2 W, block diagram states 25 dBm for DDU and 21 dBm for SCU. Please harmonize powers throughout exhibits including all schematics/drawings.

Response – Uploaded new relevant exhibits with harmonized power levels.

4) Full details defining input signal condition for radiated and conducted tests. It is important that tests be performed at highest power levels. Provide new data as appropriate.

Response - The test were done to reflect the worst case condition at maximum power and bandwidth. Signal conditions were varied to verify worst case conditions, i.e. intermod spacing, input signal level being varied from max to min to observe performance. The input signal level used for the submitted plots was –40dBm (Nemko).

6) Additional descriptive information of the system and its operation, please address: final amplifier stage DC voltage and current, and description of all circuitry and devices provided for determining and stabilizing frequency, for suppression of spurious radiation, for

limiting modulation, and for limiting power, per CFR 47 Section 2.1033 (c). Please carefully, address how overload of both the DDU and SCU inputs will be performed.

Response – The final amplifier stage in the uplink is a linear RF amplifier part number SPA-1118(see attached PDF data sheet). This device is operated at a supply voltage of 5V, and current of 320-360mA. The SpotCell 100 uses an IF frequency to perform gain control and filtering functions in both the downlink and uplink directions. The same LO signal is used to provide both down-conversion and up-conversion of the RF signal. In this configuration the output RF frequency is independent of the actual LO frequency, or any LO frequency error. The LO signal is generated by a frequency sythesizer that phase locked to a TCXO reference source, which has a maximum frequency error of +/- 2.5 ppm (see attached vt204 data sheet). However as noted above, because the same LO is used to convert to and from the IF frequency, this error is not transferred to the output frequency. The only sources of spurious radiation within the SpotCell are the Local Oscillators used in the uplink and downlink, and the clock frequency used by the on-board micro-controller. The LO frequencies have been selected to prevent in-band spurious signals from being generated. Out of band spurious signals are filtered by SAW RF filters which are located between the uplink and downlink gain stages. The uplink and downlink oscillators and associated components are located in separate shielded compartments to control stray radiation. The microprocessor and associated digital circuits that use the 10MHz clock are housed in their own, separate shielded compartment to ensure that the clock and harmonics do not create spurious signals at the antennas. In addition, each RF stage in the uplink and downlink chain has its own decoupling components to prevent clock and LO signals from entering the signal path through the power supply. The PCB uses 3 separate ground planes to provide shielding and provide a low impedance ground for the RF stages and decoupling components.

SpotCell 100 uses an AGC circuit in both the uplink and downlink to control the RF power fed to the output stages. These stages are calibrated during manufacture to ensure that output amplifiers are limited to operating at 10dB or more below the maximum output power of the device. This ensures linear operation, and prevents any distortion of the signal that may affect the occupied bandwidth of the signal (modulation). The AGC circuit use logarithmic detectors to measure the AGC output power, together with an integrator and linear voltage controlled amplifier. This AGC configuration allows the system to operate linearly over a wide dynamic range. In addition, a supervisory system is used to monitors the input power level and to shut down the downlink or uplink if the input power exceeds the maximum specified.

7) Photograph with location of the FCC ID label.

Response – uploaded photo with location of the ID label.

8) Full User Manual. Also, the statement about antenna installation

distances referenced in the MPE exhibit was not located . Please provide.

Response – revised manual uploaded.

9) Block diagrams for input to EAS Exhibit 4. It was noted that confidentiality was requested for such diagrams. It was noted that drawings under EAS exhibit 12 were not denoted as confidential by TCB.

Response – block diagrams are now tagged as confidential.

10) New radiated spurious data as appropriate. It appears that the substitution method was not used.

Response - The sig.sub method was used, if you look at the emissions data you will see the result is in dBm and not electric fields strength, also on page 38 of the report you will see the signal substitution conversion data field. This was done as per TIA/EIA 603 (Nemko).

11) Radiated power data. Please measure using the substitution method.

Response – see above.

12) A statement discussing any differences between SCU A and SCU B.

Response - The CU A&B are identical, the only difference being the filters used for channel blk A&B.