
To: Fr. Gregory Czumak
Subject: RE: FCC ID: TO4-RFXCMT2058

Dear Gregory,

Below are the answers from the client. I have uploaded new exhibits. If you have any questions, please feel free to contact us.

Regards,

Jackie Pillai
Administration
Phone: (480) 926-3100
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From: "Keith Blaisdell" <keith.blaisdell@rfcentral.com>
To: "Jackie Pillai" <jackie@mflom.com>
Date: Wed, 15 Aug 2007 15:28:24 -0400
Subject: RFC Answers Regarding FCC ID: TO4-RFXCMT2058

Jackie, Here are the detailed answers to the Commission's questions, along with the supporting documentation. I have also included the updated manual as well with all the changes. Please let me know what else is required. My response is in highlighted in red. I am happy to provide any answers that are required.

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

1. According to the FCC database, the Grantee Code "TO4" belongs to Gigawave US, and not RF Central. Please address.
RF Central LLC is and always has been the 100 percent owner of Gigawave US. No Change necessary.
2. In an effort to demonstrate compliance with Section 15.203, the test report states that

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professional installation is required for the EUT. In order to use this clause to demonstrate compliance with 15.203, the fact that professional installation is required for the EUT must be demonstrated- please address the following points:

a. How is the EUT marketed?

The RF Central 5.8 GHz CMT is designed, manufactured and marketed directly to broadcast and industrial video professionals. This digital COFDM microwave transmitter is utilized in a camera mounted application. The mounting design is of a broadcast industry professional standard including Anton/Bauer and IDX mounts. Technical Support accompanies each system in terms of system design, application and integration. Further 24 hour customer engineering support is available by the manufacturer to the professional.

b. What is the intended use of the EUT?

The RF Central 5.8 GHz CMT is utilized by broadcast and video professionals to transmit a low power (less than 100mw) RF microwave signal to an associated professional microwave receiver. The video transmitted includes news, public event and sports video in various on location and studio based venues. Use is intended in a closed mobile device to fixed professional installation.

c. What aspects of installation require a professional installer?

The design of the transmitter and all of its associated connectors and interconnects include professional industry standard connectors that are typically not marketed to the general consumer. The connectors include LEMO connectors for audio and power and N type professional connectors for RF output into the included antenna for the EUT. As the unit is a mobile unit with a supplied antenna, installation is limited to attaching the selected fixed antenna to the unit.

3. The user's manual lists multiple potential antennae for use with the EUT. This is not permitted for an unlicensed (Part 15) transmitter. Any antenna intended for use with the EUT must be documented in the application (make/model/type), and the EUT must be tested for spurious radiated emissions in restricted bands for the highest gain of each type of antenna. This data must be included in the application. This is a long-standing FCC requirement. In addition, the EUT must be provided to the installer with a list of specific antennae that have been approved for use with the EUT, and the installer must be under the control of the grantee. If this will not be the case, then specific antenna(s) must be provided with the EUT. Please address. For your information, the following is taken from the FCC Knowledge Database (Pub #189073), and addresses these issues:

We market our transmit unit as a complete system package with the 4db omni that accompanied the EUT. We have provided an updated manual that reflects this is the only offering for transmission with the camera mounted transmitter. There is no outside installation required other than the professional/industrial customer connecting the antenna with the provided professional screw-on "N" type connector.

You can not market a transmitter to end users with a list of approved antennas. Section 15.204(b) states that an approved "transmission system" must always be marketed as a complete system including the antenna.

However for professionally installed transmitters, if the grantee ensures and controls the professional installation of the device, the professional installer may choose the proper antenna for the install. The grantee may use contracted installers who install their equipment and ensure the proper antenna is used.

The grantee would need to justify professional installation (for marketing, installation, and use restrictions. follow professional installation justification guideline) and ensure that the installation is done by a professional installer under the grantee's control. The professional installer must be provided the proper instructions for output power/cable/antenna configurations that meet the rules. These instructions are not given to the end user and in no case can the end user still have controls to adjust power.

4. By definition, a mobile device, with respect to RF exposure, is one for which a minimum separation distance of 20cm is always maintained between the antenna(s) and all persons, during normal operation. Although the MPE report demonstrates RFx compliance at a distance less than 20cm, the user's manual must still caution user's to maintain a minimum separation distance of 20cm (anything less than that, and, by definition, the EUT becomes a portable device subject to SAR testing). The remainder of the information to be provided to the user (shown at the end of the MPE report) is acceptable. Please resubmit the user's manual, including the language from the MPE report, but changing the minimum required separation distance to 20 cm (8 inches).

This statement has been added to the manual which is attached to this e-mail :

Mandatory Safety Instructions to Installers & Users

Use only manufacturer or dealer supplied antenna.

Antenna Minimum Safe Distance: 20cm (8 inches)

Antenna Gain: 4.0 dBi referenced to a dipole.

The Federal Communications Commission has adopted a safety standard for human exposure to RF (Radio

Frequency) energy which is below the OSHA (Occupational Safety and Health Act) limits.

Antenna Mounting: The antenna supplied by the manufacturer or radio dealer must not be mounted at a

location such that during radio transmission, any person or persons can come closer than the above indicated

minimum safe distance to the antenna i.e. 20cm (8 inches)

To comply with current FCC RF Exposure limits, the antenna must be installed at or exceeding the minimum

safe distance shown above, and in accordance with the requirements of the antenna manufacturer or supplier.

Base Station Installation: The antenna should be fixed-mounted on an outdoor permanent structure. RF Exposure compliance must be addressed at the time of installation.

Antenna Substitution: Do not substitute any antenna for the one supplied or recommended by the manufacturer or radio dealer. You may be exposing person or persons to excess radio frequency radiation.

You may contact your radio dealer or the manufacturer for further instructions.

Warning: Maintain a separation distance from the antenna to a person(s) of at least 20cm (8 inches).

You, as the qualified end-user of this radio device must control the exposure conditions of bystanders to ensure the minimum separation distance (above) is maintained between the antenna and nearby persons for satisfying RF Exposure compliance. The operation of this transmitter must satisfy the requirements of Occupational/Controlled Exposure Environment, for work-related use. Transmit only when person(s) are at least the minimum distance from the properly installed, externally mounted antenna.

5. Please specify precisely where the RF (front end) schematic diagrams are located in the various schematics exhibits.

The diagrams you have that refer to these questions are: PBCD-CCPA-0101 (2 pages), which is the power amplifier section. This doesn't have any clocks or oscillators as such, just gain stages. And PBCD-TDVM-1201 (7 pages) which is the modulator. TCXO1 is on Sht. 4 of 7 in the top left corner. On the same page is the oscillator, IC19 which runs in the range of the final output, direct modulation. Sht 2 of 7 shows X1 in the bottom left corner as labeled. See Attachments

The items indicated above must be submitted before processing can continue on the above referenced application.

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