

Harris Corporation - Broadcast Communication Division, FCC ID: BOICZF, Assessment NO.: AN08T7871, Notice#1

Inbox
X

 from **tim.dwyer@ccsemc.com**

 to cwilli05@harris.com,

 cc tim.dwyer@ccsemc.com,

 date Tue, May 6, 2008 at 10:42 PM

 subject Harris Corporation - Broadcast Communication Division, FCC ID: BOICZF, Assessment NO.: AN08T7871, Notice#1

[hide details](#) May 6 (1 day ago)  [Reply](#) 

Hello Carl,

You are listed as the technical contact for this application. Review of this application is complete. Aside from the following issues everything is ok.

Please respond to the following items so that we can complete this application.

Q1: It appears from documentation that the intent of this application is to certify two transmitters identical except for output powers of 375 W and 725 W. The CCS application form listed only the 725 W transmitter. Please confirm (1) that there should be two line items, one for the 375 W and a second line item for the 725 W version and (2) that both versions will bear the same FCCID: BOICZF on the equipment label.

Q2: The entry in the "Description of Product to be Marketed" field of the application form is "CZ725F". Normally this field contains descriptive information like "Wireless Router" or "Digital Television Transmitter" but it may also contain trade name or similar information up to a maximum of 50 characters. The contents of this field will be printed on the final grant. Please confirm the information to be listed in this field.

Q3: It appears from the test report and other documentation that the transmitter is intended to operate on a single channel with carrier frequency of 719 MHz. If so, this is what should be listed on the grant. Please confirm.

Q5: Frequency stability measurement data was not included in the test report. Complete data must be included in the application. It is not acceptable to make reference to another filing. Please provide frequency stability data for this application. It may be provided in a separate frequency stability test report document.

Q5: Modulation Characteristics 2.1047 was not addressed in the test report. While 2.1047(a)-(c) are not applicable to this transmitter, the requirement of 2.1047(d) is applicable and should be addressed in the test report. For this type of transmitter is generally understood that these requirements are met as a function of the occupied bandwidth and frequency stability but this should be explained. For this application, please provide a short statement in your reply email addressing this requirement. For future applications, please provide this information in the test report.

The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 30 days of the original e-mail date may result in application dismissal and forfeiture of the filing fee. 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.

Best regards,

Tim Dwyer
Technical Reviewer

 [Reply](#)

 [Reply to all](#)

 [Forward](#)

 from **Tim Dwyer** <Timothy_Dwyer@ieee.org>

 to tim.dwyer@ccsemc.com,

 date Wed, May 7, 2008 at 9:31 AM

 subject Re: Harris Corporation - Broadcast Communication Division, FCC ID: BOICZF, Assessment NO.: AN08T7871, Notice#1

 mailed-by gmail.com

[hide details](#) May 7 (1 day ago)  [Reply](#) 

Carl,

Q5 was listed twice. The first Q5 should be Q4.

Tim

- Show quoted text -

 [Reply](#)  [Forward](#)

 from **Williams, Carl (cwilli05)** <cwilli05@harris.com>
to tim.dwyer@ccsemc.com,
date Thu, May 8, 2008 at 10:31 AM
subject FW: Harris Corporation - Broadcast Communication Division, FCC ID: BOICZF, Assessment NO.: AN08T7871, Notice#1

[hide details](#) 10:31 AM (22 minutes ago)   [Reply](#) 

Tim,

Please see response's below.

Thank you
Carl

-----Original Message-----
From: tim.dwyer@ccsemc.com [<mailto:tim.dwyer@ccsemc.com>]
Sent: Tuesday, May 06, 2008 9:43 PM
To: Williams, Carl (cwilli05)
Cc: tim.dwyer@ccsemc.com
Subject: Harris Corporation - Broadcast Communication Division, FCC ID: BOICZF, Assessment NO.: AN08T7871, Notice#1

Hello Carl,

You are listed as the technical contact for this application. Review of this application is complete. Aside from the following issues everything is ok.

Please respond to the following items so that we can complete this application.

Q1: It appears from documentation that the intent of this application is to certify two transmitters identical except for output powers of 375 W and 725 W. The CCS application form listed only the 725 W transmitter.

Please confirm (1) that there should be two line items, one for the 375 W and a second line item for the 725 W version and (2) that both versions will bear the same FCCID: BOICZF on the equipment label. **This is correct,**

Q2: The entry in the "Description of Product to be Marketed" field of the application form is "CZ725F". Normally this field contains descriptive information like "Wireless Router" or "Digital Television Transmitter" but it may also contain trade name or similar information up to a maximum of 50 characters. The contents of this field will be printed on the final grant. Please confirm the information to be listed in this field. **We would like to have the product name as "Ranger CZ725F"**

Q3: It appears from the test report and other documentation that the transmitter is intended to operate on a single channel with carrier frequency of 719 MHz. If so, this is what should be listed on the grant. Please confirm. **Our previous filings have been listed as 716-722, we would like to maintain this consistency.**

Q4: Frequency stability measurement data was not included in the test report. Complete data must be included in the application. It is not acceptable to make reference to another filing. Please provide frequency stability data for this application. It may be provided in a separate frequency stability test report document.

SM: The frequency stability data is from the Apex exciter which is the frequency generating element of the transmitter. The stability data can be found in the FCC report for the DVF3400. I am attaching that section here:

<<Exciter Frequency Stability.doc>>

Q5: Modulation Characteristics 2.1047 was not addressed in the test report. While 2.1047(a)-(c) are not applicable to this transmitter, the requirement of 2.1047(d) is applicable and should be addressed in the test report. For this type of transmitter is generally understood that these requirements are met as a function of the occupied bandwidth and frequency stability but this should be explained. For this application, please provide a short statement in your reply email addressing this requirement. For future applications, please provide this information in the test report.

SM: The Modulation characteristic was also explained in the DVF3400 report. This applies to the Ranger transmitter. However I have changed the emission levels according to the levels for the Ranger power. Here is the text:

2.1047 Measurements required: Modulation characteristics.

...

(d) Other types of equipment. A curve or equivalent data which shows that the equipment will meet the modulation requirements of the rules under which the equipment is to be licensed.

Harris Response to 2.1047
The modulation is a 6 MHz FLO (Forward Link Only) signal. This is a COFDM signal made up of 4000 carriers, designated 6M00W7W.

This measurement has been made in accord with 2.1047, with limits and methodology defined by 27.53(f).

Harris interprets this requirement to mean the power of emissions at any frequency outside the licensed channel, measured in a 100 kHz bandwidth, must be lower than

$$\text{Limit} = - (43 + 10\log(P))$$

where (P) is the total power emitted inside the channel.

Use of a lesser resolution bandwidth, but no lower than 30 kHz, may be used immediately adjacent to the channel edges.

The EUT operates with a Necessary Bandwidth of 6 MHz. The measurements are to use a 100 kHz bandwidth. The transmitted signal uses a broad-spectrum modulation whose actual level is only displayed if the instrument bandwidth is equal to or wider than the transmitted channel. If the spectrum is observed using a spectrum analyzer set to 100 kHz resolution bandwidth, the measured amplitude of the in-band signal will appear to be 17.8 dB lower ($10 \times \log(6000/100)$) than the actual level.

Since the actual total power in the channel is the reference for the measurements made at each frequency using a 100 kHz bandwidth, This 17.78 dB difference must be calculated and applied to obtain the actual difference between the in-band and the out-of-band emission levels displayed.

The same calculation must be made for a resolution bandwidth of 30 kHz, if used. The result of the calculation is 23 dB ($10 \times \log(6000/30)$), and for measurements using 30 kHz resolution bandwidth. Therefore, the correction becomes 23 dB

Conducted Out of Band and Spurious Emission measurements are taken using the output sample taken after the output filters. The power output at that point is 631 watts.

With P=631 W, the out-of-band limit required is -71.0 dBc/100Khz

Therefore, all emissions measured in a 100 kHz bandwidth which are 53.2 dB or more below the power output of the transmitter, as displayed in the same 100 kHz bandwidth, are 71.0 dB or more below the total output of the transmitter.

The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 30 days of the original e-mail date may result in application dismissal and forfeiture of the filing fee. 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.

Best regards,

Tim Dwyer
Technical Reviewer

Exciter Frequency Stability.doc
 84K [View as HTML](#) [Open as a Google document](#)
[Download](#)