

21 February 2011



Federal Communications Commission
Authorization and Evaluation Division
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**Intermec
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Corporation**

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Subject: Original Application FCC ID: EHA-1000CP01CX2

Dear Application Examiner:

Intermec Technologies Corporation is submitting this application for certification of Models 1000CP01C, 1000CP02C, 1001CP01C, under FCC ID: EHA-1000CP01CX2. The devices are handheld computers containing two radio modules: the Intermec Model RC12 and the Sierra Wireless Model MC5728V. The RC12 module is an 802.11 a/b/g/n - Bluetooth radio. The MC5728V module is a CDMA (EVDO Rev A) radio. System authorization is sought under FCC 15.247, FCC 15.407, FCC 22H and FCC 24E.

The models 1000CP01C, 1000CP02C, 1001CP01C 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 = 1000CP01C, CN70e = 1000CP02C, CK70 = 1001CP01C.

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 CDMA 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 CDMA 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 CDMA and 802.11a/b/g/n radios are greater than $2*P_{ref}$ for all bands, so they required stand-alone SAR evaluation.

During the SAR evaluation of the CDMA radio, PCS band for the body worn configuration, it was necessary to modify the holster for the Model 1001CP01C to provide additional spacing. Additional padding was added to the holster to insure a 5mm minimum spacing between the left side of the unit and the body phantom. Intermec attests that this modification will be made to all production holsters for the Model 1001CP01C.

The sum of the 1-g SAR measured for the CDMA and 802.11a/b/g/n radios in each model was less than the SAR limit of 1.6 W/kg, so SAR evaluation for simultaneous transmission was not required:

Model	Phantom	Highest of Part 22/24	Part 15	Sum
		1g (W/kg)	1g (W/kg)	1g (W/kg)
1000CP01C	Head	0.482	0.093	0.575
	Body	1.100	0.379	1.479
1000CP02C	Head	0.561	0.111	0.672
	Body	1.200	0.372	1.572
1001CP01C	Head	0.395	0.094	0.489
	Body	0.972	0.470	1.442

The radio can operate in the DFS frequency bands as a client device only. It has no radar detection capability and in the DFS channels, the radio will not operate in AD-HOC mode. 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 CDMA 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 RC12. Used to demonstrate compliance for antenna port direct connect measurements, AC powerline 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	Stand alone module testing of the MC5728V. Used to demonstrate compliance for antenna port direct connect measurements.	CCS Report – 08U12326-1, Rev B
EMC 22H 24E	System level testing of the MC5728V module in Models 1000CP01C, 1000CP02C, and 1001CP01C for spurious radiated emissions and radiated power.	NWEMC Report – INMC0664
SAR 2.1093	System level SAR evaluation of the MC5728V module in Models 1000CP01C, 1000CP02C, and 1001CP01C	NWEMC Reports – INMC0683 INMC0683.1 INMC0683.2
SAR 2.1093	System level SAR evaluation of the RC12 module in Models 1000CP01U, 1000CP02U, and 1001CP01U. This is representative since the radio, antenna, main system board, LCD, keyboard, battery are all electrically and mechanically identical.	NWEMC Reports – INMC0681 INMC0681.1 INMC0681.2

Your efforts in reviewing this application are greatly appreciated.

Sincerely,

Best regards,

A handwritten signature in black ink, appearing to read "Wayne F. Rieger".

Wayne F. Rieger
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