

# ROGERS LABS, INC.

4405 West 259<sup>th</sup> Terrace  
Louisburg, KS 66053  
Phone / Fax (913) 837-3214

December 4, 2000

Federal Communications Commission  
Equipment Approval Services  
P.O. Box 35815  
Pittsburgh, PA 15251-3315

Applicant: INTERMEC TECHNOLOGIES CORPORATION  
6001 36th Avenue West  
Everett, WA 98203-9280  
Phone: (505) 856-8054

RE: Correspondence Reference Number: 17215

Equipment: FCC ID: HN21555-900

Gentlemen:

Please find enclosed the response to request for additional information regarding the submittal for grant of certification of Intentional Radiators operated in the frequency range of 902 – 928 MHz. It has been requested that the information contained in the block diagrams, operational description and schematics of the application be held confidential per Section 0.459.

A copy of the information request has been reproduced here for reference.

To: Scot Rogers, Rogers Labs, Inc  
From: Joe Dichoso  
jdichoso@fcc.gov  
FCC Application Processing Branch

Re: FCC ID HN21555-900  
Applicant: Intermec Corporation  
Correspondence Reference Number: 17215  
731 Confirmation Number: EA98687

Place your reply in the RF exposure info folder and keep this reply separate from any previous request for information.

Intermec, EA 98687 -

1. Response to item number 6 of previous correspondence indicates devices has 128 dBuV/m at 3 m. This does not calculate to the 0.9 W EIRP indicated in the reply. It is not clear how the antenna gain of the device under test would affect the conversion from measured field strength to EIRP. Please provide the calculation steps to verify the radiated output.

Provide calculations showing the conducted output power.

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INTERMEC TECHNOLOGIES CORPORATION  
MODEL: 1555 Hand Held Reader  
Test #: 000815 FCCID#: HN21555-900  
Test to: FCC Parts 2 and 15

FCCresponseletterref16801.doc

12/04/2000

2. After resolving output issues in item #1 above, please revise the MPE estimations accordingly and upload the results. Previous MPE info indicated 1 W and 3 dBi for antenna gain. We are unable to confirm the 1 W output and other info in the filing had indicated highest gain is about 3.5 dBi, please verify.

3. Item #2 of previous correspondence has not be responded. The RF exposure info in the revised manual is still the same as the previous submission. As a hand-held hand-operated device, the device must be operated at 20 cm or more from the body of persons, otherwise MPE limits do not apply. Please review previous correspondence and address issues accordingly. If you want to use the 4 cm distance currently indicated in the manual, this application will be reviewed with respect to SAR limit. At about 1 W output (conducted, as requested), SAR data may be needed to show compliance.

Note: Output is Unknown.

Proposed Grant Condition - Output is ??????. This transmitter operates in a specific hand-held RF tag reader. The device must be operated in a person's hands with a separation distance of 20 cm or more from the rest of the person's body (except hands and wrists) for satisfying MPE requirements. Users must be informed of the operating requirements for satisfying RF exposure compliance.

Kwok Chan

The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 60 days of the original e-mail date may result in application dismissal pursuant to Section 2.917 (c) and forfeiture of the filing fee pursuant to section 1.1108.

DO NOT reply to this e-mail by using the Reply button. In order for your response to be processed expeditiously, you must upload your response via the Internet at [www.fcc.gov](http://www.fcc.gov), Electronic Filing, OET Equipment Authorization Electronic Filing. If the response is submitted through Add Attachments, in order to expedite processing, a message which informs the processing staff that a new exhibit has been submitted must also be submitted via Submit Correspondence. Also, please note that partial responses increase processing time and should not be submitted.

Any questions about the content of this correspondence should be directed to the e-mail address listed below the name of the sender.

## RESPONSE

- 1.) The calculations for the EIRP are giving in the following table. It shows the calculation made with an antenna gain of 3 and 3.5 dBi ( 2 and 2.2 numeric gain). The measured 128 dBuv was first converted to volts per meter at three meters using the equation  $E(v/m)=10^{(dBuv-120/20)}$  and using this to calculate the EIRP from the equation  $EIRP(w)=(Ed)^2/30g$ , where g is defined as the numeric gain of the antenna (2 or 2.2). The antenna gain is predicted to be 3 dBi but may be as high as 3.5dB. This 3.5db gain would be best case and was documented in the report.

| FSM (dBuv) | Calculated volts/meter | Calculated EIRP g=2 | Calculated EIRP g=2.2 |
|------------|------------------------|---------------------|-----------------------|
| 128        | 2.512                  | 0.948683            | 0.845515              |

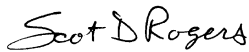
A 0.5dB margin in the field strength measurement, antenna gain or unit performance could account for an EIRP of 1.06 to 0.94 calculated conducted output power. These calculations support the request for the 1 watt maximum output power of the transmitter.

- 2.) The unit has been tested for SAR at another lab and the report will be available to the FCC. The device is a hand held unit and will be operated at 20 cm or more from the body. The appropriate labeling and user information will be supplied to the end user.

Should you require any further information, please contact the undersigned.

Thank you for your consideration in this matter.

Sincerely,



Scot Rogers  
Rogers Labs, Inc.  
Enclosures