



RE: FCC ID: E5MDS-CW500

1. Please remove the shields on the board in the photo on page 4 (Front side Photo 1 Of 2) of the internal photos for the IDUY.

Attached are 2 photos of the PCB's in question with the shields removed, I took the IDU and ODU shields off just to cover all the bases.

2. Please note that there is more than sufficient room on the device to include the required 2-condition statement of 15.19 for Part 15 devices. Please note, the device does not meet the requirements needed in 15.19(a)(5) in order to place the statement elsewhere. Consequently it is not an option, but a requirement that this statement MUST be on the device. Please provide a new label or an additional label showing this statement and where it will be placed ON THE DEVICE.

Attached are copies of the new labels showing the 2 condition statement, this will only be attached to the IDU because of FCC 15.19.4 lists 2 unit construction requires only one label attached to the control unit, and the IDU is the Control unit for the ODU..

This is the new label and it will be placed in the same location as the original photos.

3. The theory of operation states that a particular "Power Management" control is used in the system. Please provide the tune up procedure or other procedures used at the manufacturer to insure that the automatic power control system does not and cannot increase the power of the device above that which is listed on the grant.

The RF power control is not capable of a field tune up. It is factory calibrated and under strict microprocessor and a closed loop forward power control. If the unit needs servicing, it must be returned to the factory for repair and retuning.

The RF power control is hard coded into memory and is not capable of exceeding the +30dBm maximum output allowed by the FCC. During the factory alignment the unit transmits into a RF power detecting device under PC control and the respective A to D value is written into memory and stored for future recall depending on the output power selected.

The CarrierWave is designed and manufactured to not exceed the maximum power allowed. The purpose of power management is to MINIMIZE transmit power when lower power levels are sufficient. The Manual and Theory of Operation state, "In response to the need for a high-density deployment model the CarrierWave use a unique power control technique called AdTPC. AdTPC enables CarrierWave units to transmit at the minimum power level necessary to maintain a link regardless of the prevailing weather and interference conditions."

I have attached the Theory of Operation with some edits for clarity.

4. FYI - Please note that your statement (The ISM band does not restrict antenna gain or EIRP, therefore there is no need to back off transmit power due to excessive antenna gain) is not correct. This only applies to strictly point to point systems. In all other cases a one dB reduction per one dB increase over 6dBi WILL be required when an effective EIRP of 36dBm has occurred.

Attached in the theory of operation is a statement that should alleviate any confusion. This is a point to point system one radio to one radio, and then the 2 radios on the same building are connected via fiber, so in fact this is a point to point system.

This text is from the theory of operation

The consecutive point architecture implemented in the CarrierWave Digital Radio family is based on a **point-to-point-to-point** topology that mimics fiber rings, with broadband wireless links replacing in-ground fiber cable. A typical consecutive point network consists of a POP and several customer sites connected using CarrierWave units. These units are typically installed in pairs in a building. Each unit installed at a customer site is logically connected to two other units.

These connections are as follows:

An over-the-air radio frequency (RF) link to a unit at an adjacent site

A back-to-back data cable link to another unit in the same building through a switch makes this consecutive.

5. Please note that the diagram in figure 2.1 of the manual and figure 1.1 of the theory of operation and the phrase "consecutive point" clearly indicates that this is NOT a strictly point to point system. Please note that your manual uses the term "consecutive" point. Also please note that your manual does not specify to the user and/or professional installer that this system is strictly a point to point system as required by 15.247(b)(3)(iii). Consequently, the power reduction for levels over 36dBm EIRP applies to the system as shown in that figure. This means that with the 25.1 dBm conducted power and the 23 dBi gain antenna you must reduce the conducted power to that antenna by 12.1dB (i.e. $25.1+23-36=12.1$). Alternately, you must show how your device is a strictly a point to point system.

"Consecutive Point: There is no need for additional figures. Figure 2-8 in the manual and Figure 2-4 in the Theory of Operation clearly show point-to-point radio links. Network layer routing is outside the the wireless point to point link."

6. Please note that the "FCC Notice, USA" on page 5 of the manual requiring a 1 meter separation disagrees with the caution statement about keeping a 2 meter separation distance in the "RF Energy Health Hazard" statement just above it. Please make the documentation consistent.

This has been corrected in the attached manual

7. Please note that your definition of Broadband Level on page 15 of your report is not correct. The ANSI C63.4 and the Accepted FCC definition is, "If the amplitude measured in the quasi-peak mode is at least 6 dB higher than the amplitude measured in the average mode, the level measured in the quasi-peak mode may be reduced by 13 dB before comparing it to the limit." Please note you incorrectly stated that if the average reading is 6dB higher than the peak then a 13dB the signal is broadband and the reduction can be made. This is not correct. Consequently, any measurement to which you have applied this factor must be re-measured and the averaged level must then be compared to the QP level. If a 6dB difference exists between the QP and Averaged reading, then and only then are you allowed to apply the Broadband correction factor. Please provide evidence that you have complied with 15.207 limits.

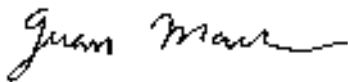
The statement has been corrected in page 15 of the report. Also, per your request of conducted emissions, the device is DC operated (Theory of Operations page 4-17, User manual Ch. 5-2 and 6-1). The device will in no way be connected directly to the AC mains.

8. Please note that 15.207 limits for conducted emissions have been changed since October, 2002 to be in line with the limits of CISPR22. While testing to the older limits may still be done until July, 2004, in accordance with the transition rules of 15.37, the grant will specifically mention that sale of the device must cease on or before July, 2005.

Understood.

If you need further information or clarification, please do not hesitate to contact us via doc@elliottlabs.com.

Regards

A handwritten signature in black ink that reads "Juan Martinez". The signature is written in a cursive style with a long horizontal stroke at the end.

Juan Martinez