

# EMC Test Report

**Project Number:** 3843586

**Report Number:** 3843586EMC02

**Revision Level:** 0

**Client:** Continental Automotive Systems, Inc.

**Equipment Under Test:** Wireless Modem Module

**Model:** CASAN-V


**FCC Rule Parts:** Part 2, Part 22(H), Part 24(E)

**Industry Canada:** RSS-132, Issue 3: 2013, RSS-133 Issue 6: 2013,  
**Conducted Spurious Emissions Only**

**Report issued on:** 11 September 2015

**Test Result:** Compliant

Tested by:

  
\_\_\_\_\_  
Jeremy O. Pickens, Senior EMC Engineer

Reviewed by:

  
\_\_\_\_\_  
David Schramm, EMC/RF/SAR/HAC Manager

**Remarks:**

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or Testing done by SGS International Electrical Approvals in connection with distribution or use of the product described in this report must be approved by SGS international Electrical Approvals in writing.

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## 1 Summary of Test Results

Reference Sections	Test Description	Test Limit	Test Result
2.1051 22.917(a) 24.238(a)	Band Edge / Conducted Spurious Emissions	$< 43 + 10\log_{10} (P_{[Watts]})$ at band edge and for all out of band emissions	Pass

### 1.1 Modifications Required to Compliance

None

## 2 General Information

### 2.1 Client Information

Name: Continental Automotive System, Inc..  
Address: 21440 West Lake Cook Road  
City, State, Zip, Country: Deer Park, IL 60010, USA

### 2.2 Test Laboratory

Name: SGS North America, Inc.  
Address: 620 Old Peachtree Road NW, Suite 100  
City, State, Zip, Country: Suwanee, GA 30024, USA

### 2.3 General Information of EUT

Type of Product: Wireless Modem Module  
Model Number: CASAN  
FCC ID: LHJ-CASAN  
IMEI Number: 358885060017573  
  
Rated Voltage: 10.2 - 13.8 Vdc,  
Test Voltage: 12 Vdc  
Tx Frequency Range: 824.7– 848.31 MHz (CDMA 850)  
1851.25– 1908.75 MHz (CDMA 1900)  
FCC Classification: PCS Licensed Transmitter PCB  
Type: Pre Production

Sample Received Date: 03 September 2015  
Dates of testing: 10-11 September 2015

### 2.4 Operating Modes and Conditions

The EUT was exercised by connecting a CMW communications tester to the device. The CMW was used to control signaling and channel during testing.

### 3 Band Edge and Conducted Spurious Emissions

#### 3.1 Test Result

Test Description	Basic Standards	Test Result
Conducted spurious emissions and Band Edge	2.1051 22.917(a) 24.238(a)	Pass

#### 3.2 Test Method

The levels of the carrier and the various conducted spurious and harmonics frequencies were measured by means of a calibrated spectrum analyzer. The emissions spectrum emanating from the EUT transmit antenna port were scanned from the lowest frequency generated in the equipment up to a frequency including its 10<sup>th</sup> harmonic. On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB. Compliance was based on the use of a spectrum analyzer employing a resolution bandwidth of 1 MHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of a least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emissions bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

#### 3.3 Test Site

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature: 24.5 °C  
Relative Humidity: 47.1 %  
Atmospheric Pressure: 97.5 kPa

#### 3.4 Test Equipment

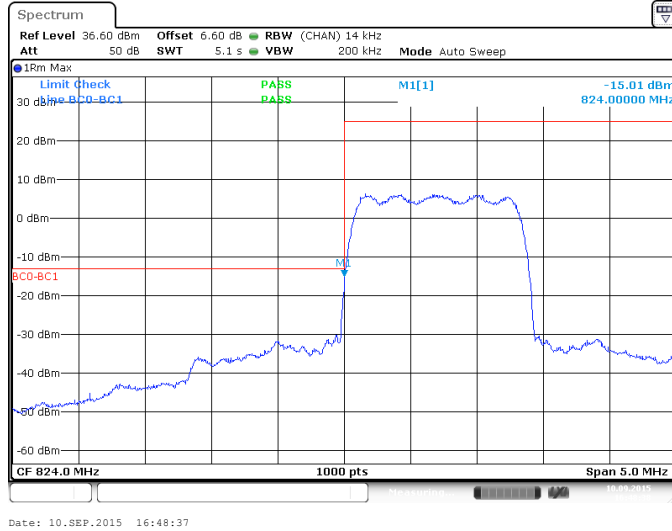
Equipment	Model	Manufacturer	Asset Number	Cal Due Date
SIGNAL ANALYZER	FSV30	ROHDE & SCHWARZ	B085749	27-Sep-2015
CMW500 WIDEBAND RADIO COMMUNICATIONS TESTER	CMW500	ROHDE & SCHWARZ	B094874	6-Dec-2015
POWER SPLITTER	ZFRSC-123-S+	MINI-CIRCUITS	B101739	5-Aug-2016
COAXIAL CABLE	1134	GORE	B094785	4-Aug-2016

- Unless otherwise noted, equipment is on a 1 year calibration cycle.
- Based on manufacturer's specifications, the CMW-500 is on a 3 year calibration cycle.

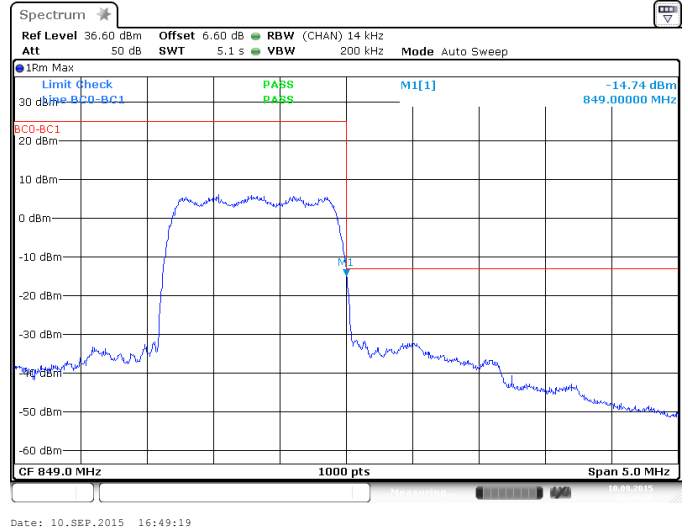
## 3.5 Test Data

### CDMA, BC 0

Lower Band Edge (Channel 1013, 824.7 MHz)

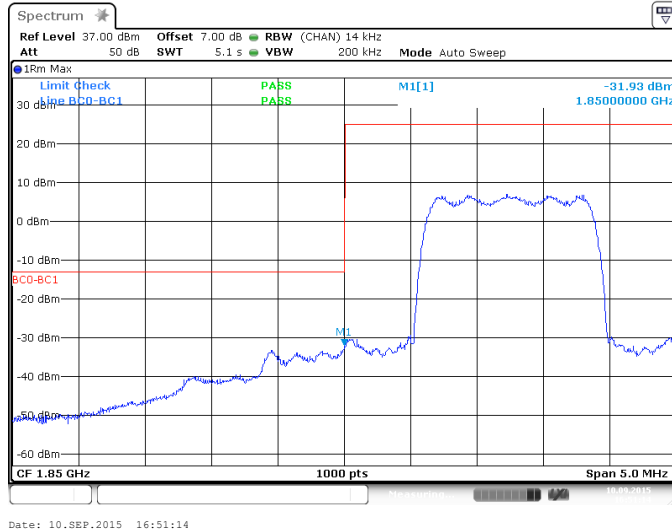


Upper Band Edge (Channel 777, 847.06 MHz)

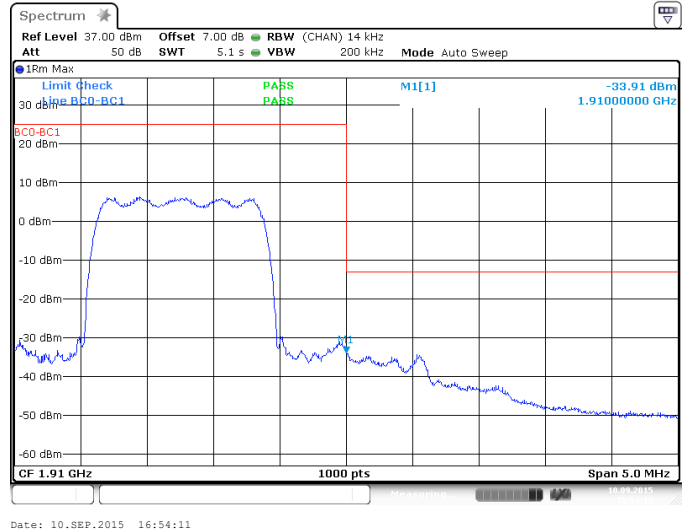


### CDMA, BC 1

Lower Band Edge (Channel 25, 1851.25 MHz)

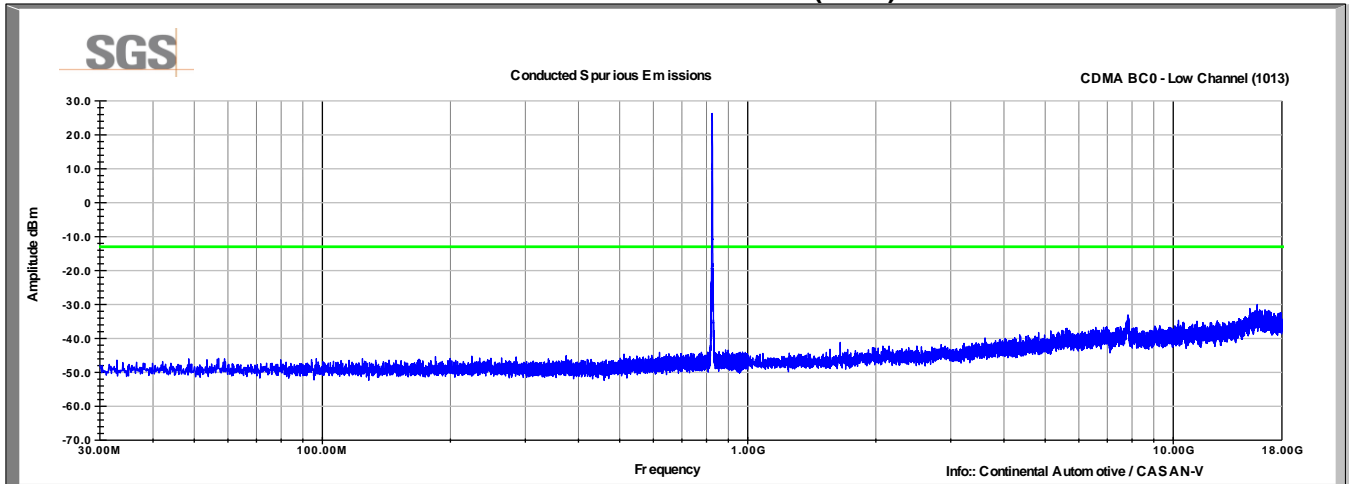


Upper Band Edge (Channel 1175, 1908.75 MHz)

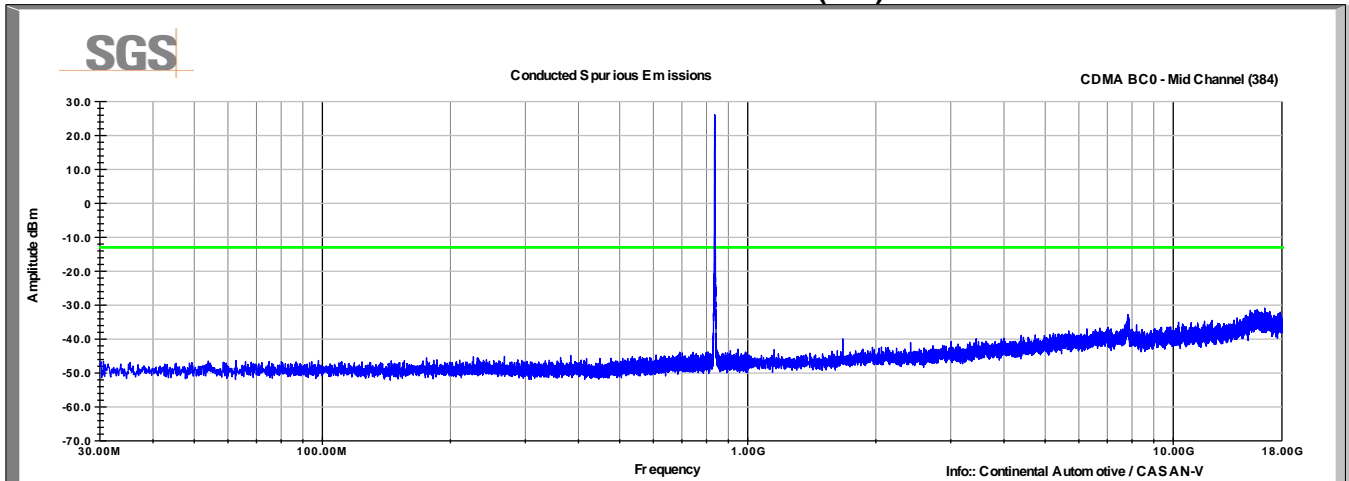


### 3.6 Conducted Spurious Emissions Plot

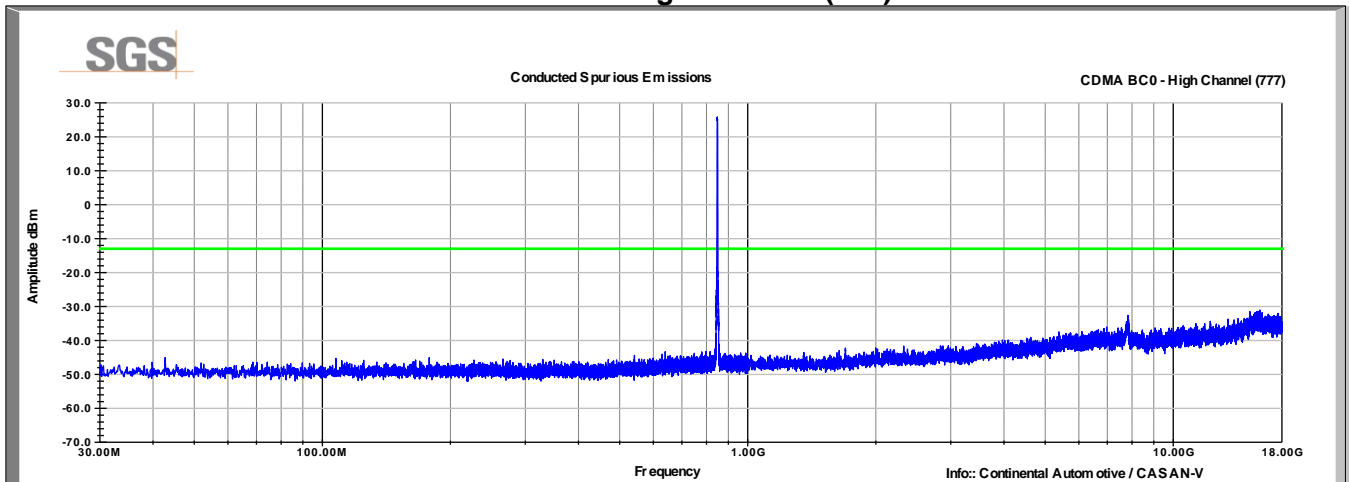
#### CDMA BC0 Low Channel (1013)



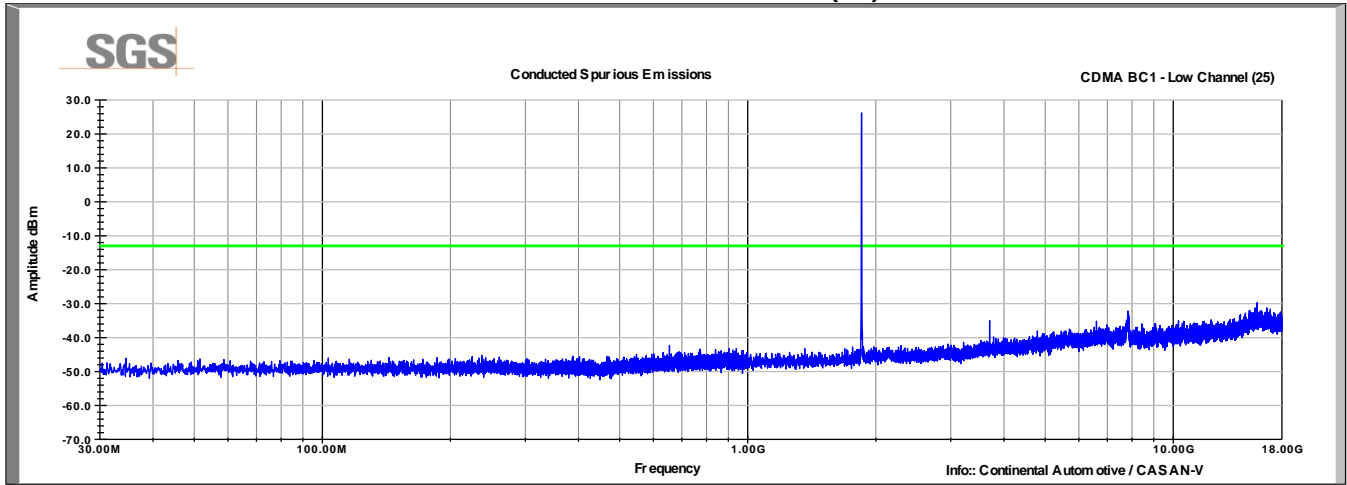
#### CDMA BC0 Mid Channel (384)



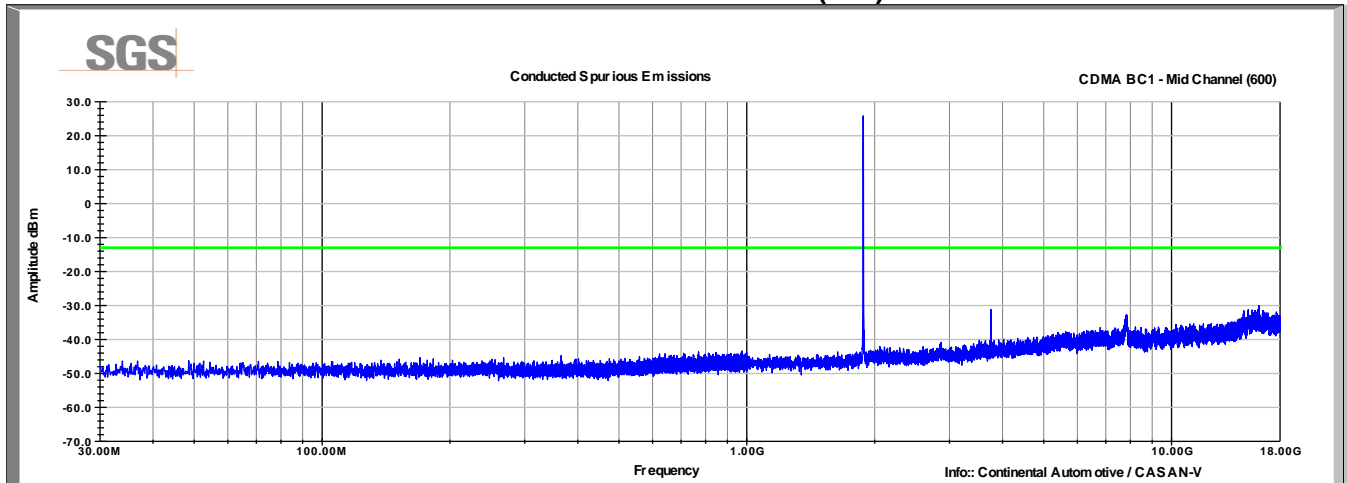
#### CDMA BC0 High Channel (777)



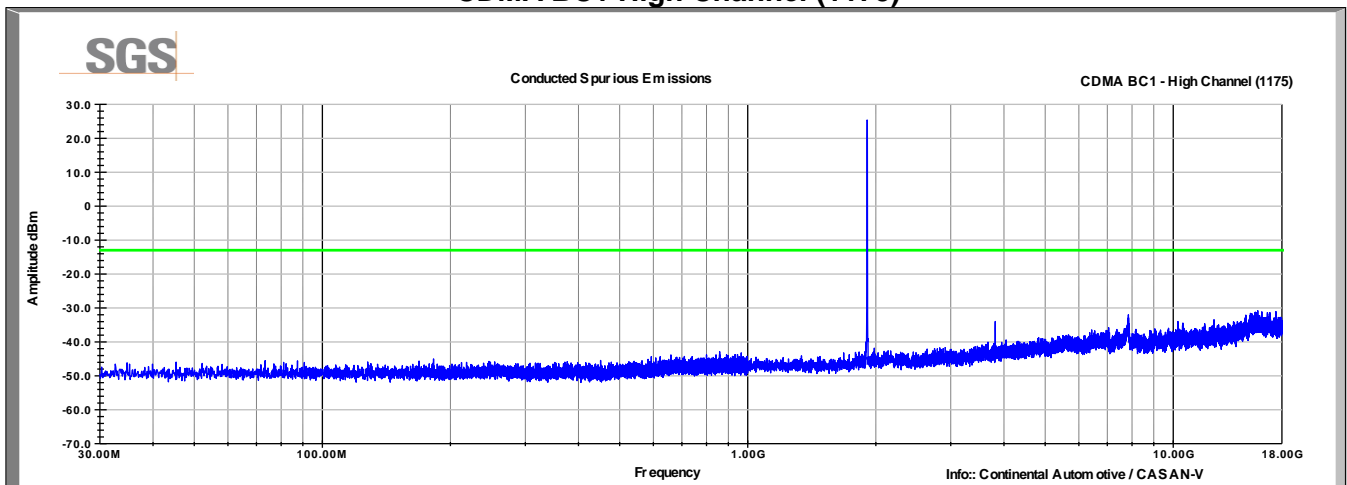
### CDMA BC1 Low Channel (25)



### CDMA BC1 Mid Channel (600)



### CDMA BC1 High Channel (1175)





## 4 Revision History

Revision Level	Description of changes	Revision Date
0	Initial release	11 September 2015