



Bluetooth UART SPP Module Model ASY90177-3

July 26, 2004

Compliance with FCC Public Notice DA 00-1407, June 26, 2000 “Part 15 Unlicensed Modular Transmitter Approval”

Note: FCC requirements for Part 15 Unlicensed Modular Transmitter Approval as listed in FCC Public Notice DA 00-1407, June 26, 2000 are in italics. An explanation of how the ASY90177-3 module complies follows each requirement.

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.

1. The ASY90177-3 module has a tin-plated brass shield containing all transmitter and receiver active components. The shield is soldered to the top layer of the printed circuit board, which is connected to the power ground bottom layer through vias on the shield periphery. Data and power connections to the I/O connector are on the bottom layer.

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.

2. All incoming and outgoing RS232 signals interface with the RISC microcontroller inside the CSR BC212015 chip. The data is conditioned and buffered by the microcontroller to limit the data rate and provide isolation between the RS232 interface and the transmitter.

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.

3. Radio circuitry on the CSR BC212015 chip uses 1.8V power. The 3.3V power is only used for circuitry that drives PIO lines and other external interfaces such as flash memory, SPI, and UART. The module's 3.3 V to 1.8 V linear regulator U5 supplies regulated power for all radio circuitry, in compliance with FCC requirements (please see the attached letter from CSR “Appendix - Letter from CSR” on page 4).

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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.

4. The Rufa 2.4 GHz antenna is permanently attached (soldered) to the module.

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 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)).

5. The ASY90177-3 module complies with FCC Part 15 requirements independent of any external connections or shielding. It has been tested to comply with Section 15.207. With the exception of RS232 data interface and a 3.3 V power supply, no accessories, peripherals, or support devices are required by the ASY90177-3 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.

6. The required FCC label is affixed to the exterior of the ASY90177-3 module's shield. A copy of the label and a drawing of its location have been included with this application for equipment authorization.

The following instructions are provided in the user's manual:

If the FCC and Industry Canada certification numbers are not visible when this unit is installed inside another product, then the outside of the device into which the module is installed must also display a label referring to the installed module. This label should be clearly legible and contain the following text:

<p>This product contains a certified RF transceiver module FCC ID KOC-901773 IC: 1961C-901773</p>

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.

7. The operational and timing parameters, transmitter power levels, and frequencies used by the ASY90177-3 module are not accessible to the user. Full control over these functions is maintained by internal firmware.

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.

8. An estimate of RF Field Maximum Exposure as described by OET Bulletin 65, Edition 97-1, August 1997 has been included with this application for equipment authorization.



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Appendix - Letter from CSR

Subject: RE: BC02 External - transmitter power supply

Date: Tue, 11 May 2004 23:49:02 +0100

From: "David McCall" <David.McCall@csr.com>

To: "Lubos" <lhonzik@attglobal.net>

The radio circuitry on BC02 is powered from VDD_RADIO and VDD_VCO, both of which are 1.8V supplies. The 3.3V capable supplies are only used for circuitry that drives PIO lines and other external interfaces such as memory, SPI, USB and UART. Your on-board regulator therefore provides a regulated power supply for all radio circuitry, in compliance with FCC requirements.

Best regards.

David McCall

Senior Product Consultant