

REPORT

For

Dali Wireless, Inc.

535 Middlefield Road, Suite 280 Menlo Park, CA 94025

Date: 09 July 2018 Report No.: 16898-4E

Revision No.: 0

Project No.: 16898

Equipment: Quad Band Medium Power DAS

Model No.: hd33-4-PS-ABCH-20-8N-D0 FCC ID: HCOHD334PSABCH20A

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Unit 205 – 8291 92 ST., Delta, BC V4G 0A4, Canada Phone: 604-247-0444 Fax: 604-247-0442 www.labtestcert.com Prepared by: LabTest Certification Inc.

Date Issued: 09 July 2018

Project No.: 16898

Revision No.: 0

TABLE OF CONTENTS

| TEST REPORT_FCC Part 2, 90 | 4 |
|---|-----|
| Revision History | |
| Device Under Test Description | 5 |
| Program details | 6 |
| Description of Equipment Under Test and Variant Models | 7 |
| Client Equipment Used During Test | 9 |
| Software and Firmware | 9 |
| Input/Output Ports | 9 |
| Power Interface | 10 |
| EUT Operation Modes | 10 |
| EUT Configuration Modes | 10 |
| Test Equipment Verified for function | 10 |
| Test Station Photo | |
| Test Station Cables and Loads | 11 |
| Test Station Insertion Loss | 11 |
| Measurement Uncertainty | 11 |
| Result Summary | 12 |
| Radiated Emissions | 12 |
| Output Power (Conducted) | 13 |
| Test setup | |
| Results - Output Power FCC Requirement | |
| Input-versus-output Signal Comparison (Conducted) | |
| Test setup | 16 |
| Results - Occupied Bandwidth (OBW) | 17 |
| Unwanted Emissions for 4 Bands Operating PLMRS and PSRS Service (Conducted) | 26 |
| Test setup | |
| Results | |
| Unwanted Emissions for 700 Band Operating Broadband Signal (Conducted) | 39 |
| Test setup | |
| Results - Out-of-band Emissions | |
| Results - Spurious Emissions | |
| Results – Spurious Emissions on Adjacent Narrow Band Frequency Range | |
| Results - Out-of-band Intermodulation Emission | |
| Spectrum Emission Mask | 50 |
| Test setup | 51 |
| Results | |
| Frequency Stability | |
| Passband Gain and Bandwidth & Out of Band Rejection | |
| Test setup | 94 |
| Results | |
| Intermodulation | 97 |
| Test setup | 98 |
| Results Screenshots | |
| Input/output Power and Amplifier/Booster Gain | |
| Test setup | |
| Results | |
| Noise Figure | 105 |
| Test setup | |

Date Issued: 09 July 2018 Project No.: 16898 Client: Dali Wireless, Inc. Report No.:16898-4E Revision No.: 0

| Results | 106 |
|---|-----|
| Radiated Emissions - Enclosure | |
| Test setup | 109 |
| Measurement Procedure | |
| Test Result | 112 |
| Graphical Representation for Emission - Radiated 30kHz to 30MHz | 112 |
| Graphical Representation for Emission - Radiated 30MHz to 1GHz | |
| Graphical Representation for Emission - Radiated 1 to 18GHz | |
| Table Representation for Emission - Radiated 30MHz to 18GHz | |

Date Issued: 09 July 2018 Project No.: 16898 Client: Dali Wireless, Inc. Report No.:16898-4E Revision No.: 0

| TEST REPORT_FCC Part 2, 90 | | | | | |
|---------------------------------|--|----------------------------|--|--|--|
| Private Land Mobile Services | | | | | |
| Report Reference No: | 16898-4E | | | | |
| Report Revision History | ✓ Rev. 0: 09 Jul | | | | |
| Compiled by (+ signature) | Daniel Lee Jeremy Lee | | | | |
| Approved by (+ signature) | Jeremy Lee | 0/352018 | | | |
| Date of issue: | 09 July 2018 | | | | |
| Total number of pages | 118 | | | | |
| | | | | | |
| FCC Site Registration No.: | CA5970 | | | | |
| IC Site Registration No.: | 5970A-2 | | | | |
| Testing Laboratory: | LabTest Certification I | LabTest Certification Inc. | | | |
| Address: | Unit 3128-20800 Westminster HWY, Richmond, B.C. V6V 2W3 Canada | | | | |
| Applicant's name: | Dali Wireless, Inc. | | | | |
| Address: | 535 Middlefield Road, Suite 280, Menlo Park, CA 94025 | | | | |
| Manufacture's Name: | Dali Wireless (Canada) Inc. | | | | |
| Address: | 8618 Commerce Court, Burnaby, B.C. V5A 4N6, Canada | | | | |
| Test specification: | | | | | |
| Standards:: | FCC Part 2; 2018FCC Part 90; 201 | | | | |
| Test procedure: | | | | | |
| Non-standard test method: | N/A | | | | |
| Test Report Form(s) Originator: | : Jeremy Lee | | | | |
| Master TRF: | 1036_Rev2 – RF Repo | ort Template | | | |
| Test item description: | | | | | |
| Trade Mark: | hd33™ | | | | |
| Model/Type reference: | hd33-4-PS-ABCH-20- | 8N-D0 | | | |

Client: Dali Wireless, Inc. Date Issued: 09 July 2018 Report No.:16898-4E Project No.: 16898 Revision No.: 0

| Serial Number: | 10911110RA1B86001 |
|--|-------------------|
| FCC ID: | HCOHD334PSABCH20A |
| Possible test case verdicts: | |
| - test case does not apply to the test object: | N/A |
| - test object does meet the requirement: | P (Pass) |
| - test object does not meet the requirement: | F (Fail) |
| Testing: | |
| Date of receipt of test item: | June 19, 2018 |
| Date (s) of performance of tests: | June 20-25, 2018 |

Revision History

| Revision | Date | Reason For Change | Author(s) |
|----------|------------|-------------------|------------|
| 0 | July, 2018 | Initial Data | Jeremy Lee |
| | | | |

Device Under Test Description

| Application for | PS 900/800/700/450 Remote Unit, Quad Band Medium Power DAS |
|----------------------------------|--|
| Passing Transmit Frequency | 935 MHz – 941 MHz 851 MHz – 862 MHz 758 MHz – 775 MHz 450 MHz – 512 MHz |
| Operating Transmit Frequency FCC | 935 MHz – 940 MHz 851 MHz – 861 MHz 758 MHz – 768 MHz 769 MHz – 775 MHz 450 MHz – 454 MHz 456 MHz – 462.5375 MHz 462.7375 MHz – 467.5375 MHz 467.7375 MHz – 512 MHz |
| Passing Receive Frequency | 896 MHz – 902 MHz 806 MHz – 817 MHz 788 MHz – 805 MHz 450 MHz – 512 MHz |

Date Issued: 09 July 2018 Project No.: 16898

896 MHz - 901 MHz 806 MHz - 816 MHz 788 MHz – 798 MHz Operating Receive Frequency 799 MHz - 805 MHz FCC 450 MHz – 454 MHz 456 MHz - 462.5375 MHz 462.7375 MHz - 467.5375 MHz 467.7375 MHz - 512 MHz Number of Channels As many as which can fit Rated RF Output(e.i.r.p.) 35 dBm P25 Phase I C4FM, CQPSK; P25 Phase II HDQPSK on full band of Band 900, Band 800 and Band 450; 4FSK on Band 900 only; FM on Band 800 between 851 MHz – 854 MHz only; Modulation Type 5MHz LTE on Band 700 between 758 MHz - 768 MHz; P25 Phase I C4FM, CQPSK; P25 Phase II HDQPSK on Band 700 between 769 MHz - 775 MHz Fixed Equipment mobility Operating condition--40 to +50 °C Mass of equipment (g)..... < 22,700gDimension(W X D X H) 430 mm X 194 mm X 466 mm Nominal Voltages for: 48 V stand-alone equipment 48 V combined (or host) equipment Supply Voltage: AC Amps 48V DC 7.083 **Amps**

Client: Dali Wireless, Inc.

Report No.:16898-4E

Revision No.: 0

Program details

If DC Power:

| Testing | Testing Facility by procedure: | | | | |
|----------------------------|--------------------------------|--|--|--|--|
| \boxtimes | Radiated Measurement | LabTest Certification Inc. | | | |
| Testing location/ address: | | Unit 3128-20800 Westminster HWY, Richmond, B.C. V6V 2W3 Canada | | | |
| ☐ Conducted Measurement: | | LabTest Certification Inc. | | | |
| Testing location/ address: | | Unit 3128-20800 Westminster HWY, Richmond, B.C. V6V 2W3 Canada | | | |

__ Internal Power Supply√ External Power Supply

Client: Dali Wireless, Inc. Date Issued: 09 July 2018 Report No.:16898-4E Project No.: 16898 Revision No.: 0

Summary of testing:

Tests performed (name of test and test clause):

Conducted Measurement Radiated Emissions on Enclosure **Testing location:**

Bench top, Richmond In SAC, Richmond

The tests indicated in Test Summary were performed on the product constructed as described below. The test sections are the verbatim text from the actual data sheets used during the investigation. These test sections include the test name, the specified test Method, a list of the actual Test Equipment Used, documentation Photos, Results and raw Data. No additions, deviations, or exclusions have been made from the standard(s) unless specifically noted.

Based on the results of our investigation, we have concluded the product tested complies with the requirements of the standard(s) indicated. The results obtained in this test report pertain only to the item(s) tested. LabTest does not make any claims of compliance for samples or variants which were not tested.

Description of Equipment Under Test and Variant Models

Description:

The hd33 900PS/800PS/700PS/450 PS is a quad-band remote unit that provides at least 2 W of output power on each band.

The guad-band unit supports up to bands in a sealed type 2 chassis.

On the downlink path the hd33 PS remote receives an aggregated stream of digitized RF signals from an hdHost PS, which it then converts into analog RF signals. Depending on the frequency band, the signal is amplified in the RF module and then sent out through simplex RF ports to an external filter.

On the UL path the hd33 PS remote receives analog RF signals for the RF band, from an external filter. The RF signals are converted into a digital data stream and then delivered over optical fiber to an hdHost PS. The hd33 PS remote also accommodates a 1 Gbps Ethernet backhaul for transporting the data from nearby IP devices such as security cameras and Wi-Fi access points.

The intentional transmitter only exists in the downlink path and hence the EMC tests in this report dedicated to the downlink emission.

In order to build up a complete signal booster system, the hdHost was connected as the Auxiliary device. The hdHost does not have annuenna port, where the signal was injected and ejected via coaxial cables.

Client: Dali Wireless, Inc. Date Issued: 09 July 2018 Report No.:16898-4E Project No.: 16898 Revision No.: 0



Variant Models:

The following variant models were not tested as part of this evaluation, but have been identified by the manufacturer as being electrically identical models, depopulated models, or with reasonable similarity to the model(s) tested. Intertek does not make any claims of compliance for samples or variants which were not tested.

hd33-4-PS-ABCH-20-8N-D0 - quad band 900PS 800PS 700PS 450PS model as tested

Tri Band

- 1. hd33-3-PS-ABH-20-6N-D0 (hd33 with 450,700,800PS)
- hd33-3-PS-ACH-20-6N-D0 (hd33 with 450,700,900PS) 2.
- 3. hd33-3-PS-BCH-20-6N-D0 (hd33 with 450,800,900PS)
- hd33-3-PS-ABC-20-6N-D0 (hd33 with 700,800,900PS) 4.

Dual Band:

- hd33-2-PS-AH-20-4N-D0 (hd33 with 450.700PS) 1.
- hd33-2-PS-BH-20-4N-D0 (hd33 with 450,800PS) 2.
- hd33-2-PS-CH-20-4N-D0 (hd33 with 450,000PS) 3.
- hd33-2-PS-AB-20-4N-D0 (hd33 with 700,800PS) 4.
- hd33-2-PS-AC-20-4N-D0 (hd33 with 700,900PS) 5.
- 6. hd33-2-PS-BC-20-4N-D0 (hd33 with 800,900PS)

Single Band:

- hd33-1-PS-H-20-2N-D0 (hd33 with 450PS) 1.
- 2. hd33-1-PS-A -20-2N-D0 (hd33 with 700PS)
- 3. hd33-1-PS-B-20-2N-D0 (hd33 with 800PS)
- hd33-1-PS-C-20-2N-D0 (hd33 with 900PS) 4.

Client: Dali Wireless, Inc. Date Issued: 09 July 2018 Report No.:16898-4E Project No.: 16898 Revision No.: 0

Client Equipment Used During Test

| Use* | Product Type | Manufacturer | Model | Comments |
|------|--|--------------------|---------------------------------|--|
| EUT | hd33, 900PS, 800PS, 700PS, 450PS | Dali Wireless Inc. | hd33-4-PS- ABCH-20-8N- D0 | EUT where the RF (I/O) antenna attached via duplexers/multiplexer when necessary. |
| AE1 | hdHost, 900PS, 800PS, 700PS, 450PS | Dali Wireless Inc. | | Auxiliary equipment, which is connected to the Base Station via RF coaxial cables, has no air interface. |
| AE2 | Dali Matrix Console | Dali Wireless Inc. | hdCNSL-1-8-4- 120G-AC | Auxiliary equipment provides the configuration and control interface to UBitT-CP, <i>hd</i> Host and <i>hd</i> 33. |

Abbreviations:

EUT - Equipment Under Test,

AE - Auxiliary/Associated Equipment, or

SIM - Simulator (Not Subjected to Test)

Software and Firmware

| Use* | Description | Version |
|------|--------------------|-------------|
| EUT | Software installed | 1.0.10.5020 |
| AE1 | Software installed | 1.0.10.5019 |
| AE2 | Software installed | |

Abbreviations:

EUT - Equipment Under Test,

AE - Auxiliary/Associated Equipment, or

SIM - Simulator (Not Subjected to Test)

Input/Output Ports

| Port # | Name | Type* | Cable Max. >3m | Cable Shielded | Comments |
|-----------|-----------------------------|-------|-------------------|-------------------|---------------------------|
| 1 | DC Power Port | DC | No | No | Dual feed 48 VDC Assembly |
| 2 | 8 * RF Input/Output Ports | I/O | No | No | N-Type Coaxial |
| 3 | 2 * Optical Fibre I/O Ports | I/O | No | No | LC/UPC Duplex |
| 4 | 2 * TP | TP | No | No | RJ-45 |

*Note: AC = AC Power Port DC = DC Power Port N/E = Non-Electrical

I/O = Signal Input or Output Port (Not Involved in Process Control)

TP = Telecommunication Ports

Date Issued: 09 July 2018 Project No.: 16898 Client: Dali Wireless, Inc. Report No.:16898-4E Revision No.: 0

Power Interface

| Mode # | Voltage (V) | Current (A) | Power (W) | Frequency (DC/AC-Hz) | Phases (#) | Comments |
|-----------|----------------|----------------|--------------|-------------------------|---------------|----------|
| 1 | 48 | - | - | DC | - | |

EUT Operation Modes

| Mode # | Description |
|--------|---|
| 1 | UL and DL transmission and receiving ON |
| | |

EUT Configuration Modes

| Mode # | Description |
|--------|--|
| 1 | hdHost maximum input threshold set to -10 dBm, uplink attenuation set to 0dB; hd33 uplink and downlink attenuation set to 0dB. |
| | |

Test Equipment Verified for function

| Model # | Description | Checked Function | Results |
|---------------|---------------------------------|-------------------------------------|---|
| N9038A | Spectrum Analyzer | Frequency and Amplitude | Connected 50MHz and -20 dBm Ref_siganl and checked OK. |
| JB1 | Antenna, 30 to 2000MHz | Checked structure | Normal – no damage. |
| SAS-571 | Antenna, 1 to 18GHz | Checked structure | Normal – no damage. |
| AL-130 | Antenna, 9kHz to 30MHz | Checked structure | Normal – no damage. |
| KT- N5172B | Signal Generator, up to 6GHz | Frequency, Amplitude and Modulation | Within MFR Specs |
| KT- N9010A | Spectrum Analyzer | Frquency and Amplitude | Within MFR Specs |

Date Issued: 09 July 2018 Project No.: 16898 Client: Dali Wireless, Inc. Report No.:16898-4E Revision No.: 0

Test Station Photo



Test Station Cables and Loads

| Model # | Manufacture | Description |
|--------------------|-------------|---|
| TM4-N1S1-60 | MegaPhase | N-Type male to SMA male coaxial cable in 60 inches |
| 8 * TM4-S1S1-60 | MegaPhase | 8 times SMA male to SAM male coaxial cable in 60 inches |
| GB14-S1S1-16 | MegaPhase | SMA male to SAM male coaxial cable in 16 inches |
| 4 * GB14-S1S1-12 | MegaPhase | SMA male to SAM male coaxial cable in 12 inches |
| 4 * GB14-S1S1-18 | MegaPhase | SMA male to SAM male coaxial cable in 18 inches |
| 3 * RG316/U | Pasternack | SMA male to SMA male coaxial cable in 12 inches |
| RG316/U | Pasternack | SMA male to SMA male coaxial cable in 36 inches |
| 4 * PE3C0101-400cm | Pasternack | N-Type male to N-Type male coaxial cable in 4 meters |
| 4 * 49-30-34 | Aeroflex | 40dB 150W attenuators |
| 4 * VAT-10W2+ | Minicircuit | 10dB 2W attenuators |

Test Station Insertion Loss

| | Band 900 | Band 800 | Band 700 | Band 450 |
|----------------|----------|----------|----------|----------|
| DL Transmitter | 43.8 dB | 44.5 dB | 43.55 dB | 43 dB |
| UL Receiver | 9.5 dB | 9.52 dB | 9 dB | 8.9 dB |

Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests:

| Parameter | Uncertainty |
|-----------------------------------|-------------|
| Radio Frequency | ±1 ppm |
| Total RF Power: Conducted | ±1 dB |
| RF Power Density: Conducted | ±2.75 dB |
| Spurious Emissions: Conducted | ±3 dB |
| Temperature | ±1 °C |
| Humidity | ±5 % |
| DC and Low Frequency Voltages | ±3 % |
| Radiated Emission, 30 to 6,000MHz | ± 4.95 dB |

Uncertainty figures are valid to a confidence level of 95%.

Client: Dali Wireless, Inc. Report No.:16898-4E Date Issued: 09 July 2018 Project No.: 16898 Revision No.: 0

Result Summary

The Compliance Status is a judgment based on the direct measurements and calculated highest emissions to appropriate standard limits. Measurement uncertainty values, provided on calibration certificates, were not be used in the judgment of the final status of compliance

| FCC Part | | | | | | |
|---|---|---|-----------|--|--|--|
| Test Type | Regulation | Measurement Method | Result | | | |
| Output Power (Conducted) | FCC Part 2 2.1046 FCC Part 90.219 | ANSI TIA-603-E-2016 | Compliant | | | |
| Input-versus-output Signal Comparison | FCC Part 2 2.1049 | ANSI TIA-603- E-2016 & FCC KDB 935210 D05, v01r02 Sec 3.4 | Compliant | | | |
| Unwanted Emissions (Transmitter Conducted) | FCC Part 2 2.1046(a) FCC Part 90.210 FCC Part 90.543(e) | ANSI TIA-603- E-2016 & FCC KDB 935210 D05, v01r02 | Compliant | | | |
| Spectrum Emission Mask | FCC Part 90 90.210 | ANSI TIA-603- E-2016 & FCC KDB 935210 D05, v01r02 | Compliant | | | |
| Out of Band Rejection | FCC KDB 935210 D05, v01r02 | FCC KDB 935210 D05, v01r02 | Compliant | | | |
| Intermodulation | FCC Part 90 90.219 | ANSI TIA-603- E-2016 & FCC KDB 935210 D05, v01r02 | Compliant | | | |
| Input/output Power and Amplifier/Booster Gain | FCC Part 90 90.219 | ANSI TIA-603- E-2016 & FCC KDB 935210 D05, v01r02 | Compliant | | | |
| Noise Figure | FCC Part 90 90.219 | ANSI TIA-603- E-2016 & FCC KDB 935210 D05, v01r02 | Compliant | | | |
| Radiated Emissions - Enclosure | FCC Part 2.1053, FCC Part 90.210 & FCC Part 90.219 | ANSI C63.4:2014 & ANSI TIA- 603-D | Compliant | | | |

Date Issued: 09 July 2018 Project No.: 16898 Client: Dali Wireless, Inc. Report No.:16898-4E Revision No.: 0

Output Power (Conducted)

| | - | | | | | |
|---|--|---------------|-------------------|----------|----------------------|--|
| Governing Doc | FCC Part 2 2.1046(a) FCC Part 90.219(d) | Room T | emperature (°C) | | 29 | |
| Test Procedure | ANSI/TIA-603- E-2016; FCC KDB 935210 D05, v01r02; | Relative | Humidity (%) | | 39.9 | |
| Test Location | Burnaby | Barome | tric Pressure (kP | a) | 101.5 | |
| Test Engineer | Jeremy Lee | Date | | | Jun 20, 2018 | |
| EUT Voltage | ⊠ DC | □ 12 | 20VAC @ 60Hz | | | |
| | | | _ | | | |
| Test Equipment Used | Manufacturer | Model | Serial Number | Calibrat | tion Calibration due | |
| Signal Generator | Keysight | N5172B | MY53050270 | 08/04/ | 17 08/04/18 | |
| Spectrum Analyzer | Keysight | N9010A | MY50520285 | 08/07/ | 17 08/07/18 | |
| Frequency Range: | □ 935 MHz – 940 MHz; 851 MHz – 861 MHz; 758 MHz – 775 MHz; 450 MHz – 512 MHz | | | | | |
| Detector: | ⊠ Peak | | | | | |
| Type of Facility: | | | | | | |
| Distance: | | | | | | |
| Arrangement of EUT: | ☐ Table-top only ☐ |] Floor-stand | ding only | ⊠ Rack | Mounted | |
| | | | | | | |
| Output Power is less than 34.8 dBm in b less than 35.5 dBm in b less than 35.1 dBm in b and less than 35 dBm in | eand 800, eand 700, | | | | | |
| Compliant ⊠ | t 🗆 | Not Appl | icable 🗆 | | | |

Client: Dali Wireless, Inc. Date Issued: 09 July 2018 Report No.:16898-4E Project No.: 16898 Revision No.: 0

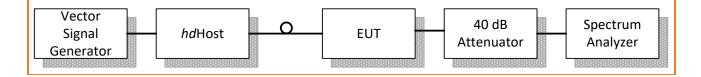
Test setup

Description of test set-up:

Output power is measured by connecting a spectrum analyzer to RF output connector of EUT via 40dB Attenuator. With a nominal input power and the amplifier properly adjusted the RF output is measured.

The EUT was set to Operation Mode #1 with configuration Mode #1.

The maximum output power is measured when the Automatic Level Control (ALC) starting to compress the power and hold to a constant level.



Results - Output Power FCC Requirement

| Frequency Range (MHz) | Frequency (MHz) | Input Power Trip ALC (dBm) | Output Power (dBm) | Limit (37dBm) |
|--------------------------|-----------------|-------------------------------|-----------------------|------------------|
| | 935.0125 | -9.5 | 34.8 | PASS |
| 935 - 940 | 937.5 | -9.5 | 34.6 | PASS |
| | 939.9875 | -9.5 | 34.7 | PASS |
| | 851.0125 | -8.5 | 35.1 | PASS |
| 851 - 861 | 856 | -9.5 | 35.2 | PASS |
| | 860.9875 | -9.5 | 35.5 | PASS |
| | 769.0125 | -9.5 | 35.1 | PASS |
| 769 - 775 | 772 | -9.0 | 35.1 | PASS |
| | 774.9875 | -9.0 | 35.0 | PASS |
| | 760.5 | -8.0 | 34.9 | PASS |
| 758 - 768 | 763 | -8.5 | 34.9 | PASS |
| | 765.5 | -8.5 | 35.0 | PASS |
| 450 - 454 | 450.0125 | -9.5 | 34.2 | PASS |
| 456 – 462.5375 | 462.53125 | -10.5 | 34.7 | PASS |
| 462.7375 – 467.5375 | 463.6375 | -10.5 | 34.6 | PASS |
| 467.7375 - 512 | 511.9875 | -10.5 | 35 | PASS |

Date Issued: 09 July 2018 Project No.: 16898

Input-versus-output Signal Comparison (Conducted)

| input-versus-outpu | at olgilai companisoi | ,, (, | Jonau | ciedy | | | | |
|---|--|-------|---------------------------|---------------|-------------|--------------|-----------------|--|
| Governing Doc | FCC Part 2 2.1049 | | Room Temperature (°C) | | | 29 | | |
| Test Procedure | ANSI/TIA-603- E-2016; FCC KDB 935210 D05, v01r02 Sec 3.4 | | Relative Humidity (%) | | | 39.9 | | |
| Test Location | Burnaby | | Barometric Pressure (kPa) | | | 101.5 | | |
| Test Engineer | Jeremy Lee | | Date | | | Jun 20, 2018 | | |
| EUT Voltage | ⊠ DC | | □ 12 | 0VAC @ 60Hz | | | | |
| | | | | | | | | |
| Test Equipment Used | Manufacturer | | /lodel | Serial Number | Calibration | | Calibration due | |
| Signal Generator | Keysight | N: | 5172B | MY53050270 | 0 | 8/04/17 | 08/04/18 | |
| Spectrum Analyzer | Keysight | N9 | 9010A | MY50520285 | 0 | 8/07/17 | 08/07/18 | |
| Frequency Range: | ⊠ 935 MHz – 940 MHz; 851 MHz – 861 MHz; 758 MHz – 775 MHz; 450 MHz – 512 MHz | | | | | | | |
| Detector: | ⊠ Peak | | | | | | | |
| Type of Facility: | | | | | | | | |
| Distance: | ⊠ Direct | | | | | | | |
| Arrangement of EUT: | ☐ Table-top only ☐ Floor-standing only ☐ Rack Mounted | | | | | unted | | |
| | | | | | | | | |
| Output signal has an occupied channel bandwidth less than the designated channel bandwidth on any location on the operating band. - 4FSK < 12.5 kHz - C4FM < 12.5 kHz - CQPSK < 6.25 kHz - HDQPSK < 12.5 kHz - 4 kHz FM with 1kHz deviation < 12.5 kHz - LTE < 5 MHz AGC activation does not distort the signal shape. | | | | | | | | |
| Compliant ⊠ | Non-Complian | t 🗆 | | Not Appl | icat | ole 🗆 | | |

Client: Dali Wireless, Inc.

Report No.:16898-4E

Revision No.: 0

Client: Dali Wireless, Inc. Date Issued: 09 July 2018 Report No.:16898-4E Project No.: 16898 Revision No.: 0

Test setup

Description of test set-up:

Occupied Bandwidth is measured by connecting a Spectrum Analyzer to the RF output connector via 40dB attenuator. The required measurement resolution bandwidth (RBW) is 1% of the emission bandwidth. 99% energy rule was applied to measure the occupied channel bandwidth. The emission bandwidth is measured as the width of the signal between two frequency points on the channel edge, outside of which the transmission power is attenuated at least 26dB below the transmitter output power

The EUT was set to Operation Mode #1 with configuration Mode #1.

The occupied bandwidth of DL output is measured under two input conditions:

- Nominal: with input 0.5dB below AGC threshold
- AGC: with input 3dB above AGC threshold



Date Issued: 09 July 2018 Project No.: 16898 Client: Dali Wireless, Inc. Report No.:16898-4E Revision No.: 0

Results - Occupied Bandwidth (OBW)



Date Issued: 09 July 2018 Project No.: 16898 Revision No.: 0 **Input OBW Output OBW when AGC inactive Output OBW when AGC active** HDQPSK Signal at 935.0125 MHz Ref Offset 43.8 dB Ref 45.00 dBm Ref Offset 43.8 dB Ref 45.00 dBm Center Fi 935.012500 M Center Fr 935.012500 M Center Fi CF Ste 2.500 kH CF Ste 2.500 ki CF Step 2.500 kH Occupied Bandwidth
9.575 kHz Occupied Bandwidth 9.785 kHz 9.948 kHz 4FSK Signal at 937.5 MHz Ref Offset 43.8 dB Ref 45.00 dBm Ref Offset 43.8 dB Ref 45.00 dBm Center Fr 937.500000 M Center Fr 937.500000 M Center Fre CF Ste 2.500 ki CF Ste 2.500 ki CF Step 2.500 kH tn 7.315 kHz 7.295 kHz Freq Offs Transmit Freg Error 99.00 % Transmit Freg Error 99.00 % Transmit Freg Error OBW Powe C4FM Signal at 937.5 MHz Center Fr 937.500000 M Center Fr 937.500000 M Center Fre CF Step 2.500 kH CF Ste 2.500 ki CF Step 2.500 kH Occupied Bandwidth 8.573 kHz Occupied Bandwidth 7.898 kHz 7.694 kHz Freq O Freq Off CQPSK Signal at 937.5 MHz Ref Offset 43.8 dB Ref 45.00 dBm Ref Offset 43.8 dB Ref 45.00 dBm Center F 937.500000 N Center Fr 937.500000 M CF Ste 1.250 kH CF Step 1.250 kH CF Step 1.250 kH Occupied Bandwidth
4.812 kHz Occupied Bandwidth
4.872 kHz 4.901 kHz

Client: Dali Wireless, Inc.

Report No.:16898-4E

Prepared by: LabTest Certification Inc.

Page 18 of 118

Input OBW Output OBW when AGC inactive Output OBW when AGC active HDQPSK Signal at 937.5 MHz Ref Offset 43.8 dB Ref 45.00 dBm Ref Offset 43.8 dB Ref 45.00 dBm Center Fi Center Fr 937.500000 M Center Fi CF Ste 2.500 kH CF Ste 2.500 ki CF Step 2.500 kH Occupied Bandwidth 9.858 kHz Occupied Bandwidth 9.804 kHz 9.500 kHz FM Signal at 851.0125MHz Ref Offset 44.5 dB Ref 45.00 dBm Ref Offset 44.5 dB Ref 45.00 dBm Center Fr 851.012500 M Center Fr 851.012500 M Center Fre CF Ste 2.500 ki CF Ste 2.500 ki CF Step 2.500 kH 10.121 kHz 10.121 kHz Freq Offs Transmit Freg Error 99.00 % Transmit Freg Error 99.00 % Transmit Freg Error OBW Powe 99.00 % C4FM Signal at 851.0125 MHz enter Freq 851.012500 MHz enter Freq 851.012500 MH Center Fr 851.012500 M Center Fn 851.012500 M CF Ste 2.500 kH CF Ste 2.500 ki CF Step 2.500 kH 8.474 kHz 7.785 kHz 8.434 kHz CQPSK Signal at 851.0125 MHz Ref Offset 44.5 dB Ref 45.00 dBm Ref Offset 44.5 dB Ref 45.00 dBm Center F 851.012500 Center Fr 851.012500 M CF Step 1.250 kH CF Ste 1.250 kir CF Step 1.250 kH Occupied Bandwidth 4.866 kHz Occupied Bandwidth 4.852 kHz 4.893 kHz

Client: Dali Wireless, Inc.

Report No.:16898-4E

Revision No.: 0

Prepared by: LabTest Certification Inc.

Date Issued: 09 July 2018

Project No.: 16898

Page 19 of 118

Project No.: 16898 Revision No.: 0 **Input OBW Output OBW when AGC inactive Output OBW when AGC active** HDQPSK Signal at 851.0125 MHz Ref Offset 44.5 dB Ref 45.00 dBm Ref Offset 44.5 dB Ref 45.00 dBm Center Fi 851.012500 M Center F 851.012500 M Center Fr 851.012500 M CF Ste 2.500 kH CF Ste 2.500 ki CF Step 2.500 kH Occupied Bandwidth 9.778 kHz Occupied Bandwidth 9.853 kHz 9.827 kHz C4FM Signal at 856 MHz Ref Offset 44.5 dB Ref 45.00 dBm Ref Offset 44.5 dB Ref 45.00 dBm Center Fi Center Fr 856.000000 M Center Fr CF Ste 2.500 ki CF Ste 2.500 ki CF Step 2.500 kH tn 7.730 kHz 8.547 kHz 8.126 kHz Freq Offs Transmit Freg Error 99.00 % Transmit Freg Error OBW Power 99.00 % Transmit Freg Error OBW Powe 99.00 % CQPSK Signal at 856 MHz Center Fr Center Fr 856.000000 M Center Fre CF Step 1.250 kH CF Ste 1.250 ki CF Step 1.250 kH 4.865 kHz 4.887 kHz 4.885 kHz Freq Of Freq Off HDQPSK Signal at 856 MHz Ref Offset 44.5 dB Ref 45.00 dBm Ref Offset 44.5 dB Ref 45.00 dBm Center Fr 856.000000 M CF Step 2.500 kH CF Ste 2.500 kit CF Step 2.500 kH Occupied Bandwidth 9.770 kHz Occupied Bandwidth 9.790 kHz 9.638 kHz

Client: Dali Wireless, Inc.

Report No.:16898-4E

Prepared by: LabTest Certification Inc.

Page 20 of 118

Project No.: 16898 Revision No.: 0 **Input OBW Output OBW when AGC inactive Output OBW when AGC active** C4FM Signal at 769.0125 MHz Ref Offset 43.55 dB Ref 45.00 dBm Ref Offset 43.55 dB Ref 45.00 dBm Center Fi 769.012500 M Center Fr 69.012500 M Center Fi 769.012500 M CF Ste 2.500 kH 2.500 ki CF Step 2.500 kH Occupied Bandwidth 7.657 kHz Occupied Bandwidth 8.081 kHz 8.300 kHz CQPSK Signal at 769.0125 MHz ter Freq 769.012500 MH. r Freq 769.012500 MHz Ref Offset 43.55 dB Ref 45.00 dBm Ref Offset 43.55 dB Ref 45.00 dBm Center Fr Center Fr 769.012500 M Center Fre Span 12.5 kHz Span 12.5 kHz Span 12.5 kHz CF Ste 1.250 ki 1.250 ki CF Step 1.250 kH 4.843 kHz 4.889 kHz Freq Offs Transmit Freg Error OBW Powe 99.00 % Transmit Freg Error 99.00 % Transmit Freg Error OBW Por 99.00 % HDQPSK Signal at 769.0125 MHz nter Freq 769.012500 MHz Ref Offset 43.55 dB Ref 45.00 dBm Center Fr 769.012500 M Center Fr 769.012500 M Center Fre CF Step 2.500 kH CF Ste 2.500 ki CF Step 2.500 kH Occupied Bandwidth 9.616 kHz 9.760 kHz 9.697 kHz Freq Of Freq Off C4FM Signal at 772 MHz Ref Offset 43.55 dB Ref 45.00 dBm Ref Offset 43.55 dB Ref 45.00 dBm Center F 772.000000 N Center Fr 72.000000 M CF Ste 2.500 kH CF Step 2.500 kH CF Step 2.500 kH Occupied Bandwidth 7.986 kHz Occupied Bandwidth 7.686 kHz Occupied Bandwidth 7.645 kHz

Client: Dali Wireless, Inc.

Report No.:16898-4E

Prepared by: LabTest Certification Inc.

Page 21 of 118

Date Issued: 09 July 2018 Project No.: 16898 Revision No.: 0 **Input OBW Output OBW when AGC inactive Output OBW when AGC active** CQPSK Signal at 772 MHz Ref Offset 43.55 dB Ref 45.00 dBm Ref Offset 43.55 dB Ref 45.00 dBm Center Fi Center Fr Center Fi CF Ste 1.250 kH CF Ste 1.250 ki CF Step 1.250 kH Occupied Bandwidth
4.906 kHz Occupied Bandwidth
4.812 kHz Occupied Bandwidth
4.852 kHz HDQPSK Signal at 772 MHz Ref Offset 43.55 dB Ref 45.00 dBm Ref Offset 43.55 dB Ref 45.00 dBm Center Fi Center Fr Center Fr CF Ste 2.500 ki CF Ste 2.500 ki CF Step 2.500 kH 9.772 kHz 9.552 kHz Freq Offs Transmit Freg Error OBW Powe 99.00 % Transmit Freg Error OBW Power 99.00 % Transmit Freg Error OBW Powe 99.00 % C4FM Signal at 774.9875 MHz enter Freq 774.987500 MHz Center Fr 74.987500 M Center Fre CF Step 2.500 kH CF Ste 2.500 ki CF Step 2.500 kH Occupied Bandwidth 8.199 kHz Occupied Bandwidth 8.337 kHz 8.063 kHz Freq Of Freq Off CQPSK Signal at 774.9875 MHz Ref Offset 43.55 dB Ref 45.00 dBm Ref Offset 43.55 dB Ref 45.00 dBm Center Fi 774.987500 M Center F 774.987500 M Center Fr 774.987500 M CF Ste 1.250 kH CF Step 1.250 kH CF Step 1.250 kH Occupied Bandwidth
4.840 kHz Occupied Bandwidth
4.807 kHz Occupied Bandwidth
4.839 kHz

Client: Dali Wireless, Inc.

Report No.:16898-4E

Prepared by: LabTest Certification Inc.

Page 22 of 118

Project No.: 16898 Revision No.: 0 **Input OBW Output OBW when AGC inactive Output OBW when AGC active** HDQPSK Signal at 774.9875 MHz Ref Offset 43.55 dB Ref 45.00 dBm Ref Offset 43.55 dB Ref 45.00 dBm Center Fi 774.987500 M Center Fr 74.987500 M Center Fr 774.987500 M CF Ste 2.500 kH CF Ste 2.500 ki CF Step 2.500 kH Occupied Bandwidth 9.634 kHz Occupied Bandwidth 9.907 kHz 9.707 kHz 5MHz LTE Signal at 760.5 MHz Ref Offset 43.55 dB Ref 45.00 dBm Ref Offset 43.55 dB Ref 45.00 dBm Center Fr Center Fr Center Fr CF Step 1.000000 MH CF Ste 1.000000 MH CF St 1.000000 M 4.4765 MHz 4.4829 MHz 4.4768 MHz Freq Offs Transmit Freg Error -6.474 kHz 4.823 MHz 99.00 % Transmit Freg Error 99.00 % Transmit Freg Error 99.00 % 5MHz LTE Signal at 765.5 MHz Center Fr 765.500000 M Center Fr 765.500000 M Center Fre CF Step 1.000000 MH 4.4820 MHz 4.4701 MHz 4.4796 MHz Freq Of Freq Off C4FM Signal at 450.0125 MHz Ref Offset 43 dB Ref 45.00 dBn Ref Offset 43 dB Ref 45.00 dBn Center Fi 450.012500 M Center F 450.012500 N Center Fr 450.012500 M CF Step 2.500 kH CF Step 2.500 kH CF Step 2.500 kH Occupied Bandwidth 8.183 kHz Occupied Bandwidth 8.417 kHz 8.067 kHz

Client: Dali Wireless, Inc.

Report No.:16898-4E

Prepared by: LabTest Certification Inc.

Page 23 of 118

Project No.: 16898 Revision No.: 0 **Input OBW Output OBW when AGC inactive Output OBW when AGC active** CQPSK Signal at 450.0125 MHz Ref Offset 43 dB Ref 45,00 dBn Ref Offset 43 dB Ref 45.00 dBn Center Fi Center Fr 450.012500 M Center Fi CF Ste 1.250 kH CF Ste 1.250 ki CF Step 1.250 kH Occupied Bandwidth
4.836 kHz Occupied Bandwidth
4.805 kHz Occupied Bandwidth
4.841 kHz HDQPSK Signal at 450.0125 MHz ter Freq 450.012500 MHz r Freq 450.012500 MH Ref Offset 43 dB Ref 45.00 dBm Ref Offset 43 dB Ref 45.00 dBn Center Fr Center Fr 450.012500 M Center Fr CF Ste 2.500 ki CF Ste 2.500 ki CF Step 2.500 kH 9.724 kHz Freq Offs Transmit Freg Error OBW Powe 99.00 % Transmit Freg Error OBW Power 99.00 % Transmit Freg Error OBW Powe 99.00 % C4FM Signal at 481 MHz Center Fr 481.000000 M Center Fr 481.000000 M CF Step 2.500 kH CF Ste 2.500 ki CF Step 2.500 kH Occupied Bandwidth 7.872 kHz Occupied Bandwidth 7.760 kHz 8.317 kHz Freq Of Freq Off CQPSK Signal at 481 MHz Ref Offset 43 dB Ref 45.00 dBn Ref Offset 43 dB Ref 45.00 dBn Center F Center Fr 481.000000 M CF Ste 1.250 kH CF Step 1.250 kH CF Step 1.250 kH Occupied Bandwidth
4.837 kHz Occupied Bandwidth
4.853 kHz Occupied Bandwidth
4.804 kHz

Client: Dali Wireless, Inc.

Report No.:16898-4E

Prepared by: LabTest Certification Inc.

Page 24 of 118

Project No.: 16898 Revision No.: 0 **Input OBW Output OBW when AGC inactive Output OBW when AGC active** HDQPSK Signal at 481 MHz Ref Offset 43 dB Ref 45.00 dBn Ref Offset 43 dB Ref 45.00 dBn Center Fi 481.000000 M Center Fr 481.000000 M Center Fi CF Ste 2.500 kH CF Ste 2.500 ki CF Step 2.500 kH Occupied Bandwidth 9.629 kHz Occupied Bandwidth 9.691 kHz 9.688 kHz C4FM Signal at 511.9875 MHz Ref Offset 43 dB Ref 45.00 dBm Ref Offset 43 dB Ref 45.00 dBn Center Fr 511.987500 M Center Fr 511.987500 M Center Fre CF Ste 2.500 ki CF Ste 2.500 ki CF Step 2.500 kH 7.785 kHz 7.685 kHz Freq Offs Transmit Freg Error 99.00 % Transmit Freg Error 99.00 % Transmit Freg Error OBW Powe 99.00 % CQPSK Signal at 511.9875 MHz enter Freq 511.987500 MH Center Fr 511.987500 M Center Fre 511.987500 Mil CF Step 1.250 kH CF Ste 1.250 ki CF Step 1.250 kH 4.815 kHz 4.851 kHz 4.877 kHz Freq Of Freq Off HDQPSK Signal at 511.9875 MHz Ref Offset 43 dB Ref 45.00 dBn Ref Offset 43 dB Ref 45.00 dBn Center F 511.987500 M Center Fr 511.987500 M CF Ste 2.500 kH CF Step 2.500 kH CF Step 2.500 kH Occupied Bandwidth
9.791 kHz Occupied Bandwidth 9.878 kHz Occupied Bandwidth 9.785 kHz

Client: Dali Wireless, Inc.

Report No.:16898-4E

Prepared by: LabTest Certification Inc.

Page 25 of 118