



# RF Exposure Evaluation Report

|                             |                                                                        |
|-----------------------------|------------------------------------------------------------------------|
| <b>APPLICANT</b>            | WISYCOM SRL                                                            |
| <b>ADDRESS</b>              | VIA SPIN, 156<br>ROMANO D'EZZELINO (VI) 36060 ITALY                    |
| <b>FCC ID</b>               | POUMTH400USX                                                           |
| <b>IC</b>                   | 1196A-MTH400USX                                                        |
| <b>MODEL NUMBER</b>         | MTH400-USX                                                             |
| <b>PRODUCT DESCRIPTION</b>  | WIDEBAND HANDHELD TRANSMITTER                                          |
| <b>DATE SAMPLE RECEIVED</b> | 08/23/2018                                                             |
| <b>FINAL TEST DATE</b>      | 08/23/2018                                                             |
| <b>PREPARED BY</b>          | Franklin Rose                                                          |
| <b>TEST RESULTS</b>         | <input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL |

| Report Number               | Report Version | Description   | Issue Date |
|-----------------------------|----------------|---------------|------------|
| 1335BUT18<br>MPE_TestReport | Rev1           | Initial Issue | 11/01/2018 |

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

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## GENERAL REMARKS

### 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**

### Prepared by:



|                       |                                                         |
|-----------------------|---------------------------------------------------------|
| <b>Name and Title</b> | Franklin Rose, Project Manager / EMC Testing Technician |
| <b>Date</b>           | 11/01/2018                                              |

Applicant: WISYCOM SRL  
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Report: 1335BUT18 MPE\_TestReport\_Rev1

## GENERAL INFORMATION

|                                |                                                                                              |
|--------------------------------|----------------------------------------------------------------------------------------------|
| <b>EUT Description</b>         | WIDEBAND HANDHELD TRANSMITTER                                                                |
| <b>Model Number</b>            | MTH400-USX                                                                                   |
| <b>EUT Power Source</b>        | <input type="checkbox"/> 110–120Vac/50– 60Hz                                                 |
|                                | <input type="checkbox"/> DC Power (12.0 V)                                                   |
|                                | <input checked="" 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 type="checkbox"/> Mobile                                                              |
|                                | <input checked="" type="checkbox"/> Portable                                                 |
| <b>Antenna Connector</b>       | UFL                                                                                          |
| <b>Test Conditions</b>         | The temperature was 26°C<br>Relative humidity of 50%.                                        |
| <b>Modification to the EUT</b> | None                                                                                         |
| <b>Applicable Standards</b>    | FCC CFR 47 Part 2.1091, RSS-102 (i5)                                                         |
| <b>Test Facility</b>           | Timco Engineering Inc. at 849 NW State Road 45 Newberry, FL 32669 USA. Designation #: US1070 |

**Note:** This evaluation is in regard to the Part 15.236 operation of this device.

## ANTENNA INFORMATION

| Manufacturer Provides Antenna | Type                    | Max Gain (dBi) |
|-------------------------------|-------------------------|----------------|
| YES                           | ¼ Whip w/ UFL Connector | 0              |

## MPE CALCULATION

The minimum separation distance is calculated as follows:

$$E(V/m) = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power density: } P_d(mW/cm^2) = \frac{E^2}{3770}$$

1. **FCC 2.1091: General Uncontrolled Exposure Environment:** The limit for General Uncontrolled Exposure Environment is calculated as shown in 1.1310, Table 1.

| Variable                    | Value                    |
|-----------------------------|--------------------------|
| Frequency (MHz)             | 614.075                  |
| Max Power                   | 11.4 mW                  |
| Duty Cycle (at full power)  | 100%                     |
| Max Antenna Gain            | 0.0 dBi                  |
| Coax Loss                   | 0.0 dB                   |
| Power Density               | 0.002 mW/cm <sup>2</sup> |
| Minimum Separation Distance | 20 cm                    |

2. **Canada RSS-102: General Uncontrolled Exposure Environment:** The limit for General Uncontrolled Exposure Environment is calculated as shown in RSS-102.

| Variable                    | Value                  |
|-----------------------------|------------------------|
| Frequency (MHz)             | 614.075                |
| Max Power                   | 11.4 mW                |
| Duty Cycle (at full power)  | 100%                   |
| Max Antenna Gain            | 0.0 dBi                |
| Coax Loss                   | 0.0 dB                 |
| Power Density               | 0.023 W/m <sup>2</sup> |
| Minimum Separation Distance | 20 cm                  |

## SAR EXCLUSION: FCC

**FCC Rulepart:** KDB 447498 D01 General RF Exposure Guidance v05r02, s 4.3.1

$$\text{SAR Exclusion} = (\text{P mW} / \text{Separation Distance mm}) * (\text{Frequency GHz})^{0.5}$$

| Variable                         | Value        |
|----------------------------------|--------------|
| Physical Separation Distance     | 5 mm         |
| Max Power                        | 11.4 mW      |
| Highest Frequency (GHz)          | 0.662925 GHz |
| SAR Exclusion Calculation Result | 1.86         |
| SAR Exclusion Limit              | 3.0          |

**Result: EXCLUDED**

## SAR EXCLUSION: IC

Canada Rulepart: RSS-102

**SAR Exemption Table:** Linear interpolation is used to arrive at limit between specified values.

| Frequency (MHz) | Exemption Limits (mW) Per Separation Distance |       |       |       |       |       |       |       |       |        |
|-----------------|-----------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
|                 | ≤5 mm                                         | 10 mm | 15 mm | 20 mm | 25 mm | 30 mm | 35 mm | 40 mm | 45 mm | ≥50 mm |
| ≤300            | 71                                            | 101   | 132   | 162   | 193   | 223   | 254   | 284   | 315   | 345    |
| 450             | 52                                            | 70    | 88    | 106   | 123   | 141   | 159   | 177   | 195   | 213    |
| 835             | 17                                            | 30    | 42    | 55    | 67    | 80    | 92    | 105   | 117   | 130    |
| 1900            | 7                                             | 10    | 18    | 34    | 60    | 99    | 153   | 225   | 316   | 431    |
| 2450            | 4                                             | 7     | 15    | 30    | 52    | 83    | 123   | 173   | 235   | 309    |
| 3500            | 2                                             | 6     | 16    | 32    | 55    | 86    | 124   | 170   | 225   | 290    |
| 5800            | 1                                             | 6     | 15    | 27    | 41    | 56    | 71    | 85    | 97    | 106    |

| Table Parameters            | Table Values |
|-----------------------------|--------------|
| Lower Frequency (in Table)  | 450 MHz      |
| Exclusion Limit (in Table)  | 52 mW        |
| Higher Frequency (in Table) | 835 MHz      |
| Exclusion Limit (in Table)  | 17 mW        |

| EUT Parameters                   | Value       |
|----------------------------------|-------------|
| Separation Distance              | ≤5 mm       |
| Highest Frequency (MHz)          | 662.975 MHz |
| Power Output (mW)                | 11.4 mW     |
| SAR Exclusion Calculation Result | 33 mW       |

**Result: EXCLUDED**

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