Lynxus Technology 2AHUTZBM ZBM Zigbee RF Module Instructions

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Contents

INSTRUCTIONS

Compliance list INTEGRATION INSTRUCTIONS for 996369 D03 OEM the and 996369 D03 OEM by Sections 2.2 through 2.10.

Requirement	Yes	N/A	Comment
List of applicable FCC rules List the FCC rules that are applicable to the m odular transmitter. These are the rules that sp ecifically establish the bands of operation, the power, spurious emissions, and operating fun damental frequencies. DO NOT list complianc e to unintentional-radiator rules (Part 15 Subp art B) since that is not a condition of a module grant that is extended to a host manufacturer. See also Section 2.10 below concerning the n eed to notify host manufacturers that further t esting is required.3	**YES**		Refer to instruction FCC standards: FCC CFR Title 47 Part 15 S ubpart C Section 15.249

Summarize the specific operational use conditions Describe use conditions that are applicable to the modular transmitter, including for example any limits on antennas, etc. For example, if point-to-point antennas are used that require reduction in power or compensation for cable loss, then this information must be in the instructions. If the use condition limitations extend to professional users, then instructions must state that this information also extends to the host manufacturer's instruction manual. In addition, certain information may also be needed, such as peak gain per frequency band and minimum gain, specifically for master devices in 5 GHz DFS bands.	**YES**		Refer to instruction Antenna Type: External Antenna Antenna Gain: 3.5dBi

Limited module procedures If a modular transmitter is approved as a “limit ed module,” then the module manufacturer is r esponsible for approving the host environment that the limited module is used wi th. The manufacturer of a limited module must describe, both in the filing and in the installatio n instructions, the alternative means that the li mited module manufacturer uses to verify that the host meets the necessary requirements to satisfy the module limiting conditions. A limited module manufacturer has the flexibili ty to define its alternative method to address t he conditions that limit the initial approval, suc h as: shielding, minimum signaling amplitude, buffered modulation/data inputs, or power sup ply regulation. The alternative method could in clude that the limited module manufacturer rev iews detailed test data or host designs prior to giving the host manufacturer approval. This limited module procedure is also applicable for RF exposure evaluation when it is necessary to demonstrate compliance in a specific host. The module manufacturer must state how control of the product into which the modular transmitter will be installed will be ma intained such that full compliance of the produ ct is always ensured. For additional hosts othe r than the specific host originally granted with a limited module, a Class II permissive change is required on the module grant to regi ster the additional host as a specific host also approved with the module.	**No**		

Trace antenna designs For a modular transmitter with trace antenna designs, see the guidance in Question 11 of KDB Publication 996369 D02 FAQ – Modules for Micro-Strip Antennas and traces. The integration information shall include for the TCB review the integration instructions for the following aspects: layout of trace design, parts list (BOM), antenna, connectors, and isolation requirements.4 • Information that includes permitted variances (e.g., trace boundary limits, thickness, length, width, shape(s), dielectric constant, and impedance as applicable for each type of antenna); • Each design shall be considered a different type (e.g., antenna length in multiple(s) of frequency, the wavelength, and antenna shape (traces in phase) can affect antenna gain and must be considered); • The parameters shall be provided in a manner permitting host manufacturers to design the printed circuit (PC) board layout; • Appropriate parts by manufacturer and specifications; • Test procedures for design verification; and • Production test procedures for ensuring compliance. The module grantee shall provide a notice that any deviation(s) from the defined parameters of the antenna trace, as described by the instructions, require that the host product manufacturer must notify the module grantee that they wish to change the antenna trace design. In this case, a Class II permissive change application is required to be filed by the grantee, or the host manufacturer can take responsibility through the change in FCC ID (new application) procedure followed by a Class II permissive change application.	**No**		

RF exposure considerations It is essential for module grantees to clearly and explicitly state the RF exposure conditions that permit a host product manufacturer to use the module. Two types of instructions are required for RF exposure information: (1) to the host product manufacturer, to define the application conditions (mobile, portable – xx cm from a person's body); and (2) additional text needed for the host product manufacturer to provide to end users in their end-product manuals. If RF exposure statements and use conditions are not provided, then the host product manufacturer is required to take responsibility of the module through a change in FCC ID (new application).	**YES**		Refer to instruction The modular can be installed or integrated in mobile or fix devices only. This modular cannot be installed in any portable device. This modular complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located oroperating in conjunction with any other antenna or transmitter. This modular must be installed and operated with a minimum distance of 20 cm betweenthe radiator and user body.

Antennas A list of antennas included in the application f or certification must be provided in the instruct ions. For modular transmitters approved as li mited modules, all applicable professional inst aller instructions must be included as part of t he information to the host product manufactur er. The antenna list shall also identify the ante nna types (monopole,PIFA, dipole, etc. (note t hat for example an “omni-directional antenna” is not considered to be a specific “antenna typ e”)). For situations where the host product manufacturer is responsible for an external co nnector, for example with an RF pin and anten na trace design, the integration instructions sh all inform the installer that unique antenna con nector must be used on the Part 15 authorized transmitters used in the host product. The mo dule manufacturers shall provide a list of acce ptable unique connectors.	**YES**		Refer to instruction The module is limited to the following antenn a: Antenna Type: External Antenna Antenna G ain: 3.5dBi

Label and compliance information Grantees are responsible for the continued compliance of their modules to the FCC rules. This includes advising host product manufacturers that they need to provide a physical or e-label stating “Contains FCC ID” with their finished product. See Guidelines for Labeling and User Information for RF Devices – KDB Publication 784748.	**YES**		Refer to instruction If the FCC identification number is not visible when the module is installed inside another device, then the outside ofthe device into which the module is installed must also display a label referring to the enclosed module. Thisexterior label can use wording such as the following: “Contains Transmitter Module FCC ID: 2AHUTZBM Or Contains FCC ID: 2AHUTZBM ”

2.9 Information on test modes and additional testing requirements5 Additional guidance for testing host products is given in KDB Publication 996369 D04 Module Integration Guide. Test modes should take into consideration different operational conditions for a stand-alone modular transmitter in a host, as well as for multiple simultaneously transmitting modules or other transmitters in a host product. The grantee should provide information on how to configure test modes for host product evaluation for different operational conditions for a stand-alone modular transmitter in a host, versus with multiple, simultaneously transmitting modules or other transmitters in a host. Grantees can increase the utility of their modular transmitters by providing special means, modes, or instructions that simulates or characterizes a connection by enabling a transmitter. This can greatly simplify a host manufacturer's determination that a module as installed in a host complies with FCC requirements.	**YES**		Refer to instruction Any company of the host device which install this modular with limit modular approval should perform the test ofradiated & conducted emission and spurious emission,etc. according to FCC part 15C: 15.249 and 15.209 &15.207, 15B Class B requirement, Only if the test result comply with FCC part 15C: 15.249 and 15.209 &15.207, 15B Class B requirement then the host can be sold legally. The module is installed in the host and can be transmitted independently.

Additional testing, Part 15 Subpart B disclaimer The grantee should include a statement that t he modular transmitter is **only** FCC authorize d for the specific rule parts (i.e., FCC transmitt er rules) listed on the grant, and that the host product manufacturer is responsible for compli ance to any other FCC rules that apply to the host not covered by the modular transmitter gr ant of certification. If the grantee markets their product as being Part 15 Subpart B compliant (when it also contains unintentional-radiator di gital circuity), then the grantee shall provide a notice stating that the final host product still re quires Part 15 Subpart B compliance testing w ith the modular transmitter installed.6	**yes**		Refer to instruction The module without unin tentional-radiator digital circuity, so the modu le does not Require an evaluation by FCC P art 15 Subpart B. The host should be evaluat ed by the FCC Subpart B.

Documents / Resources

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