



4-Apr-02

Re: FCC ID H9PCC4137

Subject: Response to Correspondence Reference Number: 22447
(731 Confirmation Number EA248305)

Joe

Each Item you raised is followed by the response.

a) The device is being placed in hand held printers. Provide justification for modular approval in these hand held printers per Public Notice on modular approvals that was e-mailed to you.

Response to Item a

1. The modular transmitter must have its own RF shielding.
The radio uses a soldered on shield/case to provide the necessary RF shielding. The radio module is mounted to the PCB for the CC-4137 radio card.
2. The modular transmitter must have buffered modulation/data inputs.
U301 provides the required buffering of modulation/data inputs.
3. The modular transmitter must have its own power supply regulation
B302 provides power supply regulation.
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.
The device uses two MMCX connectors; additionally the antenna is mounted internally in the host and not end user accessible. The host device would have to be disassembled to access the antenna.
5. The modular transmitter must be tested in a stand-alone configuration.
The module was tested in a stand-alone condition as seen in the Test Set up photographs.
6. The modular transmitter must be labeled with its own FCC ID number.
The FCC ID was placed on the Regulatory label and can be seen on the external photographs.
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
The radio Integration guide is included for the manufacturers that provides instructions on required SAR and EMC compliance testing.



8. The modular transmitter must comply with any applicable RF exposure requirements.

The SAR Test Report documents compliance to the existing RF exposure limits for Uncontrolled Environment General population. The separation distance used during SAR testing was 1 cm, when the module is integrated into future host devices the separation will increase because it's mounted internally. The antenna is internal to the host and does not protrude from the device.

b) Provide photos of the antenna.

Response to Item b

The antenna can be seen on pages 2,3, and 4 of the file: CC-4137 RF Exposure.pdf
An additional Set of Antenna Photographs is also included.
(See Attached file: CC-4137 Antenna Photographs.pdf)

c) Marketing of the device at 100 mW does not agree with the filing. Correct the cover letter to agree with the output power.

Response to Item c

The cover letter was amended to:

“Transmitter Power is adjustable from 0 – 100 mW, (US 22 mW) programmable for different countries”

d) The revised output power used a peak power meter but the chart indicates that this is an EIRP level. What is the conducted level measured with a peak power meter? If you only did radiated measurements with a peak power meter, indicate how this was done and provide calculations.

Response to Item C

The lab took Conducted Peak Power measurements.
(See attached file: CC-4137 Conducted Peak Power Measurements.pdf)

1. Is this the correct users manual? It refers to body worn tests with holster, and does not seem to mention PCMCIA.

Response to Item 1

This PCMCIA card, once it is approved for sale, is used by manufacturers of belt-mounted printer manufacturers. The PCMCIA card is sold to Zebra, O'Neil, Paxar, Monarch, and other manufacturers for instillation in their portable printers. These manufacturers have been informed that SAR/EMC testing is required for the finale configuration to insure compliance.

2. Device was tested for EMC as module, and for SAR as possible limited module. If module request is withdrawn, will need testing in typical host product(s).



[Response to Item 2](#)

The information requested to support modular approval is included in this letter. Until Symbol can sell the radio, data from the module in another manufacturers product is not available. The manufacturers that will incorporated this radio into their products have been advised that SAR / EMC testing is required for compliance to existing regulations

3. How is dipole target SAR for body liquid obtained?

[Response to Item 3](#)

Please find attached file (Validation plot.pdf) containing the systems validation plot taken on the day of the test in PCS brain material. After this validation, the liquid was changed to 2,450 MHz muscles and the test was performed.

4. FYI in future filings you may be asked to describe duty factor and justify crest factor=1 for these types of devices.

[Response to Item 4](#)

The information was passed on the lab that performed the SAR testing.

5. Exhibit "New SAR Photographs" appears to show different connector setup compared to exhibit "RF Exposure." Please submit internal and external photos showing antenna/connector configuration for final package.

[Response to Item 5](#)

An additional Set of Antenna Photographs is attached showing Symbol's finale configuration of the radio. (See Attached file: CC-4137 Antenna Photographs.pdf)

The manufacturers that incorporated this radio into their products have been advised that SAR / EMC testing is required for compliance to existing regulations.

6. We disagree with response to question 5 in Crn 22319, based on below Speag comments. Under assumption that sensitivity coefficient for ConvF at 1800 MHz is same as at 900 MHz, SAR=.214 scales to .287 W/kg. Since SAR is reasonably below the limit, repeat testing with correct Suppl C liquid will not be required for this filing.

[Response to Item 6](#)

The information was passed on the lab that performed the SAR testing.

Regards,

Mark S. Luksich