



## FCC Part 74H C2PC Test Report

|                      |                                                                        |
|----------------------|------------------------------------------------------------------------|
| APPLICANT            | ZAXCOM, INC.                                                           |
|                      | 230 WEST PARKWAY, UNIT 9<br>POMPTON PLAINS N.J. 07444 USA              |
| FCC ID               | PR6ZMT                                                                 |
| MODEL NUMBER         | ZMT3.5, ZMT3.6                                                         |
| PRODUCT DESCRIPTION  | POCKET TRANSMITTER                                                     |
| STANDARD APPLIED     | CFR 47 Part 74                                                         |
| DATE SAMPLE RECEIVED | 04/23/2018                                                             |
| DATE TESTED          | 08/09/2018                                                             |
| TESTED BY            | Tim Royer                                                              |
| APPROVED BY          | Franklin Rose                                                          |
| TEST RESULTS         | <input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL |

| Report Number      | Report Version | Description                                       | Issue Date |
|--------------------|----------------|---------------------------------------------------|------------|
| 1178UT18TestReport | Rev1           | Initial Issue                                     | 08/09/2018 |
| 1178UT18TestReport | Rev2           | Re-tested PO and<br>adjusted low end<br>frequency | 09/27/2018 |
| 1178UT18TestReport | Rev3           | Updated current version<br>of KDB's               | 10/02/2018 |

**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**

**Tested by:**



|                       |                                                   |
|-----------------------|---------------------------------------------------|
| <b>Name and Title</b> | Tim Royer, Project Manager / EMC Testing Engineer |
| <b>Date</b>           | 08/08/2018                                        |

**Reviewed and Approved by:**



|                       |                                                         |
|-----------------------|---------------------------------------------------------|
| <b>Name and Title</b> | Franklin Rose, Project Manager / EMC Testing Technician |
| <b>Date</b>           | 08/10/2018                                              |

## GENERAL INFORMATION

|                                |                                                                                                                                                      |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EUT Description</b>         | BELTPACK WIRELESS MICROPHONE                                                                                                                         |
| <b>FCC ID</b>                  | PR6ZMT                                                                                                                                               |
| <b>Model Number</b>            | ZMT3.5, ZMT3.6                                                                                                                                       |
| <b>Operating Frequency</b>     | Model ZMT3.5: 470.1 – 554.0<br>Model ZMT3.6: 512.0 – 607.9 MHz                                                                                       |
| <b>Test Frequencies</b>        | Model ZMT3.5: 470.1, 482.1<br>Model ZMT3.6: 512.1, 607.9                                                                                             |
| <b>EUT Power Source</b>        | <input type="checkbox"/> 110–120Vac/50– 60Hz                                                                                                         |
|                                | <input type="checkbox"/> DC Power                                                                                                                    |
|                                | <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>       | BNC                                                                                                                                                  |
| <b>Test Conditions</b>         | The temperature was 26°C<br>Relative humidity of 50%.                                                                                                |
| <b>Modification to the EUT</b> | No Modification to EUT.                                                                                                                              |
| <b>Test Exercise</b>           | The EUT was placed in continuous transmit and was operated in “Test Mode” for digital emissions tests.                                               |
| <b>Applicable Standards</b>    | FCC CFR 47 Part 2, & 74, KDB 971168 D01 V03R01, KDB 206256 D01 v02, ANSI/TIA 603-D:2010, ANSI C63.4 2014, ANSI C63.26 2015, ETSI EN 300-422-1 V1.4.2 |
| <b>Test Facility</b>           | Timco Engineering Inc. at 849 NW State Road 45 Newberry, FL 32669 USA. Designation #: US1070                                                         |

## RESULTS SUMMARY

| FCC Rule Part                                    | Requirement        | Test Item       | Result      |
|--------------------------------------------------|--------------------|-----------------|-------------|
| PART 2.1046(a),<br>74.861(e) (1) (ii), (iii)     | Conducted Power    | RF Power Output | <b>PASS</b> |
| PART 74.861(e)(7), ETSI<br>EN 300-422-1 s. 8.3.2 | Unwanted Emissions | Emission Mask   | <b>PASS</b> |

## MODEL TYPES, SUMMARY

The device is manufactured in two models, the ZMT3.5 and ZMT3.6. The models are electrically identical, and differ only that they have been programmed with different frequency ranges.

## CHANGE(S) TO EUT, SUMMARY

The changes to Part 74 H, specifically in the 600 MHz band have impact on the granted function of this device. In order to comply with the changes outlined in KDB 206256 D01 v02 and KDB 971168 D01 v03r01, this device has been tested to show compliance with the new rulings.

This device's hardware has not been altered; only the software/firmware settings have been changed in order to become compliant with the newly updated rules, as per KDB 206256, D01 v02 sections II and III. For more specific information, please see the updated Operational Description of the device.

Both models of this device previously granted on the following frequency bands:

Date of Grant: 01/23/2017

### **ZMT3.5 & ZMT3.6**

482 – 608 MHz

614 – 697.9 MHz

And only the software has been altered to limit operation to:

### **ZMT3.5**

470.1 – 554

### **ZMT3.6**

512 – 607.9

## RF POWER OUTPUT

**Rule Part No.:** 2.1046(a), 74.861(e) (1) (ii), (iii)

### Requirement:

#### §74.861 Technical requirements.

(e) For low power auxiliary stations operating in the 600 MHz duplex gap and the bands allocated for TV broadcasting, the following technical requirements apply:

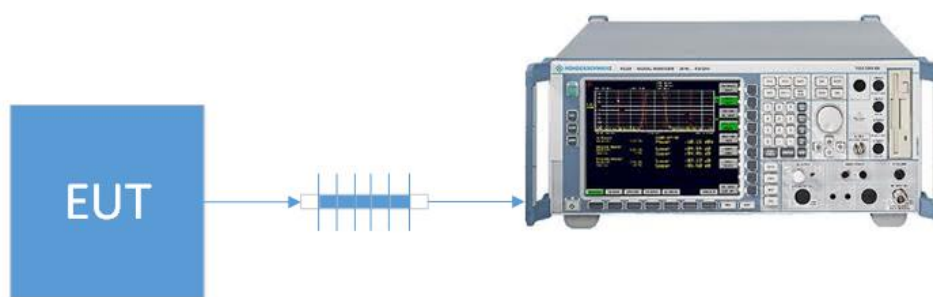
(1) The power may not exceed the following values.

(ii) 470-608 and 614-698: 250 mW conducted power

(iii) 600 MHz duplex gap: 20 mW EIRP

**Procedure:** KDB 971168 D01 Average Power Measurements section 5.2.1

### Setup Diagram:



### Test Data: Mean Output Power Measurement Table

| Tuned Frequency<br>(MHz) | Power Output   |               |                |
|--------------------------|----------------|---------------|----------------|
|                          | Level<br>(dBm) | Level<br>(mW) | Margin<br>(mW) |
| 470.1000                 | 15.49          | 35.4          | 214.6          |
| 482.0000                 | 15.06          | 32.1          | 217.9          |
| 512.0000                 | 15.41          | 34.8          | 215.2          |
| 607.9000                 | 15.30          | 33.9          | 216.1          |

## EMISSION MASK

**Rule Part No.:** FCC CFR 47 PART 74.861(e)(7)

(7) Analog emissions within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in section 8.3.1.2 of the European Telecommunications Institute Standard ETSI EN 300 422-1 v1.4.2 (2011-08), Electromagnetic compatibility and Radio spectrum Matters (ERM); Wireless microphones in the 25 MHz to 3 GHz frequency range; part 1: Technical characteristics and methods of measurement. Digital emissions within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in section 8.3.2.2 (Figure 4) of the European Telecommunications Institute Standard ETSI EN 300 422-1 v1.4.2 (2011-08), Electromagnetic compatibility and Radio spectrum Matters (ERM); Wireless microphones in the 25 MHz to 3 GHz frequency range; part 1: Technical characteristics and methods of measurement. Beyond one megahertz below and above the carrier frequency, emissions shall comply with the limits specified in section 8.4 of ETSI EN 300 422-1 v1.4.2 (2011-08). The requirements of this paragraph (e)(7) shall not apply to applications for certification of equipment in these bands until nine months after release of the Commission's Channel Reassignment Public Notice, as defined in §73.3700(a)(2) of this chapter.

**Requirement:** ETSI EN 300 422-1 Section 8.3.2

- (c) Compliance for emission mask and spurious emission requirements shall be demonstrated using the applicable measurement procedures of ETSI EN 300 422-1. Compliance with the emission limits shall be demonstrated using a RMS Average detector. Emissions shall be investigated up to the 10<sup>th</sup> harmonic of the fundamental. All other technical requirements shall be demonstrated utilizing the procedures specified in ANSI C63.26,<sup>4</sup> as applicable.

## EMISSION MASK

### 8.3.2.2 Limits

The transmitter output spectrum shall be within the mask defined in figure 4. This mask may also be used for analogue.

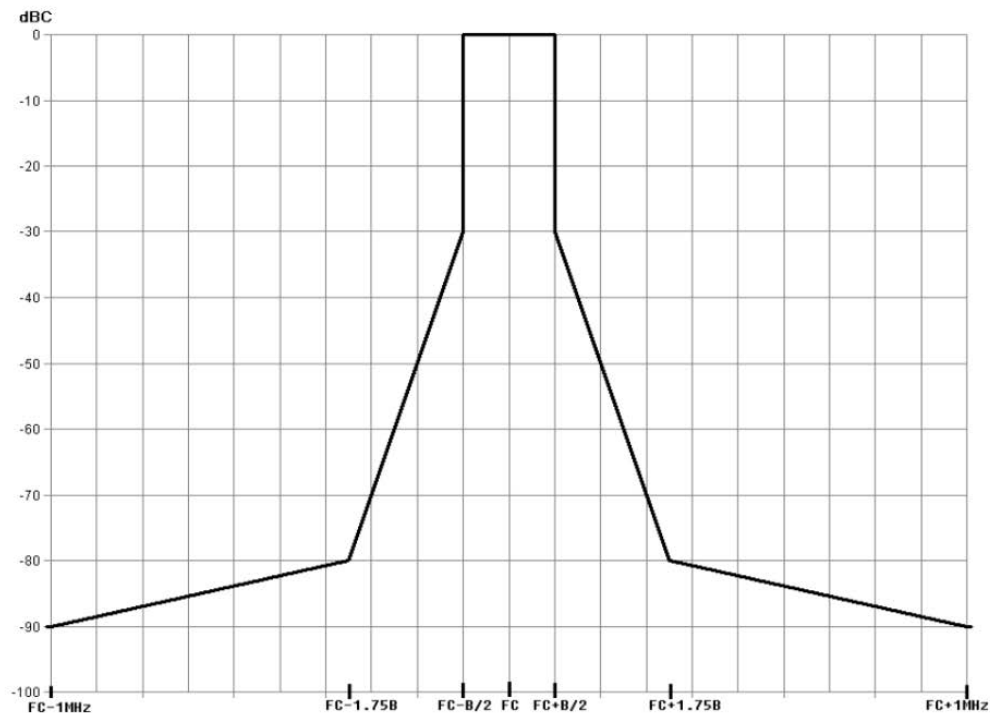
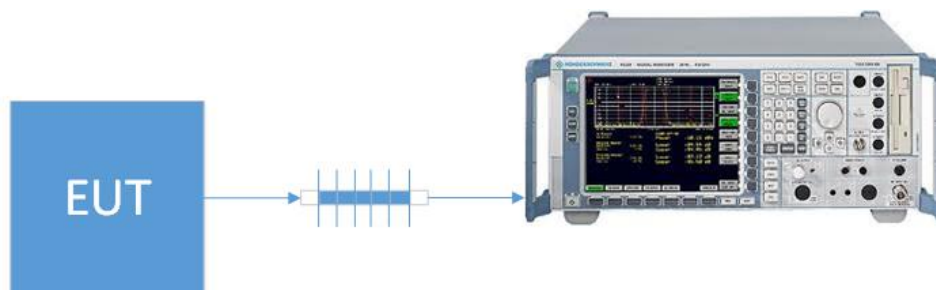


Figure 4: Spectrum mask for digital systems below 1 GHz

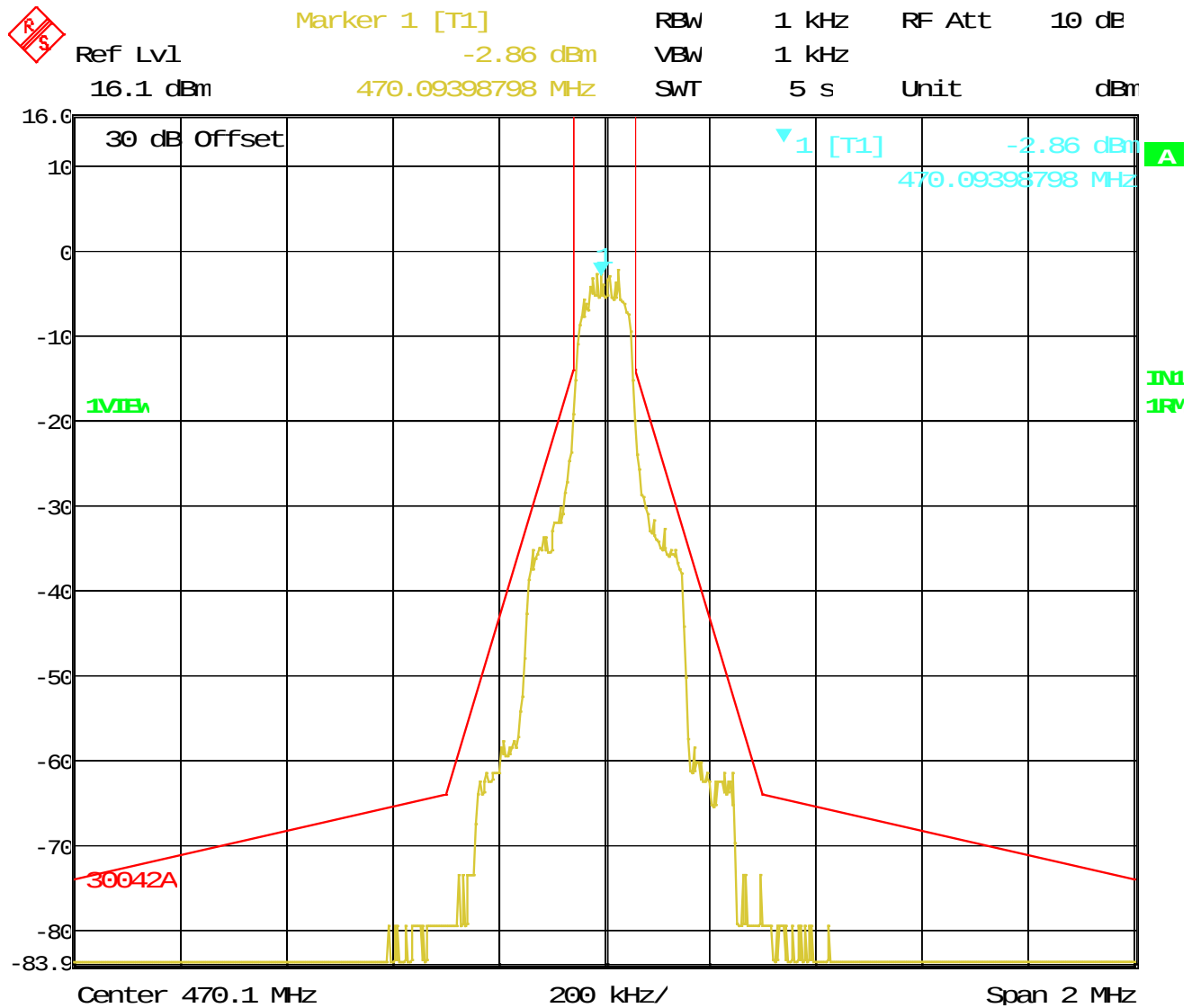
**Procedure:** ETSI EN 300 422-1 s. 8.3.2  
KDB 971168 D01 Spurious Emissions at antenna term section 6  
ANSI C63.26, 5.4.4 (using Test Setup from TIA 603-E 2.2.11, below)

### Setup Diagram:



## EMISSION MASK

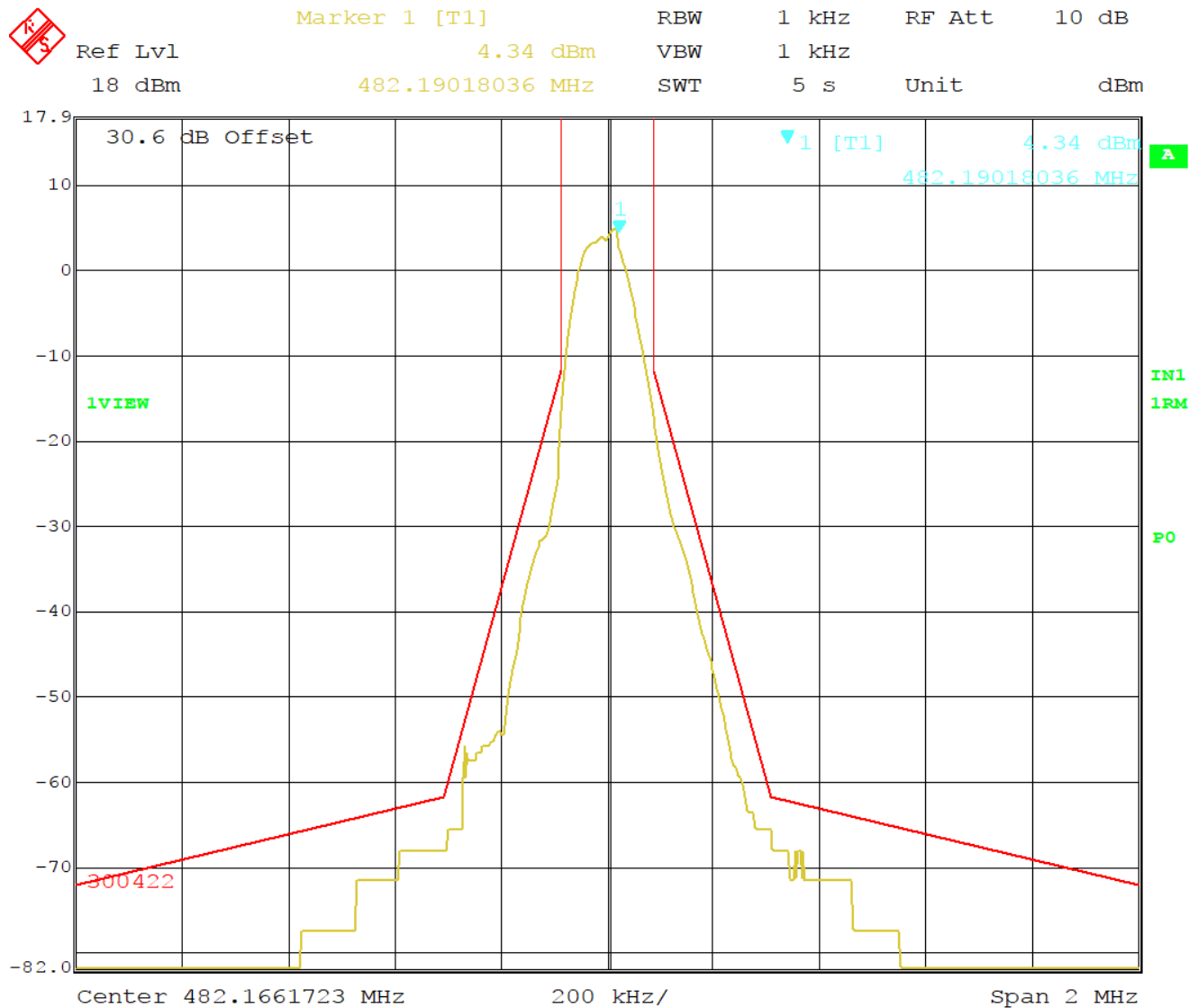
### Test Data: 470.1 MHz Emission Mask Plot



Date: 1.JAN.1997 03:12:36

## EMISSION MASK

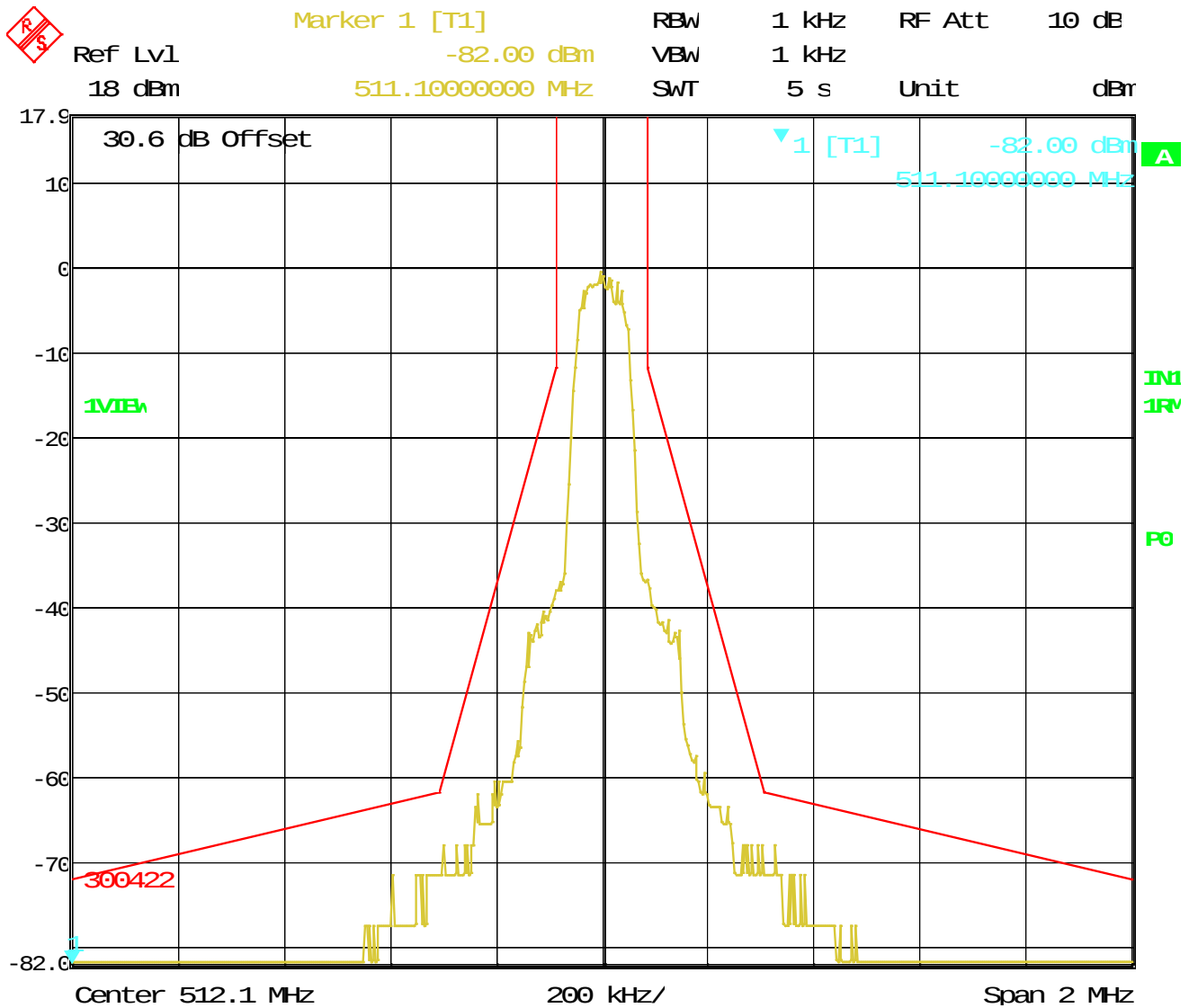
### Test Data: 482.0 MHz Emission Mask Plot



Date: 1.JAN.1997 04:57:37

## EMISSION MASK

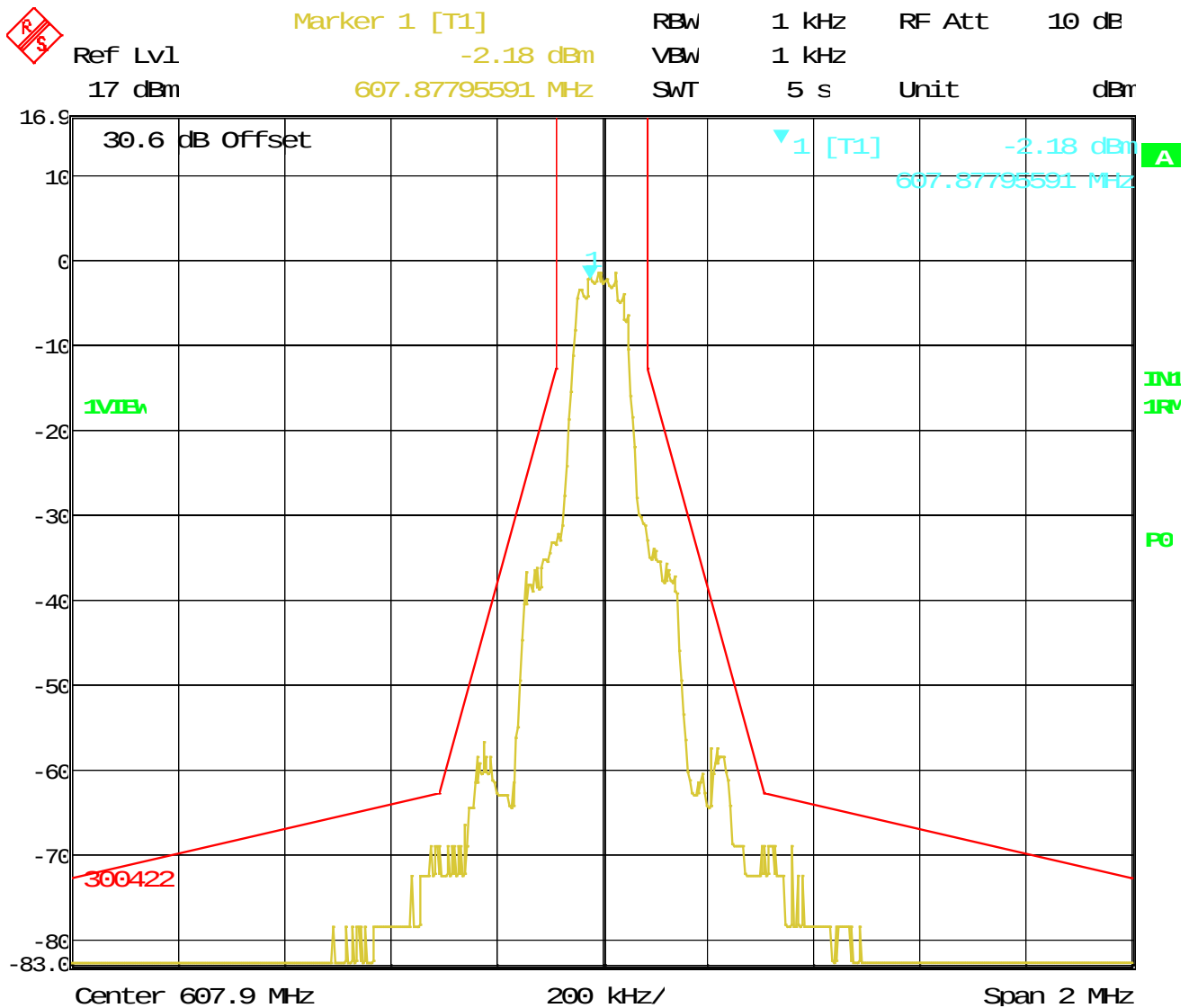
Test Data: 512.0 MHz Emission Mask Plot



Date: 1.JAN.1997 04:58:54

## EMISSION MASK

### Test Data: 607.9 MHz Emission Mask Plot



Date: 1.JAN.1997 05:04:44

## 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           |       |
| Adjacent channel power                                                | $\pm 1.47$ dB           | (1)   |
| Transient Frequency Response                                          | $\pm 1.88$ %            |       |
| Temperature                                                           | $\pm 1.0$ °C            | (1)   |
| Humidity                                                              | $\pm 5.0$ %             |       |

Notes: (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=1.96$ .

## EMC EQUIPMENT LIST

| Device                                      | Manufacturer    | Model   | Serial Number     | Cal/Char Date | Due Date |
|---------------------------------------------|-----------------|---------|-------------------|---------------|----------|
| Sweep/Signal Generator                      | Anritsu         | 68369B  | 985112            | 11/08/17      | 11/08/19 |
| EMI Test Receiver R & S ESIB 40 Screen Room | Rohde & Schwarz | ESIB 40 | 100274            | 08/16/16      | 08/16/18 |
| Tunable Notch Filter 250-850 MHz            | Eagle           | TNF-200 | 250-850 MHz (#19) | 01/19/17      | 11/19/19 |

### \*EMI RECEIVER SOFTWARE VERSION

The receiver firmware used was version 4.43 Service Pack 3

**END OF TEST REPORT**