

FCC

September 4, 2012

RE: FCC ID: E5MDS-MERCIDU3A

Attention: Stan Lyles

Please find our responses to your comments on this application below:

Your operational description describes need to be Modified:

1) We would prefer to have separate CBP descriptions and Theory of Operation. In your case you can leave the Theory of Operation as is but cut and past the CBP parts into a separate CBP description.

Response: The Theory of Operation for each of these products and the CBP descriptions has been separated into their own documents. One CBP description document has been uploaded that is applicable for both Basestation and Subscriber versions of hardware.

2) Your CBP Description should not contain both Restricted Contention Protocol and Unrestricted Contention Protocol You need to remove the Restricted Contention Protocol.

Response: The restricted contention protocol description has been removed from the documentation.

3) Then each CBT (GE MDS LLC, FCC ID: E5MDS-MERCIDU3A, EA551457 and FCC ID: E5MDS-MERCODU3A, EA347120) description should be add a simple sentence to indicate that this description is for the: Bases or remote as applicable. Then you need to define the compatible FCC IDs that the Base or remote is compatible with.

This is only necessary to identify the far end compatible device by FCC ID in the initial application.

Response: The new CBT description document is titled "GE MDS Contention Protocol Description." Within this document, the FCC IDs of all GE MDS 3650 devices are listed and their compatibility with each other.

4) I would simply add at the beginning this description is for the Remote, then a brief statement that it will not initiate a transmission unless it sees a configured Base station, this is done every frame (5 ms) etc—Use your own words. Then say the following is the CBP system description for both the base and the remotes.

Response: Within the CBP document, a paragraph has been added about the TDD system design having subscribers detect the CBP Basestation before beginning transmissions, thus the protocol is applicable to both Subscriber and Basestation units.

5) When a new device is granted you do not have to file a Class II change for to all other existing compatible devices. However, this is treated as a Class I Change and a manufacture would need to maintain records too identify all compatible devices. This would be typical of any good system provider.

Response: Our subscriber and Basestation units have been internally validated to be operational only with each other at this time. If, in the future, we require compatibility with third party vendors to enable the CBP protocol we will perform extensive testing to ensure compliance with both regulatory and product performance expectations.

6) Define default value before users make any adjustment?

Response: For each of the configurable parameters (Interference listening duration and Power detection Threshold) the default values have been added to the CBP description (Sections 2.a and 2.b)

7) I do not see test results for demonstrating CBT threshold settings for the Base Station... Typical demonstration shows a conducted test between a Base Station and remote. A CW signal is introduced at (1) just outside and below occupied Bandwidth, (2) inside at low end of occupied Bandwidth, (3) inside at the middle of occupied Bandwidth, (4) inside at high end of occupied Bandwidth, (5) outside and just above occupied Bandwidth,

This is done at two thresholds Low and high end of range

A simple table showing CW signal at introduced Frequency at Threshold and just below threshold

A Yes/NO indication for each cell to indicate CBT detection (Yes: CBT active remote not transmitting—at threshold No Below and No Out of band.)

Response: A test report titled “GE MDS Mercury3650 CBT Test Report” has been uploaded reporting the functionality CBP when presented with CW interferers. In addition to your request for data at the lowest and highest threshold settings, measurement results for the default threshold have also been included. These tests were performed for each of the 5 operating bandwidths that we are capable of operating in. A list of frequencies used for the testing are listed in the document. We chose +/-1MHz outside of the occupied signal bandwidth for the out-of-band CW tone

tests and used the lower, middle, and upper frequencies of the passband per your instructions for the in-band tests. All of the data captured shows that our product detects the in-band CW signals within 1dB of the configured threshold, while out of band CW interferers are not detected at threshold levels due to receive channel filtering.

8. User manual mentions the device has an associated / optional Wi-Fi and antenna; what is approval status for it please (FCC ID, modular or not, etc).

Response: The WiFi module that we are using has a modular approval. All details including FCC ID, frequency range, and Grant date have been added to the Mercury2-MIMO 3659 ODU Theory Of Operation in Section 2.5, and the Mercury 2-MIMO 3650 IDU Theory of operation in Section 2.4.

9. Provide the necessary bandwidth for each line item below per Section 2.202.

FCC ID: E5MDS-MERCIDU3A  
Confirmation Number: EA551457

	Frequency Range	Emissions Designator
1	3653-3697	3M30G1D
2	3653-3697	4M07G1D
3	3654-3696	6M60G1D
4	3655-3695	8M20G1D
5	3656-3694	9M20G1D

Regards,



David W. Bare  
Chief Engineer

DWB/dmg

Uploaded Exhibits:

GE MDS Contention Based Protocol Description 08-30-2012.pdf  
GEMDS\_MERCURY3650\_CBT\_TEST\_REPORT\_8\_30\_12.pdf  
Mercury2-MIMO 3650 IDU Theory of Operation 08-30-2012.pdf