

January 22, 2002

Intermec Technologies Corporation
Systems and Solutions
550 Second Street S.E.
Cedar Rapids, IA 52401**Attestation transmitter conducted power.**Federal Communications Commission
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, Maryland 21046

FCC ID: EHANOVCDPD

Subject: FCC Part 22.901(d) Certification Application for Intermec Technologies Corporation
700 handheld computer

Gentlemen

The Novatel Expedite radio power has caused some concern. Novatel has indicated, via the attached e-mail correspondence, the actual conducted power expected from the production versions of the radio installed in the Intermec 700. Hopefully this assists in satisfying the FCC that the transmitter power tested for SAR is sufficiently near the normal rating for the radio. Obtaining radios that will exhibit the maximum conducted power for a product and expecting those samples to maintain maximum conducted power during an extended period for SAR testing is nearly impossible.

Novatel specifies the conducted power of the radio to be +26.8 dBm +/-0.5 dBm. This equates to a rating of 0.479 watts with a range of 0.537 to .0427 watts. The radios tested for SAR had a conducted power of 0.45 watts during testing. This is well within the typical range for the Expedite radio.

Please contact me by telephone at (319) 846-2415 or by e-mail (Dave.Fry@Intermec.com) if there are questions or additional information needed concerning this attestation.

Yours truly,

Dave Fry,
Regulatory Engineer II
Intermec Technologies Corporation
EMC Test Laboratory

Fry, Dave

From: Weldon Lemke [WLemke@novatelwireless.com]
Sent: Monday, January 14, 2002 7:30 AM
To: 'Dave.Fry@intermec.com'
Subject: FW: Novatel Wireless Expedite - A question about TX power

Here is the answer I got back on your question about TX power on the Expedite. Please note that this is for the Expedite (NRM 6832), as the NRM 6812 is not an active product any longer (I saw that you mentioned the 6812 once below).

Weldon

-----Original Message-----

From: Sherry Smilar
Sent: Thursday, January 10, 2002 1:59 PM
To: Weldon Lemke; Sean Kozicki
Subject: RE: Novatel Wireless Expedite - A question about TX power

The quick answer is the Expedite modems assume that a 1.2 dB gain antenna will be attached. With a 1.2 dB antenna, the Expedite meets the 0.6 Watt Specification. The Expedites are tested to 26.8 +/- 0.5 dBm, which means the maximum out of manufacturing should be 27.3 dBm or 0.537 W. Typically they will be 26.8 dBm or 0.479 W.

Sherry

-----Original Message-----

From: Dave.Fry@intermec.com [mailto:Dave.Fry@intermec.com]
Sent: Wednesday, January 09, 2002 9:52 AM
To: Ronald.Leonard@intermec.com; Weldon Lemke
Cc: Stu.Adams@intermec.com; Steve.Schatz@intermec.com;
Scott.Hofstetter@intermec.com
Subject: RE: Novatel Wireless Expedite - A question about TX power

Yusi, and Ron

Attached is the FCC Grant issued for the Expedite radio. It shows the "Conducted" power at the time of FCC filing at 0.6 Watts. The test report on file with the FCC shows TX power at 0.6 W. When integrators such as Intermec place the radio within a "Portable" unit, the FCC requires Specific Absorption Rate (SAR) testing of radio frequency energy. The FCC requires this testing to be done with a radio that delivers the rated power.

In August 2001, I had 3 units with the Expedite radio installed. During testing of the Intermec 700 unit an ERP test was performed at APREL laboratories, and confirmed here at our facility. Our 700 units was only putting out 0.066 Watts ERP. During diagnostics testing we observed only 0.45 Watts conducted power from the three radios.

The FCC review of our application is being scrutinized because we are using the Novatel FCC report and referencing the 0.6 W rating, however we only tested SAR at 0.45 W. Therefore the FCC is requesting we sample the radios to verify the "Conducted" power is consistent with the SAR test power of 0.45 W. If the conducted power of the radios is at the 0.6W rating the FCC is requiring the SAR testing to be repeated and I will have to file a Class II Permissive change to notify the FCC of the new safe distances and SAR levels.

Ultimately for the future, I will have to insist on radios that perform as rated according to the FCC Grant. If the Expedite radio currently being produced is consist and only delivering 0.45W there is little anyone can do. However since RF safety is a major issue with the regulatory agencies, the on going problem of verifying conducted power will have to be addressed.

See the attached .pdf showing the FCC Grant. <<Novatel FCCID NBZNRM-6832 Original Grant.PDF>>

I believe Intermec is requesting Novatel to verify the conducted power of the Expedite radio. Are we to expect radios that deliver 0.6 or 0.45 Watts?

Thanks,
Best Regards,
Dave Fry
Regulatory Engineer,
> Intermec Technologies Corporation
EMC Test Lab Mail Stop: GR05
550 Second St SE
Cedar Rapids, IA 52401

mailto:Dave.Fry@intermec.com
phone 319 846-2415 fax 319 846-2475

> -----Original Message-----
> From: Leonard, Ron
> Sent: Wednesday, January 09, 2002 8:02 AM
> To: 'yho@novatelite.com'
> Cc: Fry, Dave
> Subject: Novatel Wireless Expedite - A question about TX power
>
> Hi Yusi,
>
> I'm one of the engineers at Intermec Technologies working on radio
> integrations, and one of the projects we are trying to finish up is the
> agency approval of the Expedite modem (NRM-6812) which is an option for
> one of our pocket PC products. We've met once, quite some time ago.
>
> The issue we are experiencing is related to the transmit power of the
> Expedite. A combination of measured low conducted power (450mW) from the
> radio, with an antenna which has low gain characteristics (-6 dBi), is
> causing the regulatory agency to lean towards a conditional product
> approval for operation at 450mW with sample testing required to ensure
> that the radio does not operate at 600mW. If samples are found to operate
> at 600mW, the agency approval process will have to be repeated.
>
> According to the hardware specification, the Expedite is rated at 0.6W ERP
> when coupled with a 1.2 dB gain antenna. Can you tell me what the actual
> conducted transmit power of the Expedite is supposed to be?
>
> If I should be addressing this question to another member of Novatel
> Wireless, would you please inform me who I can contact regarding this
> matter?
>
> Thank you in advance.
>
> Best regards,
>
> Ron Leonard
>
> Ronald K Leonard
> Intermec Technologies Corporation
> Mail Station: YL13

> 550 2nd St. SE
> Cedar Rapids, IA 52401
> Ronald.Leonard@intermec.com
> Phone: (319) 369-3383
>
>