Non-Conformities FCC ID: XFU-18551001 (CKC CS Ref # E09-000123-FCC-01)

The items listed below represent requests for information following review of this application for certification under United States (FCC) regulations. Further question may arise pending review of responses to these items.

OK	ID	#	Non-Conformity or Comment	Submitted Response	Respondent / Date of Response
X	C	1	Confidential letter in not included in the submittal package. Please confirm whether confidential for this application is needed and provide a confidential letter signed by the person listed on the FCC website or authorized person as appropriate. In the latter case, please also provide letters of authorization signed by the authorized individual designating the alternate(s). In all cases, a paper trail must be demonstrated leading back to the person named under the grantee code. Note: I do not have any Confidentiality Letters on file for this application. Please provide Confidentiality Letters. I have attached a draft copy of Confidentiality Letters for all the agencies to this e-mail. – Jessina 9/21/09. The provided confidential letter, Img-FCC-C-885870.pdf and Img-FCC-T-885870.pdf. The person signing the letter is Jeff Schnitzer. However, on the FCC website, the contact name listed as grantee is Lane Killion. please provide letters of authorization signed by the authorized individual designating the alternate	Confidentiality Letters Provided. Grantee Information has already been Updated. *I Ran a New Query and the FCC Website has been updated. A New Confirmation File has been Provided. It has been placed in the Temp Folder for this application.*	Robert Nikkels 9/3/09 Robert Nikkels 9/22/09 *Jessina Hunter 9/22/09*

				9/22/09 New contact on grantee site is Jeff Schnitzer.	
X	C	2	he FCCID for this application is XFU18535001, however, the FCCID on the provided label is XFU-18551001. Please provided a revised label with the correct FCCID nmber. Note: After researching this I believe that I filed this application with the wrong FCC ID. I think that the FCC ID on the Label is correct for this filing. The filing is for the Models: 185510-01 and 185511-01/179168-01. Please confirm or deny that the FCC ID: XFU-18551001 is correct. Thank you. – Jessina 9/21/09: The FCCID label photograph for the remote device, file name : RF Cert Pics_Remote Gateway Labeling.jpg showed the FCCID printed on the label as XFU-1855**1101** instead of XFU-1855**1001**. Please provided a new label photograph for the remote unit with appropriate FCCID. Please include a ":" after FCC ID.	I believe that the ID Label is correct. But I need to confirm this with the Customer before action is taken. Updated Label and Label Drawings provided. The FCC ID should be XFU-18551001. Updated the Application Form and the Application Report. Updated drawing, see 284386b.pdf. See the placement on the actual product DSCN601.jpg and DSCN602.JPG 9/22/09 OK	Jessina Hunter 9/15/09 Robert Nikkels 9/21/09 Jessina Hunter 9/21/09 Robert Nikkels 9/22/09
X	C	3	This application sought certification for two devices under the same FCCID, however there is not indication whether both devices are electrically and functionally identical. Please provide a letter to jusity the combined filing.	Signed copy of letter, see FCC XFU-18551001.pdf	Robert Nikkels 9/22/09
X	C	4	Please provide a brief description of the circuit funtion of Manager Gateway Module (part number 185510-01) and stand-alone Manager Gateway module 185511-01/179168-01. Note: I found only one reference to the 185510-01 model on page 2 PP 2 under section 3.1 of the document provided. The PP is very un-informative and does not really include any detail about the operation of this part of the system. After searching the document on file there was no reference found pertaining to the model number 185511-01/179168-01 though. Please update your operational description or provide a new operational description to include a more detailed description of the model 185510-01 and to	Updated Operational Description Provided.	Robert Nikkels 9/21/09

			include a description of the model 185511-01/179168-01. Thank you. 9/21/09: The provided, revised functional description " Overview description_Aug 09.doc " is identical to the functional description submitted at an earlier date. Please confirm whether the uploaded file is the updated document meeting the requirement as detailed in FCC2.1033(4) .	Yes it should be the same file. I was told that you could not locate it; so, I resent the same file. Should meet requirements. 9/22/09EW…Not detailed but good enough.	Robert Nikkels 9/22/09
X	C	5	The provided block diagram does not meet the requirement. Please provide a block diagram of Manager Gateway Module (part number 185510-01) and stand-alone Manager Gateway module 185511-01/179168-01, showing the frequency of all oscillator. The tuning ranges(s) and intermediate frequency(ies) shall be indicated at each block. Note: I have attached an example of a Block Diagram for your reference. 9/21/09: The Block Diagram is missing the Clock Frequencies. Provide Clock Frequencies in the Block Diagram. 9/22/09: The block diagram presented on page 2 of the schematic diagram 181492C1_Manager Gateway.pdf does not satisfy the requirement accordance with FCC2.1033(b)(5) *A block diagram showing the frequency of all oscillators in the device. The signal path and frequency shall be indicated at each block. The tuning range(s) and intermediate frequency(ies) shall be indicated at each block.* Please provide a block diagram metting the description as detailed in 2.1033(b)(5) . Note: A schematic diagram is also required for intentional radiators..	Block Diagram Provided in the File named "181492C1_Manager Gateway" Page 2. 9/24/09 EW. Copied page 2 od schematic to a separate clock diag file, client clarify this interface does not contain any clock or transmit freq or RF signal path.. Received block diagram of Programmer board from Dust Network	Robert Nikkels 9/21/09
X	C	6	The provided schematic has a description " Schematic diagram wSIM MAIN". Please provide sheatic diagram of Manager Gateway Module	Schematics Provided in the Document Entitled "181492C1_Manager	Robert Nikkels 9/21/09

			(part number 185510-01) and stand-alone Manager Gateway module 185511-01/179168-01 Hint: I cannot find any schematics that go with this application on file. Please provide schematics for this product. Thank you. 9/21/09: The provided schematic 181492C1_Manager Gateway.pdf does not appear to match the Internal Photos - Model 185510-01.pdf and Internal Photos - Model 185511-01179168-01.pdf. Please confirm whether the PCB 600-0112_rev 1 is included . Please provided the schematic for PCB 600-0112 _rev 1. (this is the PCB where the Dust network card is plugged into) 9/22/09: Programmer PCB is not provided by Dust Network. please contact Dust Network to obtain the schematic diagram of program manager board PM2510-1 (PCB #600-0112 Rev 1) Hint: Dust Network may have certified the radio card without the programmer board or perhaps it was used as support device at tehe time of certification. However, since Bently Nevada incorporates the programmer into the product, the programmer board becomes a part of the product and the schematic is needed to fulfill he certification requirement.	Gateway" The schematic 181492 (is for the Manager Gateway PWA (print wiring assembly)) and this board will go into 185510-01 or 185511-01 depending on which form-factor needs to be built. The name of the schematic is wSIM Gateway but that was the name first given to the board. Since then the name changed an additional six times, but the name on the schematic remained the original name given. The drawing is for internal use and a customer would never see it. The Dust's program manager board PM2510-1 is indeed PCB #600-0112 Rev 1 and this part is being installed into our board. We have a signed authorization from Dust that the schematic on file with you can be used for this review process. We do not have a copy of that schematic. 9/24/09 EW: Dust network provided Schematic for the Program manager board PM2510 .	Robert Nikkels 9/22/09
√	C	7	The internal photoes do not show the bottom side of the PCB. Please provide revised internal photgraphs showing both top and bottom side of the PCB. Note: I have attached a Copy of the Internal Photos on file. Please let me know if they are the appropriate Photos. If they are the	New Internal Photos Provided.	Robert Nikkels 9/21/09

			correct photos then please send photos of the bottom of all boards that pertain to this device. Thank you.		
√	C	8	The provided external photographs do not resemble Manager Gateway Module (part number 185510-01) and stand-alone Manager Gateway module 185511-01/179168-01 as shown in the test setup photo. Please provide appliacble photograph showing all six sides of the device. Note: I have attached a Copy of the External Photos on file. Please let me know if they are the appropriate Photos. If they are not then please send me the photos for this application. Thank you.		
X	TL	9	15.31(e) For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. Please show compliance to 15.31(e)	This change (statement added to power output test conditions) has been annotated in bold Red in Report E09-025 doc file which is included as an attachment to this email.	Chuck Kendall 9/22/09
X	TL	10	C conducted emission 150kHz-30MHz, Page 11, 15, 19and 23 of the test report FC09-025, Page 11, 15,19,23 of the test report FC09-024 RBW=120kHz, VBW=300kHz. Radiated emission 9kHz - 30MHz, Page 72of the test report FC09-025, RBW=1MHz, VBW=1MHz, Radiated emission 1- 25GHz, Page 77 of the test report FC09-025, RBW=100kHz, VBW=100kHz, Radiated emission 9kHz-30MHz, page 80 of the test report FC09-025, RBW=100kHz VBW=300kHz,	All of these bandwidths have been modified in both E09-024 and 025 in bold red . 9/23/09. Corrected. RBW meets ANSI 63.4 of minimum RBW of 10kHz for 9kHz - 30MHz. and RBW =1Mhz ablove 1 GHz.	Chuck Kendall 9/22/09
X	C	11	Please provide a revised user rmanual with the inclusion of antenna installation instruction including antenna separation for RF exposure compliance.	Updated Users Manual Provided.	Robert Nikkels 9/21/09

			Hint: Just add instructions on how to install the antenna in the users manual or provide a letter that the antenna is installed at the factory. 9/21/09 Antenna separation for RF exposure compliance is missing from the user manual, please include antenna separation distance to be listed on the grant 9/22/09 Safe **antenna separation distance** for RF exposure compliance is not included in page 4, 10, 11, 12, 13, 30, 31, 32 and 33. of Essential Insight.mesh Installation and Maintence Manual 22Sep09. Please include statement cautioning the user to maintain a safe distance between the user and the antenna in accordance to the antenna separation distance to be listed on the grant, Hint: The grant of radio card (Dust radio card) listed "The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter".	Update manual is attached, see Essential Insight.mesh Installation and Maintence Manual 22Sep09. Pages of interest are: 4, 10, 11, 12, 13, 30, 31, 32 and 33. 9/23/09 updated usermanual Essential Insight.mesh Manual_Sep23-09.pdf. with "The antenna used for this device must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter."	Robert Nikkels 9/22/09
X	C	12	Please provide an updated users manual incorporating the statement required by 15.21. Hint: Rule Part Attached. 9/21/09: required statement in accordance with 15.21 is not included in the user manual," Essential Insight mesh Installation and Maintenance Manual 4Sep09 LTK Chgs.pdf" . Please provide an updated users manual incorporating the statement required by 15.21, with specific mention ing of changes or modifications not expressly approved by the party responsible for compliance.	Updated Users Manual Provided. Update manual is attached, see Essential Insight.mesh Installation and Maintence Manual 22Sep09. Pages of interest are: 4, 10, 11, 12, 13, 30, 31, 32 and 33.	Robert Nikkels 9/21/09 Robert Nikkels 9/22/09
√	C	13	Please provided photo showing the placement of the labels on the device Manager Gateway Module (part number 185510-01) and	Updated Label and Label Drawings provided. The FCC ID should be	Robert Nikkels 9/21/09

			stand-alone Manager Gateway module 185511-01/179168-01. .	XFU-18551001.	
X	TL	14	Bandedge plots Page 88 and 89 of the tet report FC09-25. The provided plots show RBW =100kHz, please provide new plots or data sheet showing compalice at restrcted band , measured with the appropriate RBW (Radiated emission) 9/23/09: for radiated bandedge compliance, KDB 558074 step 2 states " *Radiated emission t est: Applies to harmonics/spurs that fall in the restricted bands listed in Section 15.205. The maximum permitted average field strength is listed in Section 15.209. A pre-amp (and possibly a high-pass filter) is necessary for this measurement. For measurements above 1 GHz, set RBW = 1MHz, VBW = 10 Hz, Sweep: Auto. …* *In another FCC Document, DA 00 705 ….If the emission on which a radiated measurement must be made is located at the edge of the authorized band of operation, then the alternative "marker-delta" method, listed at the end of this document, may be employed.* *DA 00 705 … "delta" measurement technique may be used for measuring emissions that are up to two "standard" bandwidths away from the band-edge, where a "standard" bandwidth is the bandwidth specified by C63.4 for the frequency being measured.* ***For example, for band-edge measurements in the restricted band that begins at 2483.5 MHz, C63.4 specifies a measurement bandwidth of at least 1 MHz.*** *Therefore you may use the "delta" technique for measuring emissions up to 2 MHz removed from the band-edge. Radiated emissions that are removed by more than two "standard" bandwidths must be measured in the conventional manner.*	This does not have to be changed IAW our own CKC test procedure and KDB procedures, step 2 tells you to use these bandwidths after you have made the measurement using CISPR BWs. **NO CHANGE REQUIRED.** **The limit line reported on the band edge plots includes the correction factor to 1 MHz bandwidth as required by DA00-705 marker delta method. The correction factor used was 3.8 dB.** **Outside of the 2 MHz away from the band edge no EUT signals were observed. Refer to spurious datasheet for other emissions.**	Chuck Kendall 9/22/09 Mike Wilkinson 9-24-09
X	TL	15	Please provide revised test report presenting output power in watt.	This has been added in the E09-025 test report in bold red.	Chuck Kendall 9/22/09
X	TL	16	Please provided data sheet showing compliance to 15.247(d) radiated spurious emission.	Datasheet's title has been changed to show compliancy to 15.247(d) in red, bold.	Chuck Kendall 9/22/09

X	TL	17	The sweep speed of Power spectral density plot is 1.38 second, which does not comply with sweep speed as required for PSD option 1 (KDB558074). Please provide new PSD measurement with appropriate sweep speed. Alternatively if PSD Option 2 was used, please confirm and justify with appropriate power measurement.	The actual reading was performed IAW Span in MHz divided by 300 kHz, these sheets were included in the report as representative only. **NO CHANGE REQUIRED.** 9/23/09 Test lab confirmed the sweep rate at the time of testing was correct; the sweep rate presented on the test report is not the sweep rate used during the actual measurement.	Chuck Kendall 9/22/09
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