

## AUT Report

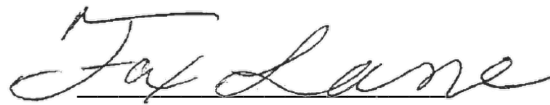
**Prepared for:** Digital Monitoring Products

**Address:** 2500 North Partnership Blvd.  
Springfield, MO 65803

**Product:** PC0245

**Test Report No:** R20221024-20-A1

**Approved by:**



**Fox Lane,**  
**EMC Test Engineer**

**DATE:** April 17, 2023

**Total Pages:** 10

*The Nebraska Center for Excellence in Electronics (NCEE) authorizes the above-named company to reproduce this report provided it is reproduced in its entirety for use by the company's employees only. Any use that a third party makes of this report, or any reliance on or decisions made based on it, are the responsibility of such third parties. NCEE accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. This report applies only to the items tested.*



|                |                             |     |   |
|----------------|-----------------------------|-----|---|
| Report Number: | R20221024-20-A1             | Rev | 0 |
| Prepared for:  | Digital Monitoring Products |     |   |

**REVISION PAGE**

| Rev. No. | Date          | Description                          |
|----------|---------------|--------------------------------------|
| 0        | 17 April 2023 | Issued by FLane<br>Prepared by FLane |



Report Number:

R20221024-20-A1

Rev

0

Prepared for:

Digital Monitoring Products

**CONTENTS**

Revision Page ..... 2

**1.0 Summary of test results..... 4**

**2.0 EUT Description..... 4**

**2.1 Equipment under test ..... 4**

**3.0 Laboratory and General Test Description ..... 5**

**3.1 Laboratory description..... 5**

**3.2 Test personnel..... 5**

**3.3 Test equipment..... 6**

**3.4 General Test Procedure and Setup for Radio Measuremnts..... 7**

**4.0 Results ..... 8**

**4.1 Antenna Gain ..... 8**

**REPORT END..... 10**



|                |                             |     |   |
|----------------|-----------------------------|-----|---|
| Report Number: | R20221024-20-A1             | Rev | 0 |
| Prepared for:  | Digital Monitoring Products |     |   |

## 1.0 SUMMARY OF TEST RESULTS

Antenna Gain Measurements were reported for 900 MHz band.

## 2.0 EUT DESCRIPTION

### 2.1 EQUIPMENT UNDER TEST

#### Summary and Operating Condition:

The Equipment Under Test (EUT) was PC0245 manufactured by DMP wireless devices. It operates in the 902 to 928 MHz ISM band and has transmit and receive capabilities.

|                               |   |
|-------------------------------|---|
| <b>EUT</b>                    | PC0245  |
| <b>FCC ID:</b>                | CCKPC0245   |
| <b>EUT Received</b>           | 11/22/2022  |
| <b>EUT Tested</b>             | 11/22/2022 - 4/17/2023                                |
| <b>Serial No.</b>             | 010903 (Lab Assigned Serial Number) (Radiated Sample) |
| <b>Operating Band</b>         | 902MHz – 928MHz                                       |
| <b>Power Supply / Voltage</b> | Internal Battery, 3VDC                                |
| <b>Antenna Gain (dBi)</b>     | 5.54dBi, Helical Spring Antenna                       |

NOTE: For more detailed features description, please refer to the manufacturer's specifications or user's manual.

### 3.0 LABORATORY AND GENERAL TEST DESCRIPTION

#### 3.1 LABORATORY DESCRIPTION

All testing was performed at the following Facility:

The Nebraska Center for Excellence in Electronics (NCEE Labs)  
 4740 Discovery Drive  
 Lincoln, NE 68521

|  |         |
|--|---------|
| A2LA Certificate Number:                   | 1953.01 |
| FCC Accredited Test Site Designation No:   | US1060  |
| Industry Canada Test Site Registration No: | 4294A   |
| NCC CAB Identification No:                 | US0177  |

Environmental conditions varied slightly throughout the tests:

Relative humidity of  $35 \pm 4\%$   
 Temperature of  $22 \pm 3^\circ$  Celsius



#### 3.2 TEST PERSONNEL

| No. | PERSONNEL    | TITLE         | ROLE               |
|-----|--------------|---------------|--------------------|
| 1   | Fox Lane     | Test Engineer | Testing and Report |
| 2   | Blake Winter | Test Engineer | Testing            |

**Notes:**

All personnel are permanent staff members of NCEE Labs.



|                |                             |     |   |
|----------------|-----------------------------|-----|---|
| Report Number: | R20221024-20-A1             | Rev | 0 |
| Prepared for:  | Digital Monitoring Products |     |   |


### 3.3 TEST EQUIPMENT

| DESCRIPTION AND MANUFACTURER                              | MODEL NO.  | SERIAL NO.     | LAST CALIBRATION DATE | CALIBRATION DUE DATE |
|---|------------|----------------|-----------------------|----------------------|
| Keysight MXE Signal Analyzer (26.5GHz)***                 | N9038A     | MY56400083     | July 19, 2022         | July 19, 2024        |
| Keysight EXA Signal Analyzer**                            | N9010A     | MY56070862     | July 20, 2021         | July 20, 2023        |
| ETS EMCO Red Horn Antenna                                 | 3115       | 00218655       | July 21, 2022         | July 21, 2023        |
| Rohde & Schwarz Preamplifier*                             | TS-PR18    | 3545700803     | March 21, 2022        | March 21, 2024       |
| TDK Emissions Lab Software                                | V11.25     | 700307         | NA                    | NA                   |
| RF Cable (preamplifier to antenna)*                       | MFR-57500  | 01-07-002      | March 21, 2022        | March 21, 2024       |
| RF Cable (antenna to 10m chamber bulkhead)*               | FSCM 64639 | 01E3872        | September 24, 2021    | September 24, 2023   |
| RF Cable (10m chamber bulkhead to control room bulkhead)* | FSCM 64639 | 01E3864        | September 24, 2021    | September 24, 2023   |
| RF Cable (control room bulkhead to test receiver)*        | FSCM 64639 | 01F1206        | September 24, 2021    | September 24, 2023   |
| N connector bulkhead (10m chamber)*                       | PE9128     | NCEEBH1        | September 24, 2021    | September 24, 2023   |
| N connector bulkhead (control room)*                      | PE9128     | NCEEBH2        | September 24, 2021    | September 24, 2023   |
| Rigol Signal Analyzer***                                  | DSA815-TG  | DSA8A142300459 | February 2, 2023      | February 2, 2024     |

\*Internal Characterization  
 \*\*2 Year Cal Cycle  
 \*\*\*Customer Equipment

**Notes:**

All equipment is owned by NCEE Labs and stored permanently at NCEE Labs facilities unless otherwise specified.

|  |                |                             |     |   |
|--|----------------|-----------------------------|-----|---|
|  | Report Number: | R20221024-20-A1             | Rev | 0 |
|  | Prepared for:  | Digital Monitoring Products |     |   |

### 3.4 GENERAL TEST PROCEDURE AND SETUP FOR RADIO MEASUREMENTS

Measurement type presented in this report (Please see the checked box below):

**Conducted**

The conducted measurements were performed by connecting the output of the transmitter directly into a spectrum analyzer using an impedance matched cable and connector soldered to the EUT in place of the antenna. All the radio measurements were performed using the sections from ANSI C63.10, details about the section used can be found in the spectrum analyzer titles on the graph.

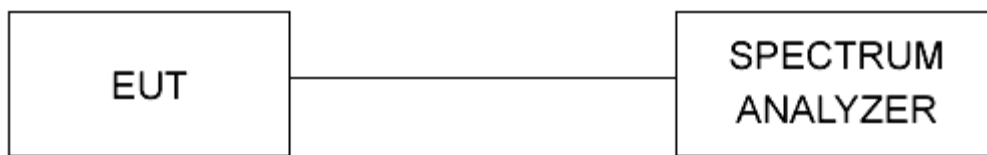


Figure 1 - Bandwidth Measurements Test Setup

**Radiated**

All the radiated measurements were taken at a distance of 3m from the EUT. All the radio measurements were performed using the sections from ANSI C63.10, details about the section used can be found in the spectrum analyzer titles on the graph.

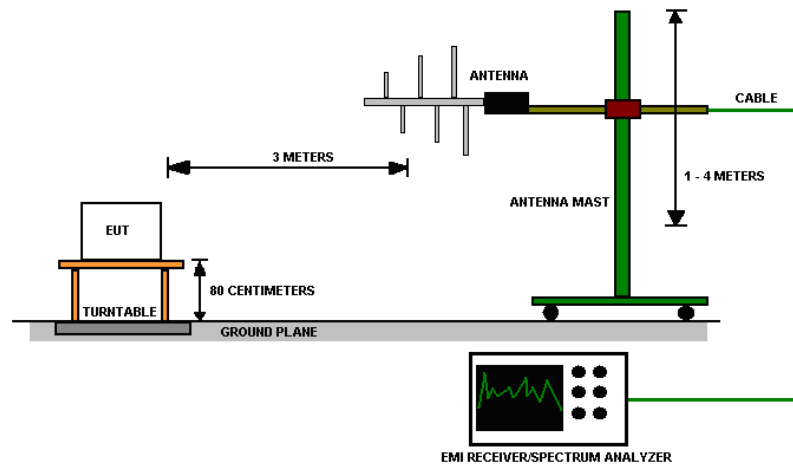


Figure 2 - Radiated Emissions Test Setup



|                |                             |     |   |
|----------------|-----------------------------|-----|---|
| Report Number: | R20221024-20-A1             | Rev | 0 |
| Prepared for:  | Digital Monitoring Products |     |   |

## 4.0 RESULTS

### 4.1 ANTENNA GAIN

**Test procedures:**

Device's conducted power was measured then then same measurement was repeated on a radiated sample at 3m test distance and converted to E.I.R.P.

**Test setup:**

Details can be found in section 2.1 of this report.

**EUT operating conditions:**

Details can be found in section 2.1 and 2.2 of this report.

**Test results:**

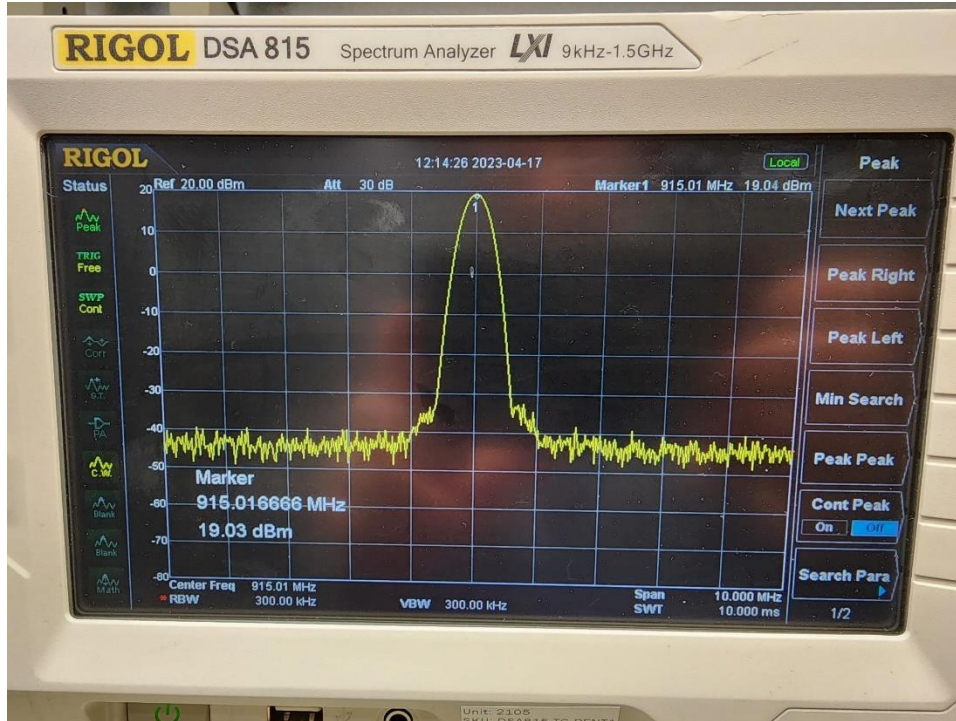
**Antenna Gain:**

Radiated Average Power (EIRP) – Conducted Average Power = Antenna gain  
24.57 dBm – 19.03 dBm = **5.54 dBi**

**Comments:**

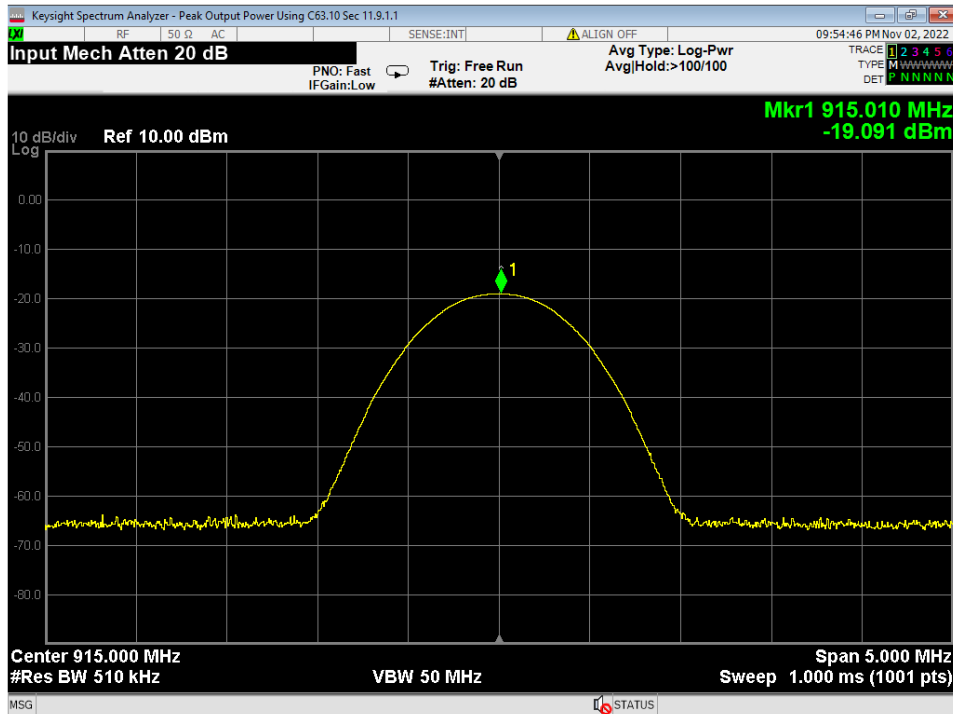
NA





**Figure 3 – Conducted Power Measurement for antenna gain calculation**

Conducted measurement provided by Customer, Calibration date in Section 3.3.



**Figure 4 – Radiated Power Measurement for antenna gain calculation**

Measurement is uncorrected, see corrections below.

Peak EIRP = Raw EIRP + Transducer + Cable + EIRP Conversion @ 3m

$$24.57\text{dBm} = -19.091 + 26.5 + 5.39 + 11.77$$



Report Number:

R20221024-20-A1

Rev

0

Prepared for:

Digital Monitoring Products

REPORT END