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03/27/2007

AmericanTCB  
6731 Whittier Avenue  
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Attn: Director of Certification

RE: **FCC ID: MCQ-50M1355 / IC: 1846A-50M1355 submittal as modular device**

1. The modular transmitter must have its own RF shielding. This is intended to ensure that the module does not have to rely upon the shielding provided by the device into which it is installed in order for all modular transmitter emissions to comply with Part 15 limits. It is also intended to prevent coupling between the RF circuitry of the module and any wires or circuits in the device into which the module is installed. Such coupling may result in non-compliant operation.

The CC9W is designed such that all RF components and circuitry are placed on the top surface of the PCB. No RF related circuitry is present on the bottom surface of the PCB. a formed metal shield is soldered onto the top of the PCB and covers all RF components and circuitry.

2. The modular transmitter must have buffered modulation/data inputs (if such inputs are provided) to ensure that the module will comply with Part 15 requirements under conditions of excessive data rates or over-modulation.

The user data enters the CC9W by way of several data ports: Ethernet, USB, serial, external 8 bit data buss. All of the user data that is to be transmitted over the modular transmitter is buffered by the CC9W's baseband controller. The user's data is packetized and transmitted at data rates that are completely controlled by the baseband controller and its software. The user has no access to either the baseband controller or its software.

3. The modular transmitter must have its own power supply regulation. This is intended to ensure that the module will comply with Part 15 requirements regardless of the design of the power supplying circuitry in the device into which the module is installed.

The critical sections of the CC9W modular transmitter are powered by locally regulated 2.85V +/-5% low drop out regulators. These regulators are supplied from the system +3.3V power and are capable of maintaining a 2.85V +/-5% output with an input voltage of < 2.93V. The CC 9W will be forced into a hard reset if the system +3.3V falls to 2.93V and will cease to operate.

4. The modular transmitter must comply with the antenna requirements of Section 15.203 and 15.204(c). The antenna must either be permanently attached or employ a "unique" antenna coupler (at all connections between the module and the antenna, including the cable). Any antenna used with the module must be approved with the module, either at the time of initial authorization or through a Class II permissive change. The "professional installation" provision of Section 15.203 may not be applied to modules.

The ConnectCore 9W uses two reverse polarity SMA (RP-SMA) antenna connectors. These connectors are designed with a male center pin which prevents a standard SMA connector from being mated to the ConnectCore 9W.

5. The modular transmitter must be tested in a stand-alone configuration, i.e., the module must not be inside another device during testing. This is intended to demonstrate that the module is capable of complying with Part 15 emission limits regardless of the device into which it is eventually installed. Unless the transmitter module will be battery powered, it must comply with the AC line conducted requirements found in Section 15.207. AC or DC power lines and data



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input/output lines connected to the module must not contain ferrites, unless they will be marketed with the module (see Section 15.27(a)). The length of these lines shall be length typical of actual use or, if that length is unknown, at least 10 centimeters to insure that there is no coupling between the case of the module and supporting equipment. Any accessories, peripherals, or support equipment connected to the module during testing shall be unmodified or commercially available (see Section 15.31(i)).

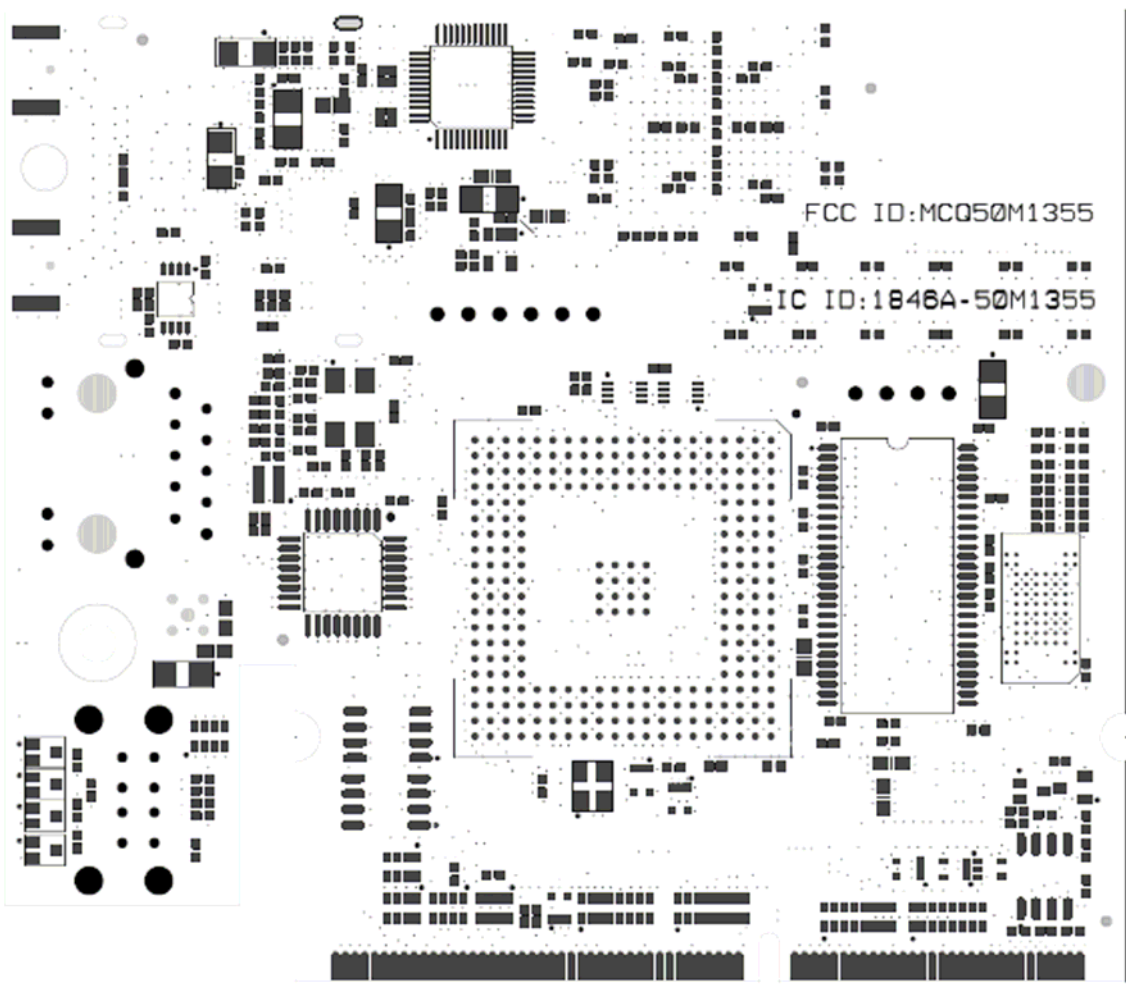
The CC9W module is designed to be compliant with all relevant FCC requirements without any additional shielding or filtering of any sort. As tested, the CC9W was mounted on top of a carrier board which provided the +3.3vdc to power the module and a RS232 line transceiver to allow serial data traffic. The carrier board drives the +3.3v from an on card dc to dc converter which is in turn powered by an external 12vdc power supply which is AC mains powered. There are no additional filters associated with the module/carrier board. Nor is there any additional shielding associated with is setup -- beyond the shield that is soldered to the module.

6. The modular transmitter must be labeled with its own FCC ID number, and, if the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID: XYZMODEL1" or "Contains FCC ID: XYZMODEL1." Any similar wording that expresses the same meaning may be used. The Grantee may either provide such a label, an example of which must be included in the application for equipment authorization, or, must provide adequate instructions along with the module which explain this requirement. In the latter case, a copy of these instructions must be included in the application for equipment authorization.

The CC9W will have the FCC/IC id's silk-screened in contrasting ink on the bottom of the PCB in the upper right corner using 0.06" text:



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The following text will also appear in the hardware reference manual that ships with the CC9W:

“If the FCC ID / IC ID is not visible when installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module FCC ID / IC ID. This exterior label can use wording such as the following: “Contains Transmitter Module FCC ID: MCQ-50M1355” / IC: 1846A-50M1355”.

7. The modular transmitter must comply with any specific rule or operating requirements applicable to the transmitter and the manufacturer must provide adequate instructions along with the module to explain any such requirements. A copy of these instructions must be included in the application for equipment authorization. For example, there are very strict operational and timing requirements that must be met before a transmitter is authorized for operation under Section 15.231. For instance, data transmission is prohibited, except for operation under Section 15.231(e), in which case there are separate field strength level and timing requirements. Compliance with these requirements must be assured.

There are no operational requirements for 15.247



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8. The modular transmitter must comply with any applicable RF exposure requirements. For example, FCC Rules in Sections 2.1091, 2.1093 and specific Sections of Part 15, including 15.319(i), 15.407(f), 15.253(f) and 15.255(g), require that Unlicensed PCS, UNII and millimeter wave devices perform routine environmental evaluation for RF Exposure to demonstrate compliance. In addition, spread spectrum transmitters operating under Section 15.247 are required to address RF Exposure compliance in accordance with Section 15.247(b)(4). Modular transmitters approved under other Sections of Part 15, when necessary, may also need to address certain RF Exposure concerns, typically by providing specific installation and operating instructions for users, installers and other interested parties to ensure compliance.

The Digi CC9W module complies with the RF exposure limits for humans as called out in RSS-102. It is exempt from RF evaluation based on its operating frequency of 2.4 GHz, and effective radiated power less than the 3 watt requirement for a mobile device (>20 cm separation) operating at 2.4 GHz.

S= .282mW/cm<sup>2</sup> @ 20cm