Class II Permissive Change Request Letter

June 28, 2011

To:
Federal Communications Commission
Authorization and Evaluation Division
7435 Oakland Mills Road Columbia,
MD 21046

Attn: OET Dept.

RE: FCC PCII Certification Request for Radio Module 5GHz (FCC ID: TTM-105P25N

We are submitting an application for a class II permissive change to the limited modular approval of the Radio Module 5GHz (FCC ID: TTM-105P25N, Original Grant Date: 07/31/2009.

There is no hardware or electrical modification made to the applying transmitter itself. The change filed under this application includes the following changes:

(1) Four Analog filters were added in Rx and TX baseband section
(2) To enable operation in a wider 64MHz channel
(3) To enable operation up to 256 QAM

We hereby certify that no party to this application is subject to a denial of benefits, including FCC benefits, pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C.853 (a).

Please contact me if you have any questions or need further information regarding this application

Sincerely,

Signature: Holger Steinbach

Name: Holger Steinbach
Title: Director, Engineering Programs and Services
Phone: 408-688-0818

HARDWARE CHANGE DESCRIPTION

Radio Module 5GHz, FCC-ID TTM-105P25N

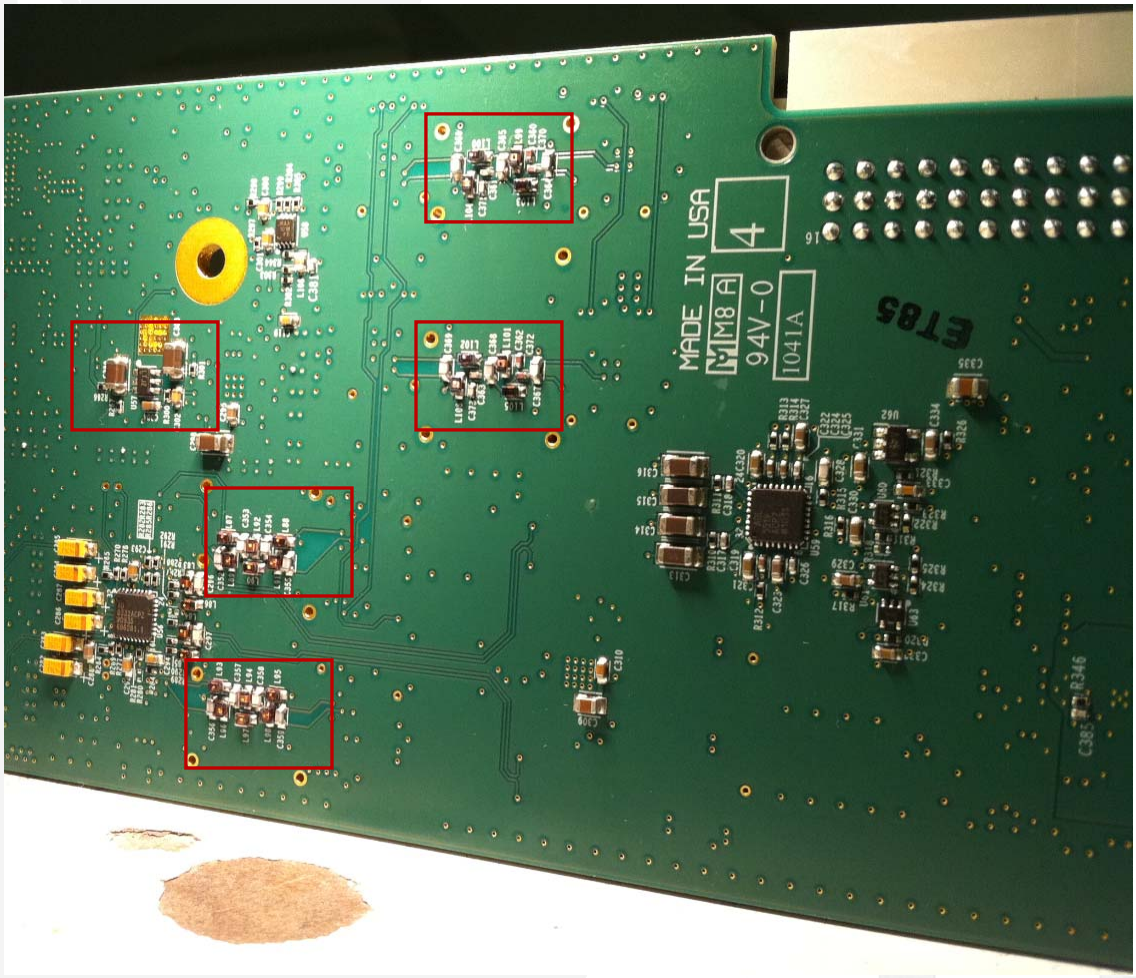
6-28-2011

Purpose of change

For the original Limited Modular Approval the ExtendAir 5GHz RF Module operated in 8, 16, and 32 MHz channel bandwidth. Analog transmit and receive filtering at baseband is required for each channel bandwidth. To enable operation in a wider 64 MHz channel another set of analog transmit and receive filter was added.

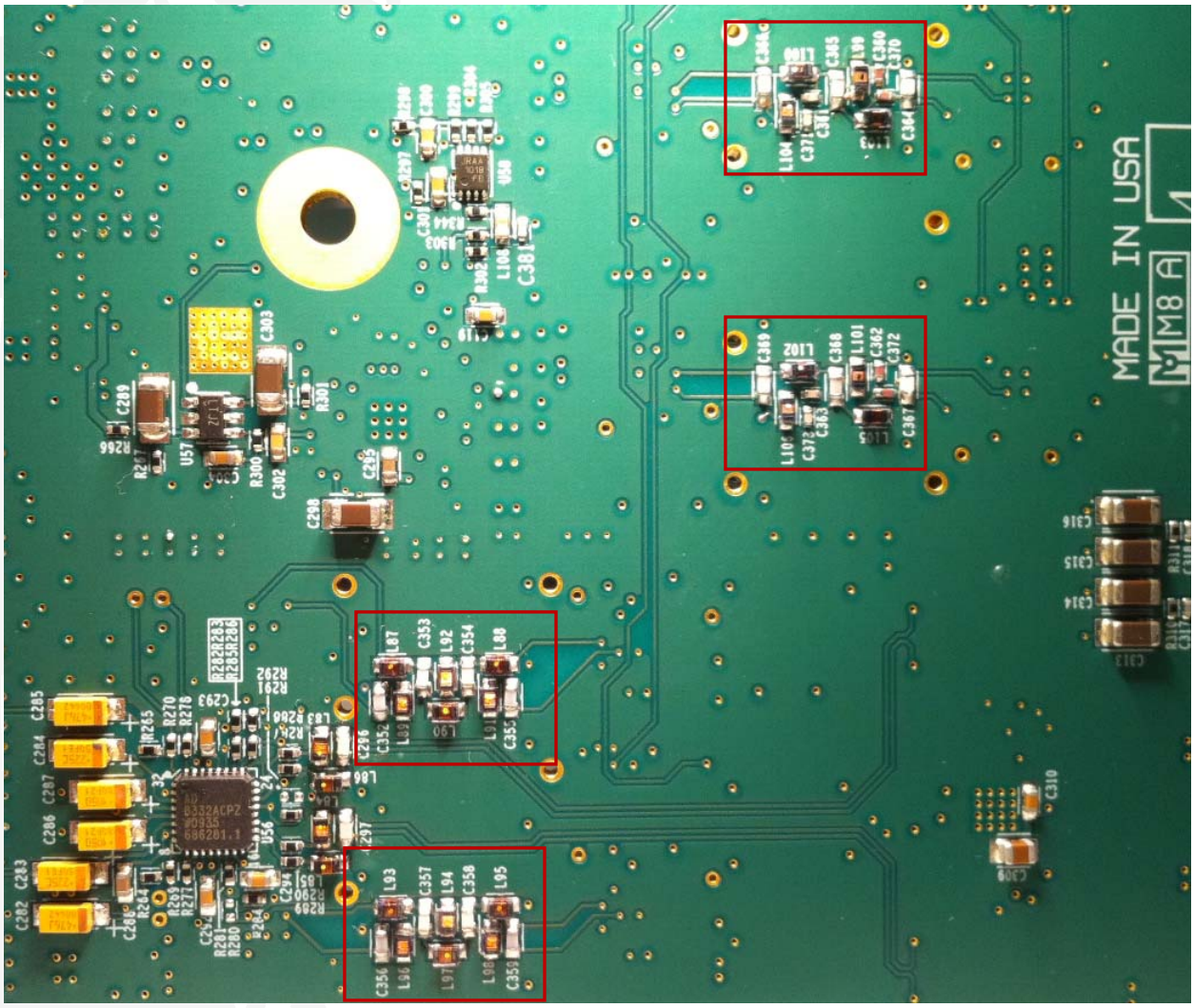
Description of change

Four analog filters consisting of discrete inductors and capacitors were added in the RX and TX baseband sections parallel to the existing sets of filters. Since the space on the top side of the board was constraint the actual parts were added to the bottom of the board. See provided schematic as well as Pictures 1 and 2 below.



Picture 1: Bottom side of RADIO MODULE 5GHz PCB.

Exalt Communications Inc.
580 Division Street
Campbell, CA 95008



Picture 2: Detail from Bottom Side of RADIO MODULE 5GHz PCB showing added baseband filters

Also to optimize noise performance a few inner traces got rerouted causing some component locations on the back side of the board to change slightly (see Picture 3 below).

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580 Division Street
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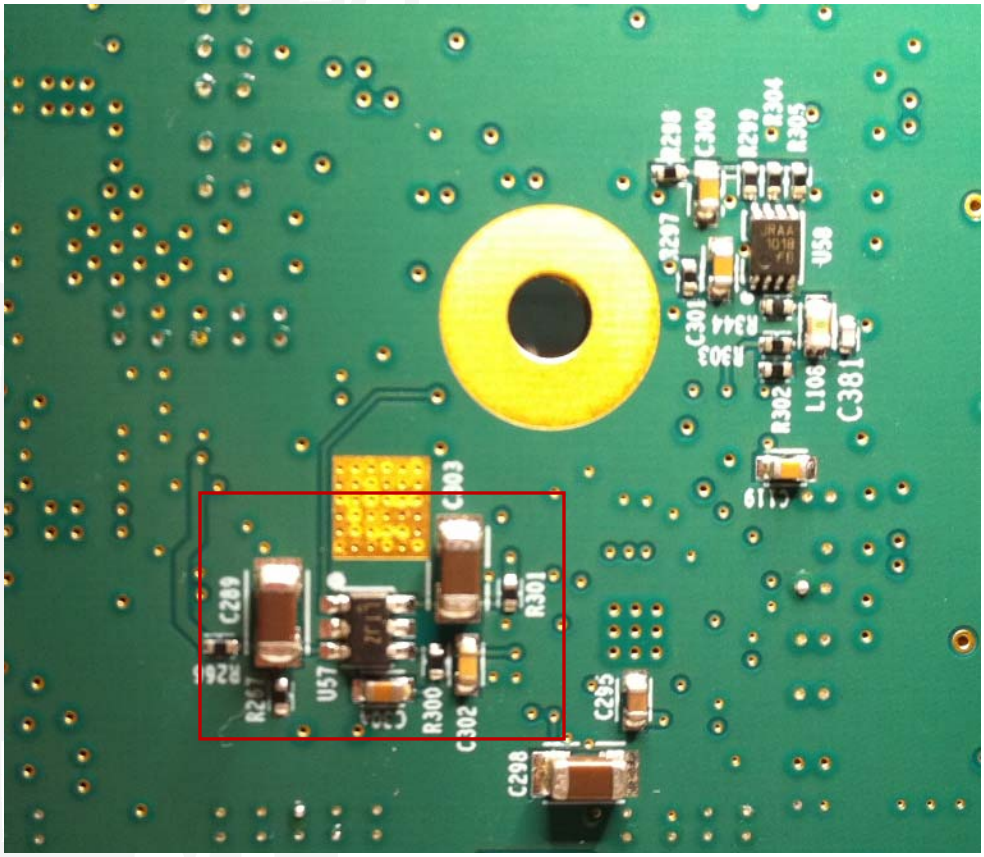

Picture 3 Detail from Bottom Side of 5GHz RF PCB showing components moved to optimize noise performance.

Date& Place of Issue: June, 28th 2011, Campbell, CA

Signature: Holger Steinbach

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SOFTWARE CHANGE DESCRIPTION

Radio Module 5GHz, FCC-ID TTM-105P25N

6-28-2011

Purpose of change

Enable a higher throughput capacity as well as to increase spectrum efficiency in support of ExploreAir products featuring Gigabit Ethernet data interfaces.

Description of change

In the user interfaces software (Web, SNMP, CLI) provided with products carrying the RADIO MODULE 5GHZ the following changes were made:

1. Change to Channel Bandwidth selection
Besides the already available selection options for 8MHz, 16MHz, and 32MHz, a 64MHz selection option was added. To assure that the radio module operates in the authorized band the new limits the upper and lower center frequency selection at 64MHz bandwidth to 5814 MHz (upper) and 5761 MHz (lower).

2. Changes to selectable Modulations
After this software change the following modulations are selectable in all the user interfaces: QPSK, 16QAM, 32QAM, 64QAM, 128QAM, and 256QAM. Formerly the highest supported modulation was 64QAM.

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PREVENTION OF UNAUTHORIZED USAGE

Radio Module 5GHz, FCC-ID TTM-105P25N

6-28-2011

Purpose of this document

Description of methods used to eliminate unauthorized use of product using RADIO MODULE 5GHZ. "Unauthorized" in this context refers to radio operation not authorized by the FCC.

Prevention of Unauthorized Usage

Generally, the RADIO MODULE 5GHZ is only used in fixed point-to-point products from Exalt Communications. It is not sold to any 3rd party system integrator.
Exalt does not offer an API that would allow any 3rd party to modify the SW load of a radio. The only way a third party can affect radio configuration is by means of one of the user interfaces provided by Exalt software. The SW is designed to assure operation within the authorized regulatory limits.
From time to time Exalt provides SW updates to enable new value added features or to fix reported bugs. Such features usually do not impact radio performance. Aside from highly fraudulent hacking, there is no known way for any third party to change a SW load running on an Exalt radio. The only exception is the loading of a complete new SW load, tested and officially issued by Exalt in binary form.

Exalt software uses a proprietary over-the-air protocol which is inherently much safer than standard protocols such as WIFI. The basic protocol uses a coding scheme that assures that a point-to-point radio only communicates with its peer radio. Additionally, Exalt SW offers enhanced radio communication protection based on AES128 or AES256 encryption technology.

Exalt point-to-point radio product that are based on RADIO MODULE 5GHZ require professional installation. For products shipping with antenna connector instead of an integrated antenna, the professional installer is supposed to correctly configure conducted power levels within authorized limits. Exalt provides all necessary information a professional installer may need in user manuals shipping with Exalt radio products.

Formerly, Exalt radio products based on RADIO MODULE 5GHZ allowed professional installers to select a Regulatory Domain Key (RDK) to lock in the authorized limits of radio operation for a particular regulatory domain, e.g. US/FCC. This option will be removed for all products based on RADIO MODULE 5GHZ shipped to US customers to eliminate the potentially unauthorized usage by configuration of another RDK that was intended to be used in a different regulatory domain.

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