



OMAP-L138 SOM-M1 Radiated Emissions Scan: 30 MHz – 1 GHz White Paper 466

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Revision History

REV	EDITOR	DESCRIPTION	APPROVAL	DATE
A	JCA, NJK	Initial Release	JCA	02/18/11

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1 OMAP-L138 SOM-M1 Radiated Emissions Scans: 30 MHz – 1 GHz

The OMAP-L138 SOM-M1 was scanned at Northwest EMC in Brooklyn Park, MN.

2 Test Results

Two configurations of the OMAP-L138 SOM-M1 (SOMOMAPL138-1602AHCR and SOMOMAPL138-1602QHIR) were scanned for unintentional radiated emissions. This testing was completed to provide a baseline scan of the OMAP-L138 SOM-M1 for customers.

The OMAP-L138 SOM-M1 was connected to a standard eXperimenter baseboard. The only connection to the baseboard was the power supply.

The unit under test used software that looped through the following interfaces: SPI flash, PMIC, touch, RAM, and ID chip.

Table 2.1 lists the known frequencies generated on the OMAP-L138 SOM-M1 with the functional test code running.

Table 2.1: Frequencies Generated while Running Functional Test Code

Source	Frequency
PLL0_SYSCLK1	300 MHz
PLL0_SYSCLK2	150 MHz
PLL0_SYSCLK3	25 MHz
PLL0_SYSCLK4	75 MHz
PLL0_SYSCLK6	300 MHz
PLL0_SYSCLK7	50 MHz
PLL1_SYSCLK1	300 MHz
PLL1_SYSCLK2	150 MHz
PLL1_SYSCLK3	100 MHz
System oscillator	24 MHz
SATA	25 MHz, 125 MHz-differential

NOTE: Since testing of the power supply is not intended for these results, a ferrite was added to the power supply cable to dissipate noise around 40 MHz.

2.1 OMAP-L138 SOM-M1 with SATA

Figure 2.1 shows a baseline scan of a fully configured OMAP-L138 SOM-M1 (SOMOMAPL138-1602AHCR). The software was looping through the peripherals as indicated above. This configuration passes Class B.

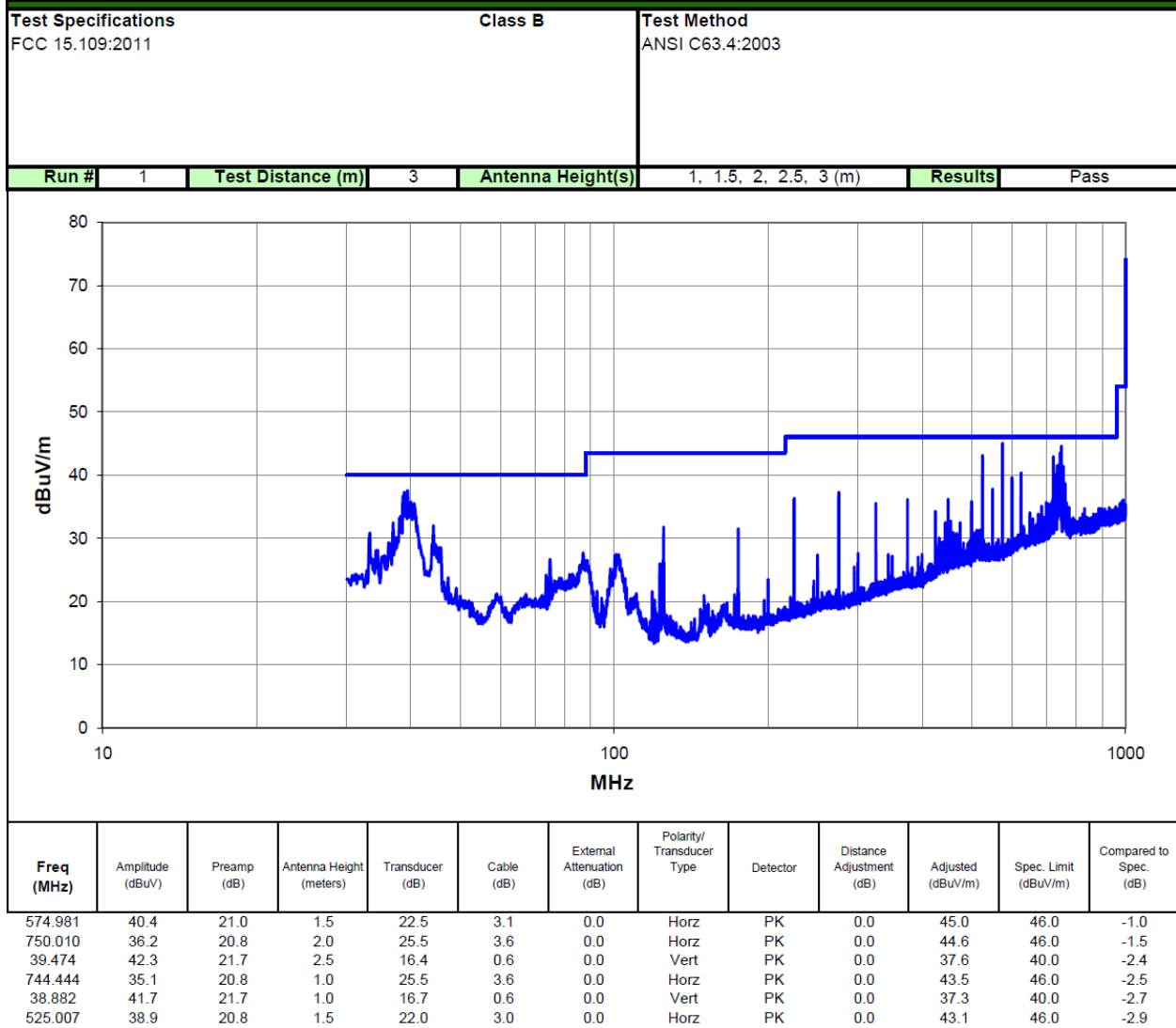


Figure 2.1: OMAP-L138 SOM-M1 with SATA (SOMOMAPL138-1602AHCR)

2.2 OMAP-L138 SOM-M1 without SATA

Figure 2.2 shows a baseline scan of an OMAP-L138 SOM-M1 with the SATA circuitry depopulated (SOMOMAPL138-1602QHIR). The software was looping through the peripherals as indicated above. This configuration also passes Class B.

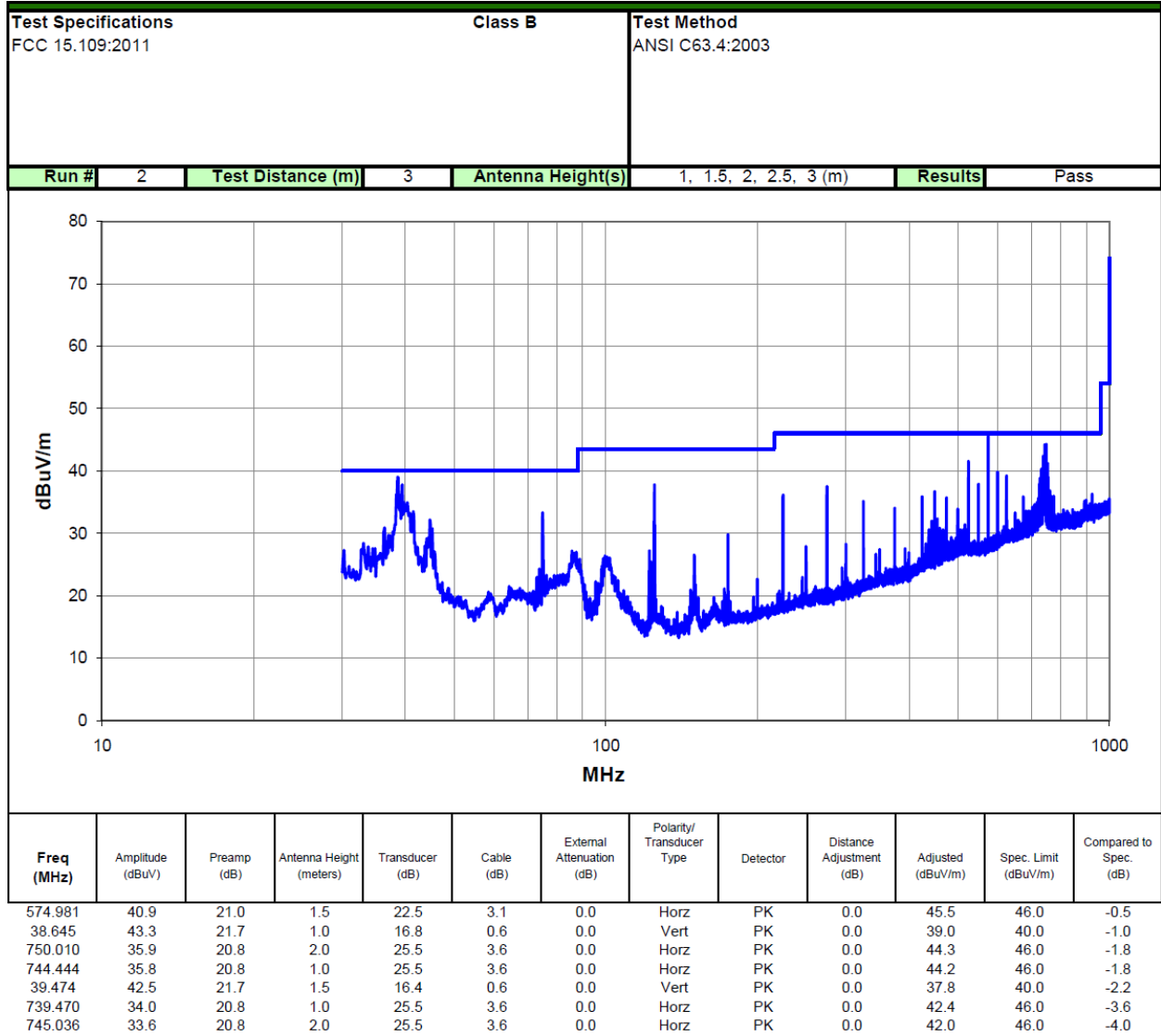


Figure 2.2: OMAP-L138 SOM-M1 without SATA (SOMOMAPL138-1602QHIR)

3 Summary

These radiated emissions scan provide a baseline for the performance of the OMAP-L138 SOM-M1 alone. Radiated emissions testing of a final product designed around the OMAP-L138 SOM-M1 is the responsibility of the developer.