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**From:** Jose Betancourt  
**Sent:** Tuesday, February 01, 2011 11:44 AM  
**To:** 'PCTEST TCB/CB'  
**Subject:** RE: Questions Regarding for FCC ID: YZO-00100 and FCC ID: YZO-00400  
**Importance:** High  
Mr. Czumak / PCTEST TCB/CB:

Our responses to the questions posed in your e-mail requesting additional information are at the end of this message.

As the questions are identical for both units (FCC ID: YZO-00100 and FCC ID: YZO-00400), we are providing a consolidated response, applicable to both.

Please review and comment at your earliest convenience. Please then proceed with processing of the TCB application and update us on its status whenever possible.

I can be contacted at the phone numbers below if any other questions arise.

Thanks.

Regards, Jose'

**Jose G. Betancourt**



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Here are your original questions plus our response (in red) for each, in turn:

1. Please specifically address the 4 requirements for frequency hopping spread spectrum transmitters listed in Section 15.247(a)(1), as well as the requirements listed in Sections 15.247(g) and (h).

Section VII (Frequency Management) on page 12 of the RT1000 Theory/Operational Description document (attachment: WS-0016 R03 p4 DRAFT RT 1000 Theory \_Operational Description.pdf) has been revised to address the specific Sections of 15.247, as requested.

2. Please revise the installation guide/user's manual to include the RF Exposure warning statement required by the FCC. This should warn the installer that, in order to comply with FCC RFx requirements, the EUT must be installed so that a minimum separation distance of 20cm is maintained between the antenna(s) and all persons during normal operation, and the user should be warned of the same.

Warnings to this effect have been added to the RT1000 Deployment Guide (attachment: RT1000-

DeploymentGuide.pdf) on pages 16 (Section 2.3.2: Laying Out the Equipment), 18 (Section 4.1: Testing and Maintaining the Equipment), and 30 (Section 8.1: FCC Rules and Regulations Compliance).

3. Please revise the Operational Description to include a description of the antennas provided with the EUT- manufacturer, type, peak gain over the specified band, etc. (this information is currently only found in the installation guide).

Section V.B (The Radio/Modem) on page 10 of the RT1000 Theory/Operational Description document (attachment: WS-0016 R03 p4 DRAFT RT 1000 Theory \_Operational Description.pdf) has been revised to include a table of all the antennas that can be provided with the units. This table provides a cross reference between the Wireless Seismic Part Numbers used in the RT1000 Deployment Guide (attachment: RT1000-DeploymentGuide.pdf) and the OEM Part numbers. Note that datasheets from the OEM for each antenna have already been provided (also attached).

4. Because the EUT uses standard antenna connectors, please address the professional installation clause of Section 15.203, specifically addressing the intended application of the EUT (i.e., non-consumer), the installation requirements and the method of marketing, demonstrating that professional installation is actually *required* for it.

Response Statement:

The Wireless Seismic RT1000 system functional units (BSU and WRU) are not and will not be marketed to the general public. They are only to be marketed and sold to a very limited and specialized professional market for applications within the seismic, mineral exploration, and related community.

Due to the nature of the RT1000 system design, the use of high gain directional antennas would result in system malfunction as units must be able to communicate in multiple directions.

The permanent installation of the antennas to the units is not feasible. RT1000 system units are required to be able to be moved and stacked together under rugged conditions on a regular basis. Permanent mounting of the antenna would make this impossible as it would result in a high incidence of breakage during such moves and stacking operations.

The Wireless Seismic sales contract as well as all training materials will clearly indicate that the original antennas provided by Wireless Seismic with the RT1000 equipment should always be used.

Specifically, these materials will state that the purchaser(s) and user(s) are REQUIRED to comply with the following rules:

- The RT 1000 shall be used only with the supplied antennas attached to the functional units (BSU or WRU) with an integrated type N male connector.
- The RT 1000 antennas shall be installed and handled by professionals specifically designated and trained for this purpose.
- Any changes or modifications not expressly approved by Wireless Seismic, Inc. can void the users' authority to operate the equipment.

5. Because the EUT is an unlicensed transmitter, the parts list and tune-up procedure are not

required (nor were they submitted). Please revise the Confidentiality Request letter, removing this reference.

The Confidentiality Request letters for each unit have been revised and are attached.

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**From:** PCTEST TCB/CB  
**Sent:** Thursday, January 20, 2011 10:28 AM  
**To:** 'Jose G Betancourt -'  
**Subject:** Questions Regarding for FCC ID: YZO-00100

To: Mr. Jose G. Betancourt/ Wireless Seismic  
From: Mr. Gregory Czumak/ PCTEST TCB

RE: FCC ID: YZO-00100

Applicant: Wireless Seismic

Correspondence Reference Number: YZOY101409  
Confirmation Number: 1Y1012071409  
Date of Original Email: January 20, 2011

Subject: Request for additional information

In regards to your recent TCB application referenced above, we kindly request that you provide the following additional information.

1. Please specifically address the 4 requirements for frequency hopping spread spectrum transmitters listed in Section 15.247(a)(1), as well as the requirements listed in Sections 15.247(g) and (h).
2. Please revise the installation guide/user's manual to include the RF Exposure warning statement required by the FCC. This should warn the installer that, in order to comply with FCC RFx requirements, the EUT must be installed so that a minimum separation distance of 20cm is maintained between the antenna(s) and all persons during normal operation, and the user should be warned of the same.
3. Please revise the Operational Description to include a description of the antennas provided with the EUT- manufacturer, type, peak gain over the specified band, etc. (this information is currently only found in the installation guide).
4. Because the EUT uses standard antenna connectors, please address the professional installation clause of Section 15.203, specifically addressing the intended application of the EUT (i.e., non-consumer), the installation requirements and the method of

marketing, demonstrating that professional installation is actually *required* for it.

5. Because the EUT is an unlicensed transmitter, the parts list and tune-up procedure are not required (nor were they submitted). Please revise the Confidentiality Request letter, removing this reference.

The item indicated above must be submitted before processing can continue on the above referenced application.

Sincerely,

Gregory Czumak  
Senior Certification Engineer



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## **PCTEST TCB/CB**

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To: Mr. Jose G. Betancourt/ Wireless Seismic  
From: Mr. Gregory Czumak/ PCTEST TCB

RE: FCC ID: YZO-00400

Applicant: Wireless Seismic

Correspondence Reference Number: YZOY101407  
Confirmation Number: 1Y1012071407  
Date of Original Email: January 20, 2011

Subject: Request for additional information

In regards to your recent TCB application referenced above, we kindly request that you

provide the following additional information.

1. Please specifically address the 4 requirements for frequency hopping spread spectrum transmitters listed in Section 15.247(a)(1), as well as the requirements listed in Sections 15.247(g) and (h).
2. Please revise the installation guide/user's manual to include the RF Exposure warning statement required by the FCC. This should warn the installer that, in order to comply with FCC RFx requirements, the EUT must be installed so that a minimum separation distance of 20cm is maintained between the antenna(s) and all persons during normal operation, and the user should be warned of the same.
3. Please revise the Operational Description to include a description of the antennas provided with the EUT- manufacturer, type, peak gain over the specified band, etc. (this information is currently only found in the installation guide).
4. Because the EUT uses standard antenna connectors, please address the professional installation clause of Section 15.203, specifically addressing the intended application of the EUT (i.e., non-consumer), the installation requirements and the method of marketing, demonstrating that professional installation is actually *required* for it.
5. Because the EUT is an unlicensed transmitter, the parts list and tune-up procedure are not required (nor were they submitted). Please revise the Confidentiality Request letter, removing this reference.

The item indicated above must be submitted before processing can continue on the above referenced application.

Sincerely,

Gregory Czumak  
Senior Certification Engineer



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