

## Laboratory Test Report

For the

TPAH5A (400MHz to 470MHz) Handportable Transceiver

Tested In accordance with

FCC 47 CFR Parts 22 and 90

Report Revision: 1  
Issue Date: 20-Apr-2007  
FCC ID: CASTPAH5A

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All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

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## REVISION HISTORY

| Date        | Revision | Comments            |
|-------------|----------|---------------------|
| 20-Apr-2007 | 1        | Initial test report |
|             |          |                     |

## INTRODUCTION

This *Class 2 Permissive Change* report adds Tait Simulcast Modulation (TSM) to the original test report 2097 & 2461, and confirms the radio's performance for Occupied Bandwidth.

Type Approval Testing of the TPAB12-H500A (Serial No 21005850) in accordance with:

FCC CFR 47 Parts 22 & 90

## REPORT PREPARED FOR

Tait Electronics Ltd  
PO Box 1645  
558 Wairakei Rd  
Christchurch  
New Zealand

## DESCRIPTION OF SAMPLE

|                 |                          |
|-----------------|--------------------------|
| Equipment:      | Handportable Transceiver |
| Type:           | TPAH5A                   |
| Product code:   | TPAB12-H500A             |
| Serial Numbers: | 21005850                 |
| Quantity:       | 1                        |

## STATEMENT OF COMPLIANCE

The TPAB12-H500A Handportable transceiver as tested in this report was found to conform to the following standards:

### **FCC CFR 47 Parts 22 & 90**

## TEST CONDITIONS

All testing was performed at the following conditions.

|                       |                     |
|-----------------------|---------------------|
| Ambient Temperature   | 15°C → 30°C         |
| Relative Humidity     | 20% → 75%           |
| Standard Test Voltage | 7.5 V <sub>DC</sub> |

## NECESSARY BANDWIDTH AND EMISSION DESIGNATORS

SPECIFICATION: FCC 47 CFR 2.202

The Necessary Bandwidth is the minimum value of the occupied bandwidth sufficient to ensure the transmission of information at the rate and with the quality required for the system employed.

### 99 % Bandwidth Measurement Results

|                 |       |            |
|-----------------|-------|------------|
| 425.1 MHz       |       |            |
| Channel Spacing | Power | 99% BW TSM |
| 12.5 kHz        | 4W    | 6.08 kHz   |
| 12.5 kHz        | 1W    | 6.05 kHz   |

## TEST RESULTS

### OCCUPIED BANDWIDTH

SPECIFICATION: FCC 47 CFR 2.1049 (c)

GUIDE: TIA/EIA-603C 2.2.11

#### MEASUREMENT PROCEDURE:

1. Refer Annex A for Equipment Set up.
2. For analogue measurements: The EUT was modulated by a 2500Hz tone at an input level 16dB above a level that produced 50% deviation. The input level was established at the frequency of maximum response of the audio modulating circuit.  
For Data measurements: The EUT was modulated with an internally generated pseudo random bit sequence at the appropriate Baud rates.
3. The Occupied Bandwidth was measured on the Spectrum Analyser, with bandwidth settings as follows.

Emission Mask D – Resolution Bandwidth = 100Hz, Video Bandwidth = 1 kHz

#### MEASUREMENT RESULTS:

See the plots on the following pages for 12.5 kHz channel spacing.

LIMIT CLAUSE: FCC 47 CFR 90.210

#### EMISSION MASKS

Emission Mask D                      12.5 kHz Channel Spacing                      TSM

#### DATA SPEED

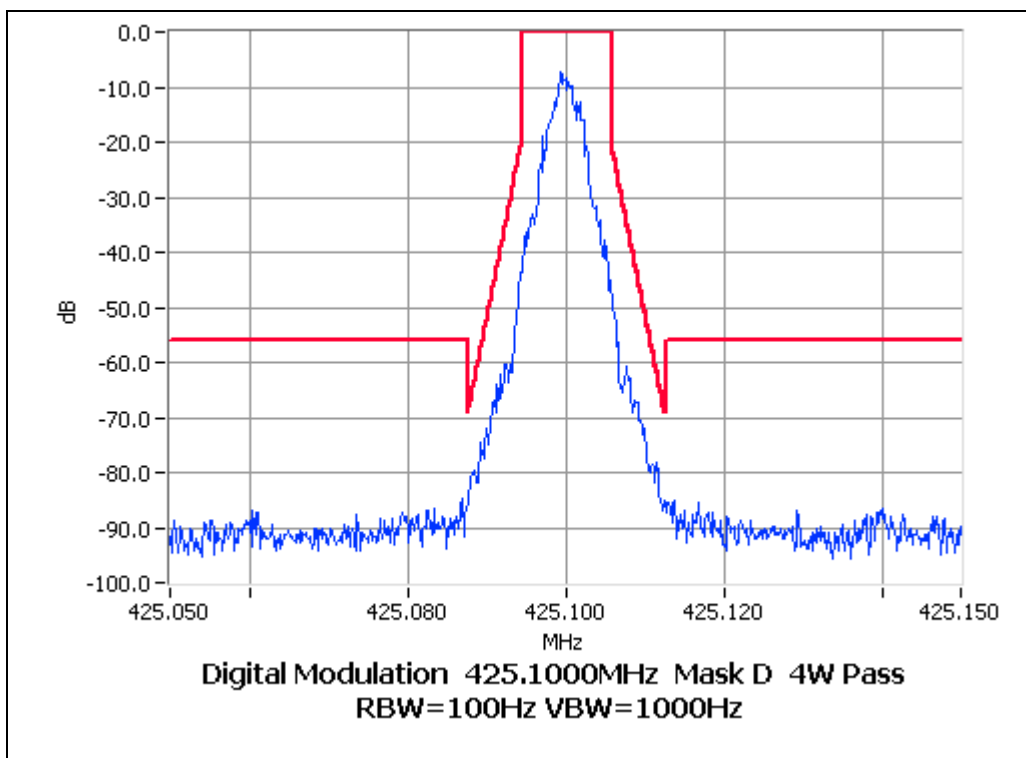
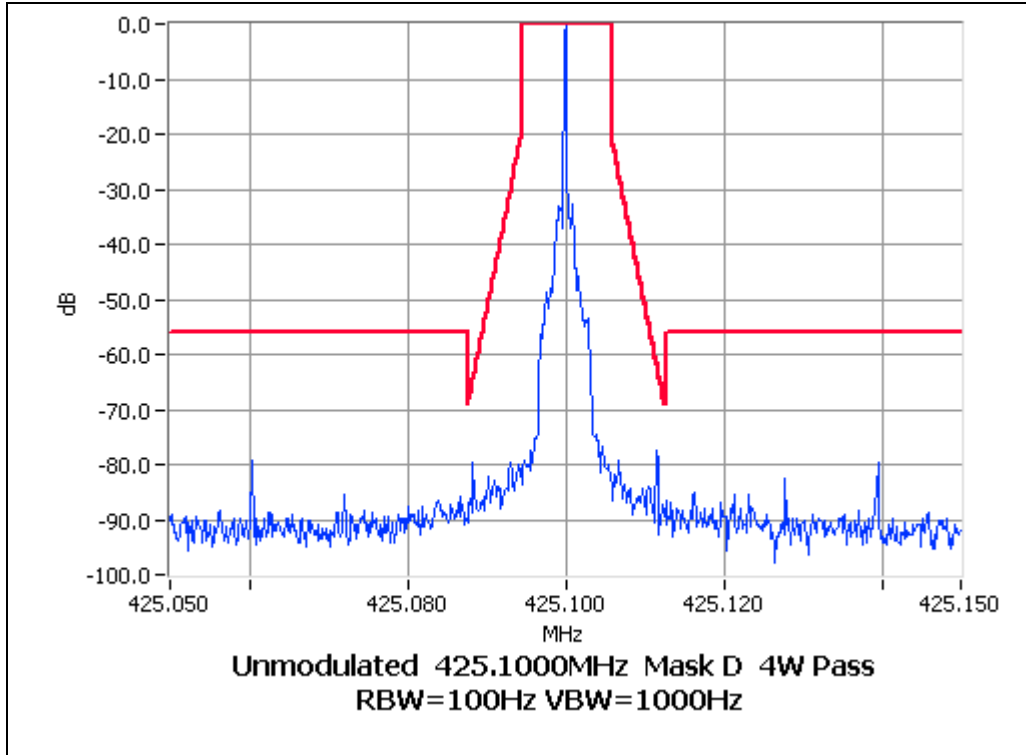
TSM                      9600 bps                      12.5 kHz Channel Spacing

OCCUPIED BANDWIDTH

TSM

SPECIFICATION: FCC CFR 2.1049 (c)

Tx FREQUENCY: 425.1 MHz 4 W 12.5 kHz Channel Spacing

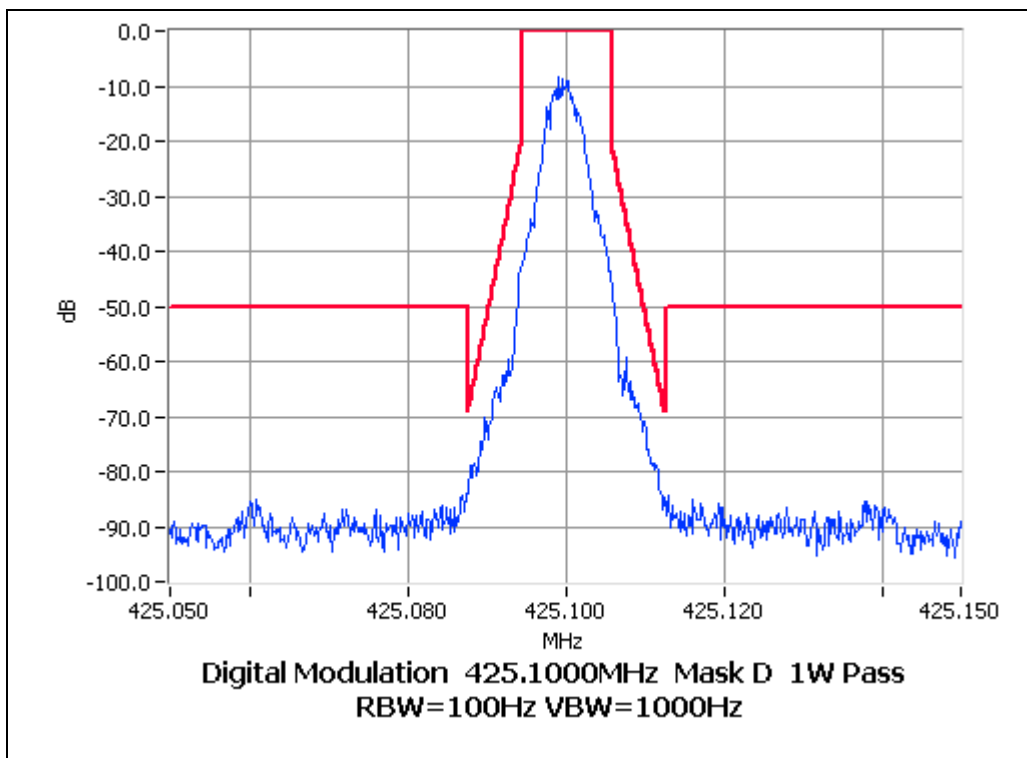
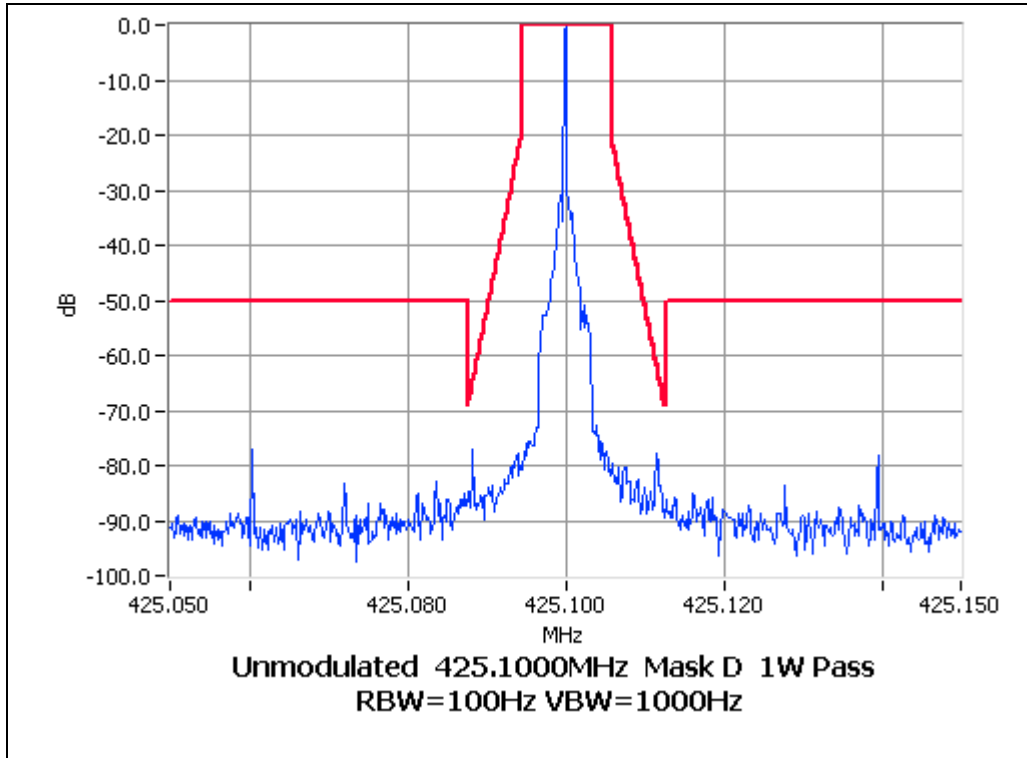


OCCUPIED BANDWIDTH

TSM

SPECIFICATION: FCC CFR 2.1049 (c)

Tx FREQUENCY: 425.1 MHz 1 W 12.5 kHz Channel Spacing





**TELTEST Laboratories**  
Tait Electronics Limited  
Report Number 2621

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**TEST EQUIPMENT USED**

| <b>No#</b> | <b>Equipment</b>   | <b>Manufacturer</b> | <b>Model No</b>           | <b>Serial No#</b> | <b>Tait ID</b> | <b>Cal Due</b> |
|------------|--------------------|---------------------|---------------------------|-------------------|----------------|----------------|
| 21         | Power Supply       | Rohde & Schwarz     | NGS M32/10<br>192.0810.31 | Fnr 434           | E3556          | 16-Oct-07      |
| 66         | RF Attenuator 25W  | Weinschel           | 33-20-33                  | BD5871            | E3673          | 31-Oct-07      |
| 123        | Spectrum Analyser  | Agilent             | E4445A                    | MY42510072        | E4139          | 04-Jul-07      |
| 137        | 1m Multiflex Cable | Suhner              | MF141                     | TT007             | E4443          | 30-Oct-07      |
| 138        | 1m Multiflex Cable | Suhner              | MF141                     | TT086             | E4444          | 30-Oct-07      |

## ANNEX A

All other testing is performed using the Teltest Radio **EVAL**uation system (TREVA), which is configured as shown below. The Spectrum Analyser is connected to the EUT via the attenuator network for Conducted Emissions testing, and Occupied Bandwidth.

