

From: David Chernomordik ES-Mpk
Sent: Friday, June 17, 2005 9:20 PM
To: Roland Gubisch ES-Box
Cc: Terre Wolak ES-Atl
Subject: RE: Technical review of Topcon FCC ID: LCB-960801
Hi Roland,

Please see my comment below in blue.

GENERAL

Is it possible to operate the EUT with more than one transmitter installed? Please indicate in Theory of operation where this is described. If not, this should be made clear. If more than one transmitter can operate at a time (simultaneously or separately), please explain how two different antennas (Part 15 and licensed) are supported.

FCC policy is to reserve one FCC ID for each possible combination of installed transmitters.

The device contains the following transmitters:

1. Bluetooth
2. UHF modem
3. GSM module (optional)

On pages 1-10 and 1-11 of the operational manual (files: HiperXT_om part 1, HiperXT_om part 2), which are also operational description) the following internal components are briefly described: GPS+Antenna, Bluetooth module, Radio modem, GPS module. There are also detailed description of these components.

Two transmitters may operate simultaneously: Bluetooth and UHF, or Bluetooth and GSM. UHF and GSM may not operate simultaneously. This Statement is written on page 3-1.

The antenna of the Bluetooth module is internal, permanently connected. The antennas of UHF and GSM modules are external 3 dBi whip.

The GSM module has its own modular approval (FCC ID: IHDT56DB1). Since it is not modified, the module may be installed without additional testing/certification. The wording "Contains FCC ID: IHDT56DB1" is on the Label.

As is written in the report (Addendum report for part 15), the identical Bluetooth module is used in the previously certified device (Hiper+, FCC ID: LCB-840801). So, the only limited tests were performed on Bluetooth.

The only one FCC ID is used for this device.

PART 15

Administrative

- (1) An attestation of professional installation is needed to justify a detachable antenna - or a non-standard antenna connector. Please explain.
- (2) Please review the attached draft Grant notes for appropriateness.

The antenna of the Bluetooth module is internal, non-detachable.

Regarding the grant note for part 15. The Bluetooth module is co-located with UHF or GSM in this device. Maybe better ".....and must not be co-located or operating in conjunction with any

other antenna or transmitter, [except antennas and transmitters installed in this device...](#) or similar wording.

PART 15

Technical

Frequency-hopping band edge compliance is assessed per DA 00-0705 with the hopping both enabled and disabled. It is not clear from the test report if both modes were measured. Please clarify. Note that for BT-compliant radios a simplified approach can be used, with an attestation (see attached); this may or may not apply here.

[In the Part 15.247 report \(report #30392832, March 28, 2003\), for band-edge compliance, out-of-band emission measurements were performed in hopping disable mode \(plot 6.1.d for low channel, and plot 6.3.d for high channel\). However, there are plots \(4.1 and 4.3\) showing number of hopping channels, which were made in hopping mode. It is clear from these plots that the emissions on band-edge frequencies are in compliance with 15.247 requirements.](#)

PART 90

Administrative

(1) Tune-up information was not found; please indicate location, or provide.

[Tune-up information is in the HiperXT operation manual \(particular section will be provided\)](#)

(2) DC voltage and current into final RF stage was not found; please indicate location, or provide.

[Will be provided.](#)

(3) The User manual references an installed GSM module rather than the UHF module tested, for RF safety compliance; please explain.

[The RF exposure Statement regarding the UHF modem is on pages 2-27, 2-34 of the HiperXT_om part 1, HiperXT_om part 2](#)

(4) If the GSM module can be installed without its own FCC ID label visible, an additional label "Contains FCC ID:IHDT56DB1" must be applied. Please provide label artwork and location. See also GENERAL above.

[The wording "Contains FCC ID: IHDT56DB1" is on the Label. Is it necessary to have additional label?](#)

(5) Please review the attached draft Grant notes for appropriateness.

[The UHF module is co-located with the Bluetooth. The power of the Bluetooth module is 1 mW - less than 5% of the power of UHF \(2W\). Is it considered as a co-location? If yes, than the same suggestion, as for part 15](#)

Technical

(1) If this application is to include the GSM module, measurement of spurious emissions may be required. Please comment.

[This Applications is to include the UHF module \(which was tested\), GSM module \(which was not tested, as it has a modular approval\) and Bluetooth module \(which was partly tested \(spurious radiated\), as it was certified in another host\)](#)

(2) Please comment on how the radio satisfies the spectrum efficiency requirements in 90.203(j)(4)-(5).

Will be provided

Thank you,
David

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

From: Roland Gubisch ES-Box
Sent: Friday, June 10, 2005 4:28 PM
To: David Chernomordik ES-Mpk
Cc: Terre Wolak ES-Atl
Subject: Technical review of Topcon FCC ID: LCB-960801

David,

Technical review of this application is complete and the following issues are noted:

GENERAL

Is it possible to operate the EUT with more than one transmitter installed? Please indicate in Theory of operation where this is described. If not, this should be made clear. If more than one transmitter can operate at a time (simultaneously or separately), please explain how two different antennas (Part 15 and licensed) are supported.

FCC policy is to reserve one FCC ID for each possible combination of installed transmitters.

PART 15

Administrative

- (1) An attestation of professional installation is needed to justify a detachable antenna - or a non-standard antenna connector. Please explain.
- (2) Please review the attached draft Grant notes for appropriateness.

Technical

Frequency-hopping band edge compliance is assessed per DA 00-0705 with the hopping both enabled and disabled. It is not clear from the test report if both modes were measured. Please clarify. Note that for BT-compliant radios a simplified approach can be used, with an attestation (see attached); this may or may not apply here.

PART 90

Administrative

- (1) Tune-up information was not found; please indicate location, or provide.
- (2) DC voltage and current into final RF stage was not found; please indicate location, or provide.
- (3) The User manual references an installed GSM module rather than the UHF module tested, for RF safety compliance; please explain.
- (4) If the GSM module can be installed without its own FCC ID label visible, an additional label "Contains FCC ID:IHDT56DB1" must be applied. Please provide label artwork and location. See also GENERAL above.
- (5) Please review the attached draft Grant notes for appropriateness.

Technical

(1) If this application is to include the GSM module, measurement of spurious emissions may be required. Please comment.

(2) Please comment on how the radio satisfies the spectrum efficiency requirements in 90.203(j)(4)-(5).

Thank you,
Roland