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23 August 2011

Federal Communications Commission
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, Maryland 21046

Subject: Original Application FCC ID: EHA-1000CP01SX1

Dear Application Examiner:

Intermec Technologies Corporation is submitting this application for certification of Models 1000CP01S, 1000CP02S, 1001CP01S, under FCC ID: EHA-1000CP01SX1. The devices are handheld computers containing two radio modules: the Intermec Model RC12 and the Sierra Wireless Model MC8355. The RC12 module is an 802.11 a/b/g/n - Bluetooth radio. The MC8355 module is a UMTS radio. Although the MC8355 has CDMA capability, this functionality will be disabled at the factory. Per FCC KDB 442812 D01 SDR Apps Guide v02, third parties (end users, professional installers, and distributors) will not have the ability to configure or operate the radio outside the limits of this filing and associated grant. System authorization is sought under FCC 15.247, FCC 15.407, FCC 22H, FCC 24E, and FCC 27

The models 1000CP01S, 1000CP02S, and 1001CP01S are electrically and mechanically identical except in the size of the keyboard and battery. Everything above the keyboard, including the radio module, antenna, main system board, LCD, is electrically and mechanically identical. Internal and external photos for all three models have been submitted with this application.

Please note that brand names instead of model numbers are used in the some of the exhibits. These brand names correspond to the model numbers as follows: CN70 = 1000CP01S, CN70e = 1000CP02S, CK70 = 1001CP01S. Also, the Sierra Wireless MC8355 module is electrically and mechanically identical to the Qualcomm Gobi3000™ module. All exhibits and test reports for the Gobi3000™ are representative of the MC8355.

The handheld computers can be used closer than 20 cm to the user's head or torso so a SAR evaluation was performed on all three models. The UMTS and 802.11a/b/g/n radios can transmit simultaneously. The 802.11a/b/g/n and Bluetooth radios are combined on the same module so they share the same antenna, but they cannot transmit simultaneously. The closest spacing between the UMTS and 802.11a/b/g/n-Bluetooth antennas is 3.7cm. Per KDB 648474, the output power of the Bluetooth radio is 7mW, so it is below P_{ref} and does not require SAR evaluation. However the output power of the UMTS and 802.11a/b/g/n radios are greater than $2*P_{ref}$ for all bands, so they required stand-alone SAR evaluation. The sum of the 1-g SAR measured for the UMTS and 802.11a/b/g/n radios was less than the SAR limit of 1.6 W/kg, so SAR evaluation for simultaneous transmission was not required.

In the DFS frequency bands, the RC12 radio will only operate as a client device per FCC 15.202; it has no radar detection and no ad-hoc capability. Per FCC KDB 848637, the RC12 radio cannot initiate, or be configured to initiate, any transmissions including transmissions from probes, beacons or support ad-hoc modes of operation. The client software and associated drivers will not initiate any transmission on DFS frequencies without initiation by a master. This includes beacons and ad-hoc peer-to peer modes. While under the control of a FCC compliant master device, Intermec declares that the product cannot transmit between 5600 – 5650 MHz. A DFS test for a client device was performed.

The antennas are integral to the handheld computer. They are not user accessible so they meet the requirements of FCC 15.203.

The receiver portion of the UMTS radio has been verified to FCC 15B requirements.

The following is a summary of the reports submitted with this application:

Type	Purpose	Reports
EMC 15.247 15.407	Stand alone module testing of the Intermec RC12. Used to demonstrate compliance for antenna port direct connect measurements, AC power line conducted emissions measurements, and spurious radiated emissions. Testing was done with a higher gain antenna of the same type as used for this application, so this data is applicable.	NWEMC Reports- INMC0575, INMC0575.1, INMC0575.3
DFS 15.407	System testing for DFS of RC12 Module in Model 1000CP01. This is representative of all three handhelds since the radio, antenna, main system board, etc are electrically and mechanically identical.	NWEMC Report – INMC0648
EMC 22H 24E 27	Stand alone module testing of the Sierra Wireless MC8355 (Qualcomm Gobi3000™). Used to demonstrate compliance for antenna port direct connect measurements.	Qualcomm Report– 80-N2162-203 Rev C
EMC 22H 24E 27	System level testing of the MC8355 module in Models 1000CP01S, 1000CP02S, and 1001CP01S for spurious radiated emissions and radiated power.	NWEMC Report – ITRM0249
SAR 2.1093	System level SAR evaluation of the MC8355 module in Models 1000CP01S, 1000CP02S, and 1001CP01S	NWEMC Reports - ITRM0248 ITRM0248.1 ITRM0248.2
SAR 2.1093	System level SAR evaluation of the RC12 module in Models 1000CP01S, 1000CP02S, and 1001CP01S	NWEMC Reports – ITRM0248.3 ITRM0248.4 ITRM0248.5

Your efforts in reviewing this application are greatly appreciated.

Sincerely,

Best regards,

Wayne F. Rieger
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