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## FCC PART 95 SUBPART D

### CB TRANSCEIVER PARTIAL TEST REPORT

|                      |                                                                        |
|----------------------|------------------------------------------------------------------------|
| APPLICANT            | COBRA ELECTRONICS CORPORATION                                          |
|                      | 6500 WEST CORTLAND STREET<br>CHICAGO, IL 60707 USA                     |
| FCC ID               | BBO75WXSTA                                                             |
| MODEL NUMBER         | 75WXST                                                                 |
| PRODUCT DESCRIPTION  | COMPACT REMOTE MOUNT CB RADIO                                          |
| DATE SAMPLE RECEIVED | 03/29/2018                                                             |
| FINAL TEST DATE      | 04/09/2018                                                             |
| TESTED BY            | Franklin Rose                                                          |
| APPROVED BY          | Tim Royer                                                              |
| TEST RESULTS         | <input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL |

| Report Number      | Version Number | Description      | Issue Date |
|--------------------|----------------|------------------|------------|
| 444UT18_TestReport | Rev1           | Initial Issue    | 04/09/2018 |
| 444UT18_TestReport | Rev2           | Added MRA Number | 04/17/2018 |

THE ATTACHED REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT  
THE WRITTEN APPROVAL OF TIMCO ENGINEERING, INC.



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## GENERAL REMARKS

The attached report shall not be reproduced except in full without the written permission of Timco Engineering Inc.

## Summary

The device under test does:

- ☒ Fulfill the general approval requirements as identified in this test report and was selected by the customer.
- ☐ Not fulfill the general approval requirements as identified in this test report

## Attestations

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report.

All instrumentation and accessories used to test products for compliance to the indicated standards are calibrated regularly in accordance with ISO 17025 requirements.

I attest that the necessary measurements were made at:

**Timco Engineering Inc.**  
**849 NW State Road 45**  
**Newberry, FL 32669**  
**Designation #: US1070**



### Tested by:

Name and Title: Franklin Rose, Project Manager/Testing Engineer

**Date: 04/09/2018**

### Reviewed and approved by:



### Tested by:

Name and Title: Tim Royer, Project Manager/Testing Engineer

**Date: 4/9/2018**

## GENERAL INFORMATION

### EUT Specification

|                             |                                                                      |
|-----------------------------|----------------------------------------------------------------------|
| <b>EUT Description</b>      | COMPACT REMOTE MOUNT CB RADIO                                        |
| <b>FCC ID</b>               | BBO75WXSTA                                                           |
| <b>Model Number</b>         | 75WXST                                                               |
| <b>Serial Number</b>        | "75WS2 FCC SAMPLE 1# 2018_03_16"                                     |
| <b>Operating Frequency</b>  | 26.965-27.405 MHz – 40 Channel                                       |
| <b>No. of Channels</b>      | 40                                                                   |
| <b>Type of Emission</b>     | <b>6K00A3E</b><br>Bn = 2M<br>Bn = 6000, (where M = 3000)             |
| <b>Modulation</b>           | AM VOICE (A3E)                                                       |
| <b>EUT Power Source</b>     | <input type="checkbox"/> 110–120Vac/50– 60Hz                         |
|                             | <input checked="" type="checkbox"/> DC Power (13.8 VDC)              |
|                             | <input type="checkbox"/> Battery Operated Exclusively                |
| <b>Test Item</b>            | <input type="checkbox"/> Prototype                                   |
|                             | <input type="checkbox"/> Pre-Production                              |
|                             | <input checked="" type="checkbox"/> Production                       |
| <b>Type of Equipment</b>    | <input type="checkbox"/> Fixed                                       |
|                             | <input checked="" type="checkbox"/> Mobile                           |
|                             | <input type="checkbox"/> Portable                                    |
| <b>Applicable Standards</b> | FCC CFR 47 Part 2, FCC CFR 47 Part 95 D, ANSI/TIA-603-E, ANSI C63.10 |

### TEST REPORT SUMMARY

| <b>FCC/ IC Rule Part</b> | <b>Scope of Work</b>              | <b>Requirement</b> | <b>Status<br/>Pass / Fail / NA</b> |
|--------------------------|-----------------------------------|--------------------|------------------------------------|
| 2.1046(a), 95.967        | RF Power Output                   | < 4 W              | Pass                               |
| 2.1051, 95.979(5)(6)     | Antenna Conducted Emissions       | Comply with Mask   | Pass                               |
| 2.1053, 95.979(5)(6)     | Field Strength Spurious Emissions | Comply with Mask   | Pass                               |

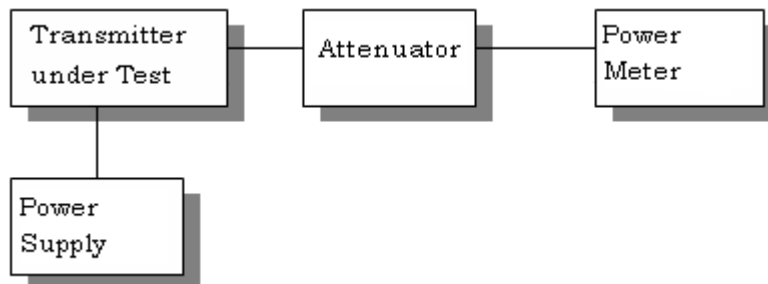
## RF POWER OUTPUT

**Rule Part No.:** FCC Pt. 2.1046(a), 95.967

**Test Requirements:** 4 W Mean Carrier power when transmitting emission type A1D or A3E

**Method of Measurement:** RF power is measured by connecting a 50-ohm, resistive wattmeter to the RF output connector. With a nominal battery voltage and the transmitter properly adjusted the RF output measures:

### Test Setup Diagram:



### Test Data: Power Output Measurement Table

| Channel | Output Freq (MHz) | Mean Power (dBm) | Mean Power (W) | Limit (W) | Margin (W) |
|---------|-------------------|------------------|----------------|-----------|------------|
| 1       | 26.965            | 36.01            | 3.99           | 4.00      | 0.01       |
| 19      | 27.185            | 35.99            | 3.97           | 4.00      | 0.03       |
| 40      | 27.405            | 35.88            | 3.87           | 4.00      | 0.13       |

## FCC Part 2.1033(C)(8) DC Input into the final amplifier

### Test Data: DC Power Input Measurement Table

INPUT POWER: (13.8 VDC) (0.8 A) = **11.04 Watts**

**Result: Meets Requirements**

## SPURIOUS EMISSIONS AT ANTENNA TERMINALS (CONDUCTED)

**Rule Part No.:** Part 2.1051(a), 95.979(5)(6)

**Requirements:**  $53 + 10\log(P)$  dBc. Any harmonic emissions must be  $> 60$  dBc.

**Method of Measurement:** TIA-603 E.

**Test Data:** CH 1 - Spurious Emission Measurement Table

| Power Output | dBm   | Watts | Limit (dBc) |
|--------------|-------|-------|-------------|
|              | 36.01 | 3.99  | 60          |

| Frequency            | Peak (dBm) | Margin |
|----------------------|------------|--------|
| (fundamental) 26.965 | 0.00       | 0.00   |
| 53.930               | -24.17     | 0.18   |
| 80.895               | -45.13     | 21.14  |
| 107.860              | -40.83     | 16.84  |
| 134.825              | -48.28     | 24.29  |
| 161.790              | -49.07     | 25.08  |
| 188.755              | -34.97     | 10.98  |
| 215.720              | -42.98     | 18.99  |
| 242.685              | -43.12     | 19.13  |
| 269.650              | -52.60     | 28.61  |

\* Indicates Noise Floor

**Result: Meets Requirements**

## CONDUCTED SPURIOUS EMISSIONS

Test Data: CH 19 - Spurious Emission Measurement Table

| Power Output | dBm   | Watts | Limit (dBc) |
|--------------|-------|-------|-------------|
|              | 35.99 | 3.97  | 60          |

| Frequency            | Peak (dBm) | Margin |
|----------------------|------------|--------|
| (fundamental) 27.185 | 0.00       | 0.00   |
| 54.370               | -27.78     | 3.77   |
| 81.555               | -44.78     | 20.77  |
| 108.740              | -38.77     | 14.76  |
| 135.925              | -41.97     | 17.96  |
| 163.110              | -46.57     | 22.56  |
| 190.295              | -35.04     | 11.03  |
| 217.480              | -45.66     | 21.65  |
| 244.665              | -42.95     | 18.94  |
| 271.850              | -47.96     | 23.95  |

\* Indicates Noise Floor

**Result: Meets Requirements**

## CONDUCTED SPURIOUS EMISSIONS

Test Data: CH 40 - Spurious Emission Measurement Table

| Power Output | dBm   | Watts | Limit (dBc) |
|--------------|-------|-------|-------------|
|              | 35.88 | 3.87  | 60          |

| Frequency            | Peak (dBm) | Margin |
|----------------------|------------|--------|
| (fundamental) 27.405 | 0.00       | 0.00   |
| 54.810               | -24.32     | 0.20   |
| 82.215               | -44.73     | 20.61  |
| 109.620              | -36.82     | 12.70  |
| 137.025              | -41.85     | 17.73  |
| 164.430              | -45.21     | 21.09  |
| 191.835              | -35.18     | 11.06  |
| 219.240              | -49.65     | 25.53  |
| 246.645              | -40.04     | 15.92  |
| 274.050              | -46.75     | 22.63  |

\* Indicates Noise Floor

**Result: Meets Requirements**



## FIELD STRENGTH OF SPURIOUS EMISSIONS

**Rule Parts. No.:** Part 2.1053, 95.979(5)(6)

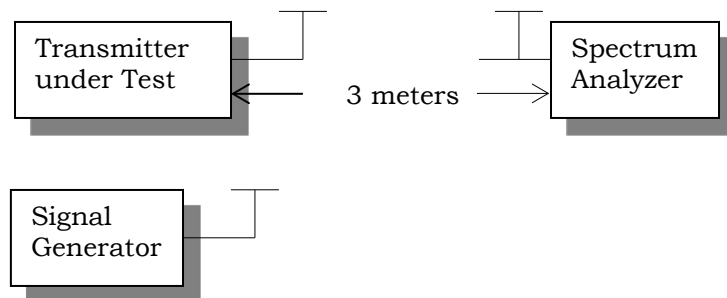
**Requirements:** Emissions must be attenuated by at least the following below the output of the transmitter.

At least  $53 + 10 \log(P)$  dBc on any frequency removed from the center of the authorized bandwidth by more than 250%. At least 60dB on any harmonic frequency.

### METHOD OF MEASUREMENT

The tabulated data shows the results of the radiated field strength emissions test. The spectrum was scanned from 9 KHz to at least the tenth harmonic of the fundamental. This test was conducted per TIA-603 E using the substitution method.

#### Test Setup Diagram:



## FIELD STRENGTH OF SPURIOUS EMISSIONS

### Test Data: Spurious Emission Measurement Table

Note: The highest 6 emissions are shown above. Emissions > 20 dB under the limit are not required to be reported.

| Power Output   |                        |                  | Limit     |             |
|----------------|------------------------|------------------|-----------|-------------|
| dBm            | Watts                  |                  | dBc       | dBm         |
| 36.01          | 3.99                   |                  | 59.01     | -23.00      |
| Tuned Freq MHz | Emission Frequency MHz | Antenna Polarity | ERP (dBm) | Margin (dB) |
| 26.97          | 53.90                  | V                | -43.742   | 20.74       |
| 26.97          | 53.90                  | H                | -52.632   | 29.63       |
| 26.97          | 80.90                  | H                | -52.832   | 29.83       |
| 26.97          | 80.90                  | V                | -52.892   | 29.89       |
| 26.97          | 107.90                 | V                | -58.896   | 35.90       |
| 26.97          | 107.90                 | H                | -56.456   | 33.46       |
| 26.97          | 134.90                 | H                | -48.983   | 25.98       |
| 26.97          | 134.90                 | V                | -51.923   | 28.92       |
| 26.97          | 161.80                 | V                | -53.225   | 30.22       |
| 26.97          | 161.80                 | H                | -49.775   | 26.77       |
| 26.97          | 188.80                 | H                | -53.471   | 30.47       |
| 26.97          | 188.80                 | V                | -57.121   | 34.12       |
| 26.97          | 216.00                 | H                | -64.725   | 41.73       |
| 26.97          | 216.00                 | V                | -53.185   | 30.19       |
| 26.97          | 243.00                 | V                | -68.731   | 45.73       |
| 26.97          | 243.00                 | H                | -57.421   | 34.42       |
| 26.97          | 270.00                 | V                | -57.297   | 34.30       |
| 26.97          | 270.00                 | H                | -56.087   | 33.09       |

**Result: Meets Requirements**

## FIELD STRENGTH OF SPURIOUS EMISSIONS

### Test Data: Spurious Emission Measurement Table

Note: The highest 6 emissions are shown above. Emissions > 20 dB under the limit are not required to be reported.

| dBm            | Watts                  |                  | dBc       | dBm         |
|----------------|------------------------|------------------|-----------|-------------|
| 36.01          | 3.99                   |                  | 59.01     | -23.00      |
| Tuned Freq MHz | Emission Frequency MHz | Antenna Polarity | ERP (dBm) | Margin (dB) |
| 27.18          | 54.40                  | H                | -49.578   | 26.58       |
| 27.18          | 54.40                  | V                | -44.598   | 21.60       |
| 27.18          | 81.50                  | V                | -52.148   | 29.15       |
| 27.18          | 81.50                  | H                | -52.578   | 29.58       |
| 27.18          | 108.70                 | V                | -55.262   | 32.26       |
| 27.18          | 108.70                 | H                | -64.132   | 41.13       |
| 27.18          | 135.90                 | H                | -49.548   | 26.55       |
| 27.18          | 135.90                 | V                | -56.678   | 33.68       |
| 27.18          | 163.10                 | V                | -56.056   | 33.06       |
| 27.18          | 163.10                 | H                | -51.826   | 28.83       |
| 27.18          | 190.30                 | H                | -53.746   | 30.75       |
| 27.18          | 190.30                 | V                | -53.306   | 30.31       |
| 27.18          | 217.00                 | V                | -66.618   | 43.62       |
| 27.18          | 217.00                 | H                | -54.668   | 31.67       |
| 27.18          | 245.00                 | H                | -55.227   | 32.23       |
| 27.18          | 245.00                 | V                | -62.297   | 39.30       |

**Result: Meets Requirements**

## FIELD STRENGTH OF SPURIOUS EMISSIONS

### Test Data: Spurious Emission Measurement Table

Note: The highest 6 emissions are shown above. Emissions > 20 dB under the limit are not required to be reported.

| Power Output   |                        |                  | Limit     |             |
|----------------|------------------------|------------------|-----------|-------------|
| dBm            | Watts                  |                  | dBc       | dBm         |
| 36.01          | 3.99                   |                  | 59.01     | -23.00      |
| Tuned Freq MHz | Emission Frequency MHz | Antenna Polarity | ERP (dBm) | Margin (dB) |
| 27.40          | 54.80                  | V                | -55.864   | 32.86       |
| 27.40          | 54.80                  | H                | -54.604   | 31.60       |
| 27.40          | 82.20                  | H                | -52.984   | 29.98       |
| 27.40          | 82.20                  | V                | -57.144   | 34.14       |
| 27.40          | 109.60                 | V                | -62.039   | 39.04       |
| 27.40          | 109.60                 | H                | -60.529   | 37.53       |
| 27.40          | 137.00                 | H                | -59.702   | 36.70       |
| 27.40          | 137.00                 | V                | -54.952   | 31.95       |
| 27.40          | 164.40                 | V                | -56.546   | 33.55       |
| 27.40          | 164.40                 | H                | -52.726   | 29.73       |
| 27.40          | 191.80                 | H                | -53.102   | 30.10       |
| 27.40          | 191.80                 | V                | -52.322   | 29.32       |
| 27.40          | 219.00                 | H                | -52.694   | 29.69       |
| 27.40          | 219.00                 | V                | -68.294   | 45.29       |
| 27.40          | 247.00                 | V                | -68.923   | 45.92       |
| 27.40          | 247.00                 | H                | -54.703   | 31.70       |

**Result: Meets Requirements**

## Statement of Measurement Uncertainty

The data and results referenced in this document are true and accurate. The measurement uncertainty was calculated for all measurements listed in this test report according To CISPR 16-4 or ENTR 100-028 Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: “Uncertainty in EMC Measurements” and is documented in the Timco Engineering, Inc. quality system according to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Timco Engineering, Inc. is reported:

| Test Items                                                            | Measurement Uncertainty | Notes |
|-----------------------------------------------------------------------|-------------------------|-------|
| RF Frequency Accuracy                                                 | $\pm 49.5$ Hz           | (1)   |
| RF Conducted Power                                                    | $\pm 0.93$ dB           | (1)   |
| Conducted spurious emission of transmitter valid up to 40GHz          | $\pm 1.86$ dB           |       |
| Occupied Bandwidth                                                    | $\pm 2.65$ %            |       |
| Audio Frequency Response                                              | $\pm 1.86$ dB           |       |
| Modulation limiting                                                   | $\pm 1.88$ %            |       |
| Radiated RF Power                                                     | $\pm 1.4$ dB            |       |
| Maximum frequency deviation:<br>Within 300 Hz and 6kHz of audio freq. | $\pm 1.88$ %            |       |
| Within 6kHz and 25kHz of audio Freq.                                  | $\pm 2.04$ %            |       |
| Rad Emissions Sub Meth up to 26.5GHz                                  | $\pm 2.14$ dB           |       |
| Rad Emissions Sub Meth up to 18-40 GHz                                | $\pm 2.04$ %            |       |
| Adjacent channel power                                                | $\pm 1.47$ dB           | (1)   |
| Intermodulation - Tx                                                  | $\pm 2.07$ dB           |       |
| Noise Figure                                                          | $\pm 1.00$ dB           |       |
| Transient Frequency Response                                          | $\pm 1.88$ %            |       |
| Temperature                                                           | $\pm 1.0^{\circ}$ C     | (1)   |
| Humidity                                                              | $\pm 5.0$ %             |       |
| Radiated Emissions to 6.0GHz                                          | $\pm 4.4$ dB            |       |
| Power line conducted emissions                                        | $\pm 3.9$ dB            |       |

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=1.96$ .

## EQUIPMENT LIST

| Device                                             | Manufacturer       | Model                                 | Serial Number                                               | Cal / Char Date | Due Date |
|----------------------------------------------------|--------------------|---------------------------------------|-------------------------------------------------------------|-----------------|----------|
| Coaxial Cable -<br>BMBM-0065-01 Black<br>DC-2G     | Belden             |                                       | BMBM-<br>0065-01                                            | 07/18/16        | 07/18/18 |
| Antenna: Biconical<br>1096                         | Eaton              | 94455-1                               | 1096                                                        | 08/01/17        | 08/01/19 |
| Antenna: Log-Periodic<br>1122                      | Electro-Metrics    | LPA-25                                | 1122                                                        | 07/26/17        | 07/26/19 |
| Coaxial Cable -<br>Chamber 3 cable set<br>(backup) | Micro-Coax         | Chamber<br>3 cable<br>set<br>(backup) | KMKM-<br>0244-02 ;<br>KMKM-<br>0670-01;<br>KFKF-<br>0197-00 | N/A             | N/A      |
| CHAMBER                                            | Panashield         | 3M                                    | N/A                                                         | 04/25/16        | 05/01/18 |
| Antenna: Double-<br>Ridged Horn/ETS<br>Horn 2      | ETS-Lindgren       | 3117                                  | 00041534                                                    | 03/01/17        | 03/01/19 |
| Software: Field<br>Strength Program                | Timco              | N/A                                   | Version<br>4.10.7.0                                         | N/A             | N/A      |
| EMI Test Receiver R &<br>S ESU 40 Chamber          | Rohde &<br>Schwarz | ESU 40                                | 100320                                                      | 04/01/16        | 04/01/19 |
| Attenuator N 30dB<br>100W DC-6G                    | Pasternack         | PE7214-<br>30                         | #109                                                        | 05/24/17        | 05/24/19 |
| Attenuator BNC 10dB<br>DC-2G                       | MiniCircuits       | HAT-10+                               | #54                                                         | 07/14/17        | 07/14/19 |
| Bore-sight Antenna<br>Positioning Tower            | Sunol Sciences     | TLT2                                  | N/A                                                         | N/A             | N/A      |
| Tuneable Notch Filter<br>15-30 MHz                 | Eagle              | TNF-200                               | 15-30 MHz                                                   | 11/19/17        | 11/19/19 |

### \*EMI RECEIVER SOFTWARE VERSION

The receiver firmware used was version 4.43 Service Pack 3

## END OF REPORT