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Installation

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DATE:

REVISIONS

REMARKS:



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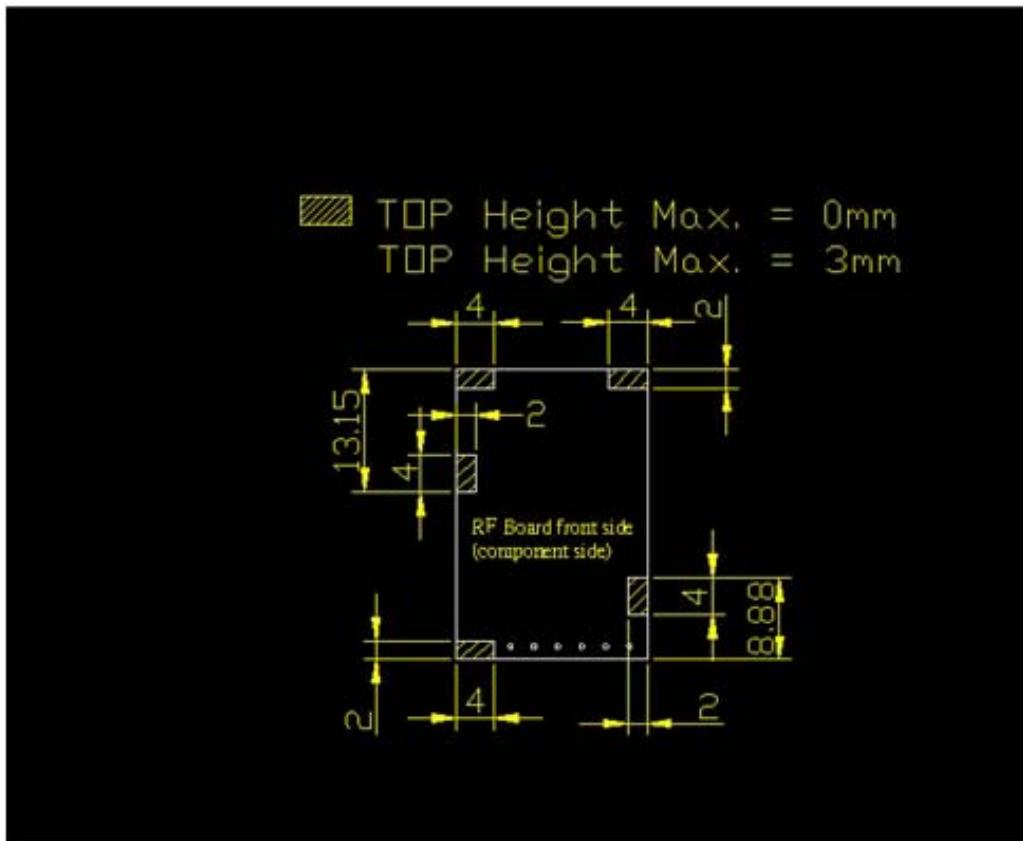
1 Introduction

This document describes the installation of the module into the box. This document describes how Sezmi will control installation/ manufacturing and labeling of the product. It will also show were the FCC statements will be added to the final Manual.

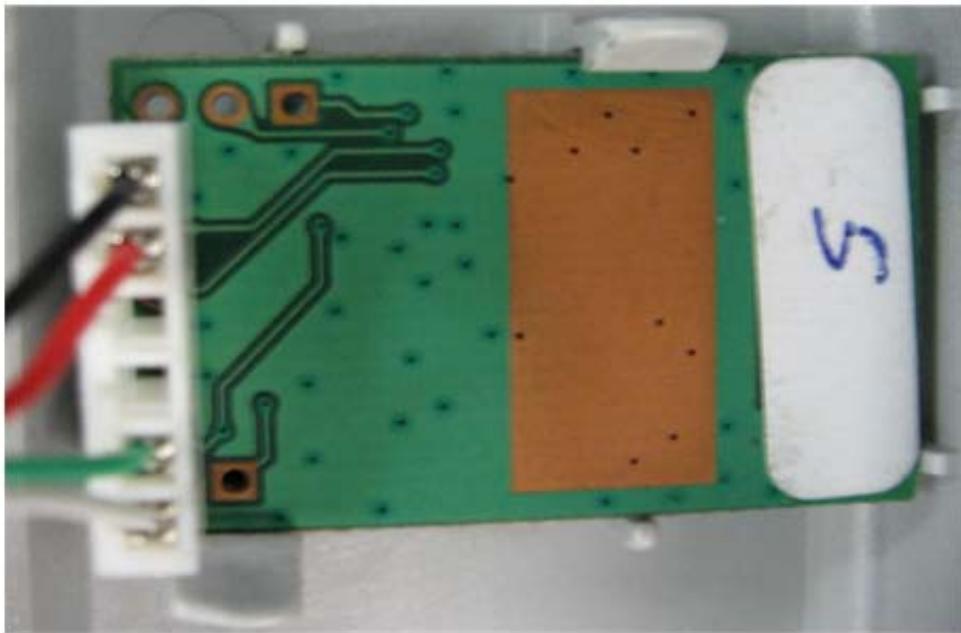
2 Installation

The installation of the product is unique because the mounting mechanism is designed specifically for the product. The mounting fixture has specific area in the PCB that is left empty for the clamps. Also the clamp has an unique form factor. This implies that the board cannot be installed in other modules were it was never intended because of the unique mounting mechanism.

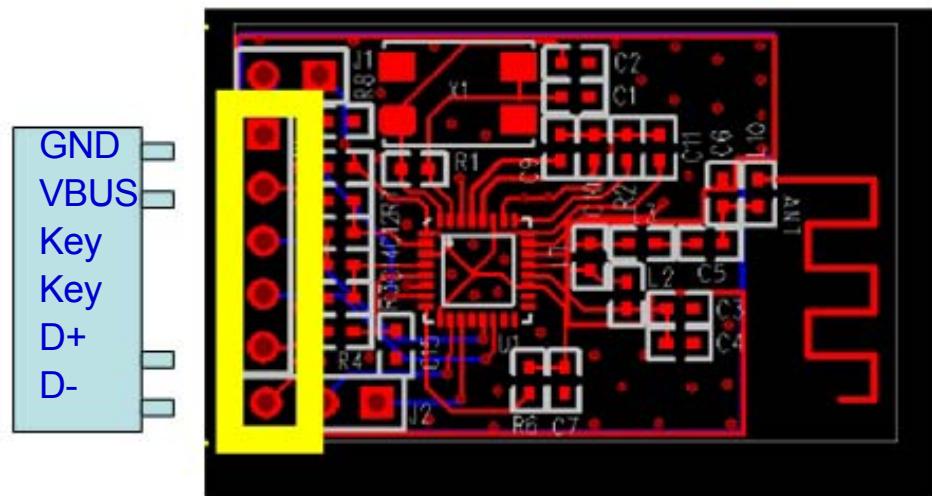
The following are the areas were the clamps can be latched on the PCB:



The following is the mounting mechanism:



Also the cable has a unique connector that can only be installed on this product. Its uniqueness comes from the number of pins and location of the pins.





Notice that if the connector is installed backwards it will not be able to install. Also, the connector must be offset properly other wise the unit would be damaged.

3 Requirements for Limited Modular Approval

In order to meet the DA 00-1407, the following will steps will be taken to answer all 8 requirements:

1. The modular transmitter must have its own RF shielding. This is intended to ensure that the module does not have to rely upon the shielding provided by the device into which it is installed in order for all modular transmitter emissions to comply with Part 15 limits. It is also intended to prevent coupling between the RF circuitry of the module and any wires or circuits in the device into which the module is installed. Such coupling may result in non-compliant operation.

The unit has no shielding. This is the exception to the rules for Modular Approval. It is to be mounted inside metal box products only. It will be installed under Sezmi controlled conditions. See installation manual. Given that the unit will be used only in Sezmi products under Sezmi directives. Hence Sezmi will have total control over which units the module will be installed.

2. The modular transmitter must have buffered modulation/data inputs (if such inputs are provided) to ensure that the module will comply with Part 15 requirements under conditions of excessive data rates or over-modulation.

The unit will have its own data rate for the module. It will always operate at a 2Mbits per second. This is the only speed accepted. The final data rate is generated by logical hardware inside of the RFIC. So trying to change the data rate is not possible.

3. The modular transmitter must have its own power supply regulation. This is intended to ensure that the module will comply with Part 15 requirements regardless of the design of the power supplying circuitry in the device into which the module is installed.

Our device has its own internal regulator; the input to the regulator is filter to improve any spikes that are input. Given that the unit will be used only in Sezmi products under Sezmi directives. Hence Sezmi will have total control over which units the module will be installed.

4. The modular transmitter must comply with the antenna requirements of Section 15.203 and 15.204(c). The antenna must either be permanently attached or employ a “unique” antenna coupler (at all connections between the module and the antenna, including the cable). Any antenna used with the module must be approved with the module, either at the time of initial authorization or through a Class II permissive change. The “professional installation” provision of Section 15.203 may not be applied to modules.

The Customer does not have access to the Antenna. This antenna is a printed antenna and does not have a connector. SMK has total control of the fabrication of the PCB, hence no external antenna will be added to the module. Also, the module will not be accessible by the customer inside of the box.



5. The modular transmitter must be tested in a stand-alone configuration, i.e., the module must not be inside another device during testing. This is intended to demonstrate that the module is capable of complying with Part 15 emission limits regardless of the device into which it is eventually installed. Unless the transmitter module will be battery powered, it must comply with the AC line conducted requirements found in Section 15.207. AC or DC power lines and data input/output lines connected to the module must not contain ferrites, unless they will be marketed with the module (see Section 15.27(a)). The length of these lines shall be length typical of actual use or, if that length is unknown, at least 10 centimeters to insure that there is no coupling between the case of the module and supporting equipment. Any accessories, peripherals, or support equipment connected to the module during testing shall be unmodified or commercially available (see Section 15.31 (i)).

This module has been tested in a stand alone configuration. It has a cable that is more than 10 cm long. This device operates with DC Voltage only. Hence it was tested with DC Voltage. If AC voltage is applied it will not work. If the voltage is too high it will be damaged. SMK will test 100% of all models shipped to the customer. If module does not meet requirements it will not be installed inside of a STB.

6. The modular transmitter must be labeled with its own FCC ID number, and, if the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID: XYZMODEL1" or "Contains FCC ID: XYZMODEL1." Any similar wording that expresses the same meaning may be used. The Grantee may either provide such a label, an example of which must be included in the application for equipment authorization, or, must provide adequate instructions along with the module which explain this requirement. In the latter case, a copy of these instructions must be included in the application for equipment authorization.

Sezmi will label the outside of the product with " Contains V4SU2RV"

We plan to provide the vendor of the set up box with the FCC ID. Sezmi reviews the status of the certification on a minimum of once a week. In this reviews the FCC ID has been discussed.

7. The modular transmitter must comply with any specific rule or operating requirements applicable to the transmitter and the manufacturer must provide adequate instructions along with the module to explain any such requirements. A copy of these instructions must be included in the application for equipment authorization. For example, there are very strict operational and timing requirements that must be met before a transmitter is authorized for operation under Section 15.231. For instance, data transmission is prohibited, except for operation under Section 15.231(e), in which case there are separate field strength level and timing requirements. Compliance with these requirements must be assured.

The interface to the module will be done via a USB interface. The cable will be insulated. Once the data is in the module, the timing inside the module is done via internal logic inside of the IC. Hence the IC itself controls the transmission of the signal. This is done with the help of logic circuits.



8. The modular transmitter must comply with any applicable RF exposure requirements. For example, FCC Rules in Sections 2.1091, 2.1093 and specific Sections of Part 15, including 15.319(i), 15.407(f), 15.253(f) and 15.255(g), require that Unlicensed PCS, UNII and millimeter wave devices perform routine environmental evaluation for RF Exposure to demonstrate compliance. In addition, spread spectrum transmitters operating under Section 15.247 are required to address RF Exposure compliance in accordance with Section 15.247 (b)(4). Modular transmitters approved under other Sections of Part 15, when necessary, may also need to address certain RF Exposure concerns, typically by providing specific installation and operating instructions for users, installers and other interested parties to ensure compliance.

It will be installed under controlled conditions. See installation manual Section 4.3 below which requires testing of the installed module in the final product to FCC Rules.

4 FCC Requirements

This section lists requirements to be followed by the STB manufacturer in order to install the unit.

4.1 FCC Label

There must be a FCC label on the set up box (STB). This label will have the following: "Contains FCC ID: V4SU2RV". This label should be easy readable by the user.

4.2 FCC Statements

The manual for the STB will have the following statements as part of the manual:

INFORMATION TO USER

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

Reorient or relocate the receiving antenna

Increase the separation between the equipment and receiver

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected

Consult the dealer or an experienced radio/TV technician for help

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

For digital circuitry other than the radio.

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

4.3 Conducted & Emission Testing

The STB will be tested for conducted and radiated emissions to meet 15.107, 15.109. The STB will pass the 15.107, 15.109 with the module installed.

4.4 Voltage & Current to Module

The Power supply voltage and current to the module will be properly regulated and filtered. This module will only be used for Sezmi STB products and under Sezmi directives.