

To: Sue Becker@EMC@PSNBL
From: Joel T. Schneider@EMC@PSNBL
Cc:
Subject: re: ... no subject ...
Attachment: BEYOND.RTF
Date: 4/4/00 10:09 AM

RF exposure - Mr. Chan, if you require additional information, please let me know and I will give it my immediate attention. Thanks.

1. 630 mW is the erp measured by using the substitution method. Initially we maximized the field strength from the transmitter to be 127.1 dBuV/m with the test antenna (biconicalog) 3 meters away. We removed the transmitter, and replaced it with a half-wave dipole antenna tuned to 836 MHz. The output of the signal generator into the dipole necessary to match the 127.1 dBuV/m level is what produced the 630 mW level. This would be below the 1.5 W requirement for device operating below 1.5 GHz. This corresponded to the manufacturer's designed for level. Using $TP = (FS \times D)^2 / 30G$, it does produce answer of 940 mW, assuming antenna gain of 1.64. The substitution value would indicate the antenna gain to be 2.44. In either case the ERP is less than 1.5 W, which would categorically exclude device from routine MPE evaluation, and for a grant level I feel more confident in the substitution measured value than the calculated using assumed antenna gain.

2. You are correct, the manufacturer did change antennas after testing was performed. For production release the MAXRAD BMEFC8353HD whip antenna is being replaced with the MAXRAD MLVP800. "The reason for the change is that during vibration testing the BMEFC8353HD was found to fail, snapping the whip. The MLVP800 was chosen for the replacement due to its passing the vibration testing and closely matching 3DB gain performance. The general antenna specifications are included below:

- > MAXRAD BMEFC8353HD:
 - > * SWR less than 1.5 to 1
 - > * 3DB gain
 - > * 1/2 wave over 1/4 wave
 - > * elevated feed antenna
- >
- > MAXRAD MLVP800:
 - > * SWR less than 1.5 to 1
 - > * 3DB gain
 - > * low profile
 - > * solid brass radiator (is not an active antenna)
- >
- > Actual antenna gain pattern measurement on the Deere installation bracket
- > show very similar performance.
- >
- > Comments regarding human RF exposure
 - > Mounting of the antenna occurs on the exterior of the vehicle operator
 - > station. Due to physical size of the vehicle operator station, this will
 - > provide 20cm separation of the antenna from the equipment operator.
 - > Typical antenna mounting points exterior of the operator station include;
 - > through-the-roof, a roof hand-hold, mirrors or other vertical metal
 - > structures on the equipment. In addition to the natural physical
 - > separation incurred during antenna installation, the installation
 - > instructions include both a warning notice and recommended antenna
 - > placements exceeding the recommended separation. (Please see pages 26
 - > thru 33 of the production release installation instructions enclosed)
- >
- > <<DeereTrax_19_25FEB00.pdf>>
- >
- > Ron Stahlhut
- > John Deere GVC
- > 319-449-1235
- > stahlhutrond@jdcorp.deere.com
- >
- >

Attachment(s):
DeereTrax 19 25FEB00.pdf

From: OET <oetech@fccsun07w.fcc.gov>, on 3/30/00 16:08 PM:

To: Joel Schneider, null
From: Joe Dichoso
jdichoso@fcc.gov
FCC Application Processing Branch

Re: FCC ID OV5-VCA10001
Applicant: John Deere Special Technologies
Correspondence Reference Number: 13156
731 Confirmation Number: EA96765
Date of Original E-Mail: 03/30/2000

The grant can only reflect the actual capability of the device. The voice specification will be deleted. The specification 40K0F1D must be justified or corrected.

40K0F1D represents a signal with a necessary bandwidth of 40 khz , FM modulation and data.

You need to supply the necessary bandwidth calculation ($2M+2D$) for the 1200 baud signal. Where M is the maximum modulation frequency and D is the maximum deviation. This should be consistent with the plot of the emission.

The emission designator must be corrected accordingly.

PLEASE ALSO ADDRESS THE FOLLOWING RF SAFETY QUESTIONS. PLACE THE REPLY IN THE RF EXPOSURE INFO FOLDER.

John Deere, EA 96765 -

1. The filing is requesting for 630 mW, assuming ERP. The measurement data indicates field strengths that relates to about 1.54 W EIRP (0.94 W ERP). The filing also indicates it is identical to a previously approved device, except for the antenna, which had 4.0 W maximum output. The output discrepancies need clarification in order to determine RF exposure compliance.
2. The antenna in the external photo exhibit is a rod but the installation manual describes a total different antenna. Please clarify and provide antenna gain information for determining RF exposure compliance.
3. The antenna installation instructions included an RF exposure warning label that requires users and nearby persons to maintain 50 cm separation from the antenna. The antenna should be installed properly to provide the needed separation distance, the burden should not be on the users or bystanders. Please provide supporting information on how the 50 cm was determined and its appropriateness for the intended installation configurations. Please revise manual information accordingly and upload the relevant pages.
4. Based on the output power level determined in item #1 above, please address RF exposure compliance issues - routine MPE evaluation or supporting info demonstrating device is categorically excluded from routine MPE evaluation.

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, 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.