



Testing Tomorrow's Technology

June 4, 2018

**Subject: FCC 15.247, RSS-247, and RSS-Gen Class 2 PERMISSIVE CHANGE for Murata Electronics North America, Model WIT 2450, FCC ID: HSW-2450 and IC: 4492A-2450**

The purpose of this report is to file for a Class II permissive change for the following reasons:

- Previous driver amplifier with gain control (DA\_AGC) has been substituted to a separate amplifier and an analog attenuator to achieve gain control.
- Component changes and reorganization. A list of component changes follows:

Component was	Component is	reason for change
Gain control driver amplifier UPC8204TK	Driver amp BGB741L7ESD Analog Attenuator MAAVSS0001	UPC8204TK went obsolete, no other gain control amplifier is available at this frequency at this power level, so a driver amplifier combined with an analog attenuator yields the same functional performance
Bias/matching components for UPC8204: C34,C202,C217, L305,L309 R202,R31,Q3, C37=6.8pF R30,	Bias/matching components for BGB741L7ESD: C222,C223,C224,C225,L28,L29,R411,R413 Bias/matching for MAAVSS0001: C219,C220,C221, C37=0ohm	Components for UPC8204 removed with UPC8204 Components for BGB741 and MAAVSS0001 added with those components. C37 is now stuffed as a resistor.
R48=0ohm, R50=51=0ohm	R48=2.2nH, R50=51=.5pF	For matching to new driver amp
L304=22nH	L304=10nH	Better power from power amplifier
C212=C213=1pF	C212=C213=.5pF	Better filtering of high frequencies
C39=.5pF,C106=10pF	C39=1pF,C106=0ohm	Matching to MAAVSS0001

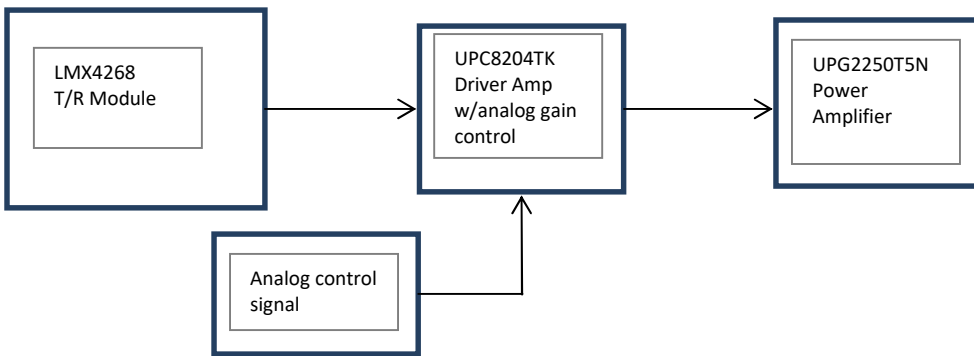
**3505 Francis Circle, Alpharetta, GA 30004**

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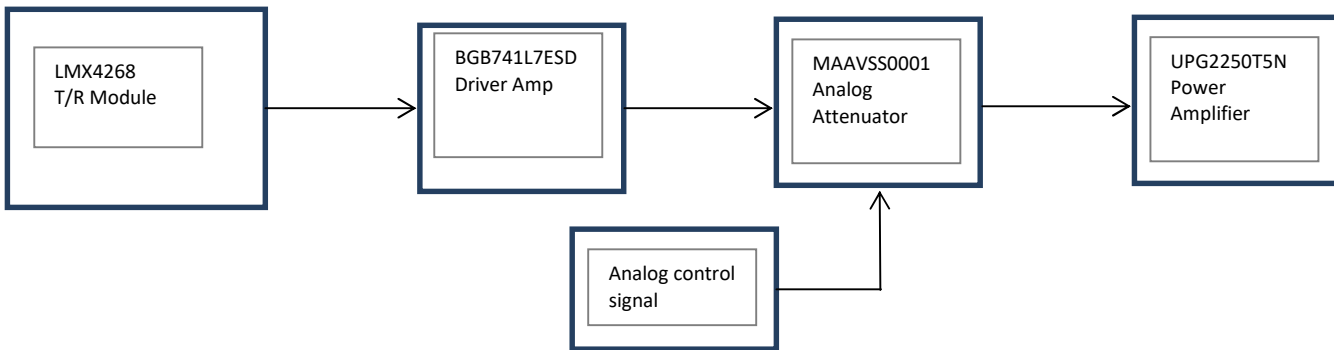
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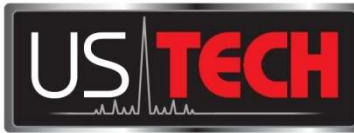
Figure 1 is a block diagram of the original architecture. Figure 2 shows the architecture proposed for this Class 2 Permissive Change.



**Figure 1. Original Architecture**



**Figure 2. Proposed Architecture**



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- R403 was moved .02" closer to U102, allowing C208 to be moved .02" closer to board ground, instead of a via hole to ground
- Shielding completely soldered along the seams to improve radiated performance.

The number of antennas used has also been reduced to include only the following:

- Dipole 9 dBi
- Corner Reflector 9 dBi
- Patch 6 dBi

The basic functionality and intended usage remains the same as per the original filing for this product. Additionally, all antennas used are the same type/lesser gain than the originally listed antennas.

The test report shows that the product continues to meet the applicable subpart for CFR 47, Part 15.207, 15.209, 15.247 and RSS 247.

See the test report and additional submittal exhibits for details.

Best Regards,

A handwritten signature in black ink that reads 'Sandi McEnery'.

Sandi McEnery

Agent for Murata Electronics North America

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