

Laboratory Test Report

For the

TMAB1F (136 MHz to 174 MHz) Mobile Transceiver

Tested In accordance with

FCC 47 CFR Parts 22 and 90

Report Revision: 1
Issue Date: 19-June-2007
FCC ID: CASTMAB1F

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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
19-June-2007	1	Initial test report

INTRODUCTION

This *Class 2 Permissive Change* report adds Tait Simulcast Modulation (TSM) to the original test report 2075, and confirms the radio's performance for SIDEBAND SPECTRUM.

Type Approval Testing of the TMAB34-B100B (Serial No 19256184)
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: Mobile Transceiver
Type: TMAB1F
Product code: TMAB34-B100B
Serial Numbers: 19256184
Quantity: 1

EUT SW Details:

Type	Code and Version	Status	Target Hardware	NTID
Boot Code	QCA2B_std_1.01.00.0001	OK	Head	2
Hardware ID	TMAC40-0000_0004	OK	Head	2
Radio Application	QCA2F_A00_4.00.01.0005	OK	Head	2
FPGA Image	QCA2G_std_1.06.00.0001	OK	Head	2
Hardware ID	TMAB34-B100_0106	OK	Torso	1
Boot Code	QMA3B_std_1.06.00.0004	OK	Torso	1
DSP	QMA3A_A00_4.00.00.0005	OK	Torso	1
Radio Application	QMA3F_A00_4.00.01.0005	OK	Torso	1
FPGA Image	QMA3G_std_1.07.00.0001	OK	Torso	1

STATEMENT OF COMPLIANCE

The TMAB34-B100B Mobile 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 13.8 V_{DC}

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

155.1 MHz		
Channel Spacing	Power	99% BW TSM
12.5 kHz	50W	6.11 kHz
12.5 kHz	10W	6.10 kHz

Emission Designator: 6K10F1D

TEST RESULTS

SIDEBAND SPECTRUM

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 Data measurements: The EUT was modulated with an internally generated pseudo random bit sequence at the appropriate Baud rates.
3. The sideband spectrum 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

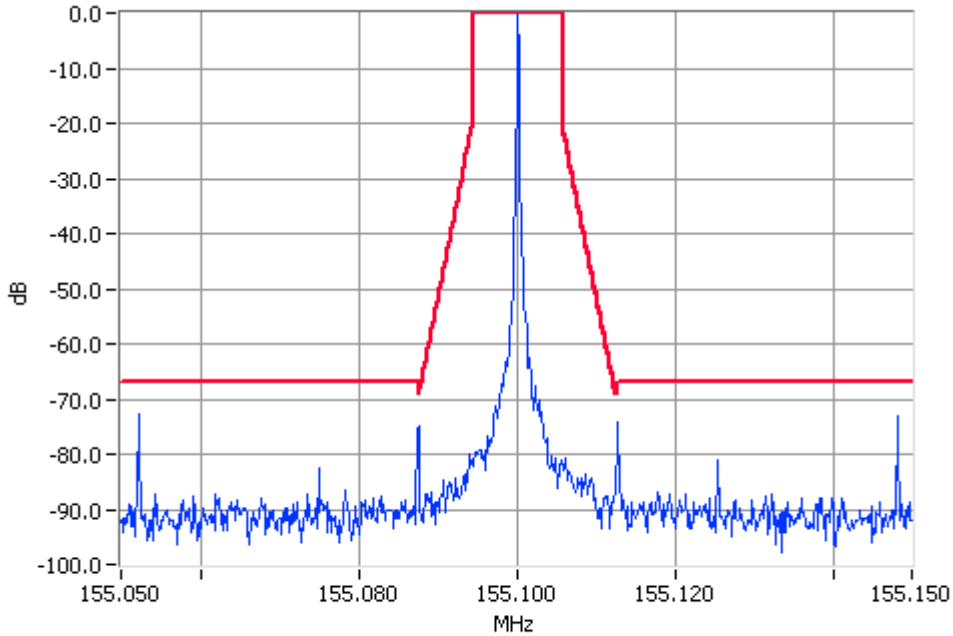
DATA SPEED

9600 bps 12.5 kHz Channel Spacing TSM

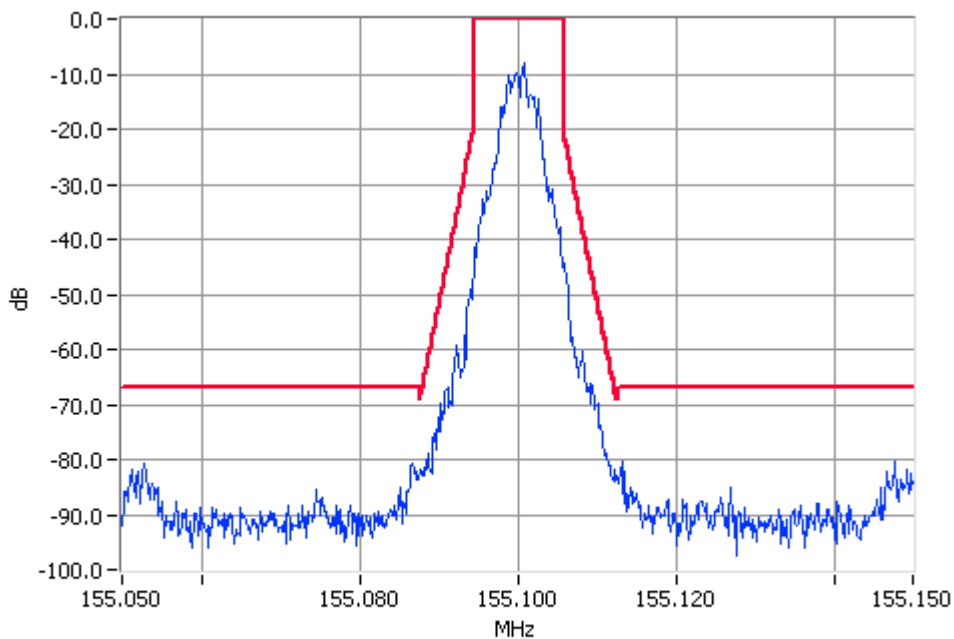
SIDEBAND SPECTRUM

TSM

SPECIFICATION: FCC CFR 2.1049 (c)
Tx FREQUENCY: 155.1 MHz 50 W 12.5 kHz Channel Spacing



Unmodulated 155.1000MHz Mask D 50W Pass
RBW=100Hz VBW=1000Hz



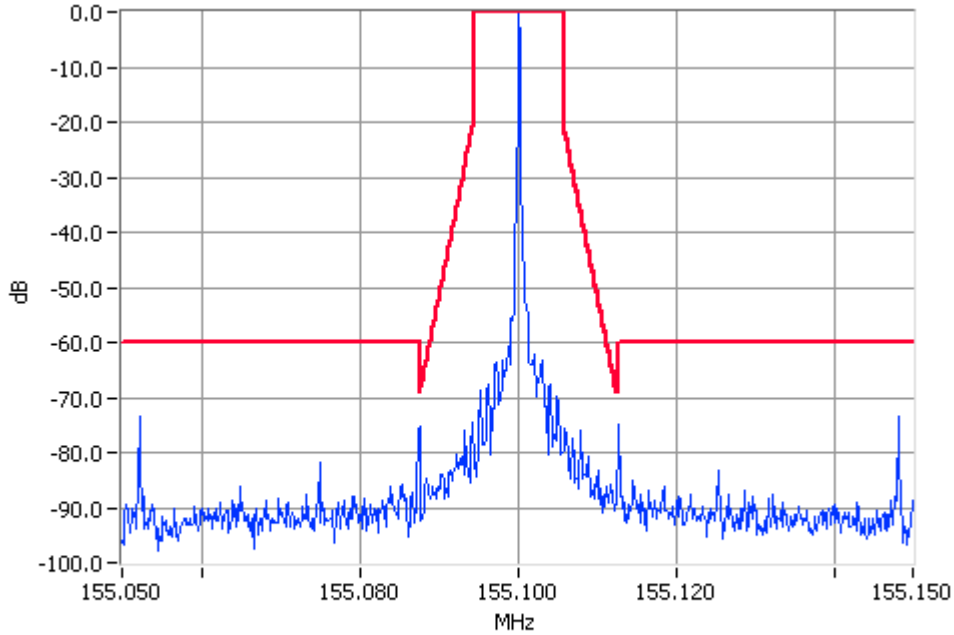
Digital Modulation 155.1000MHz Mask D 50W Pass
RBW=100Hz VBW=1000Hz

SIDEBAND SPECTRUM

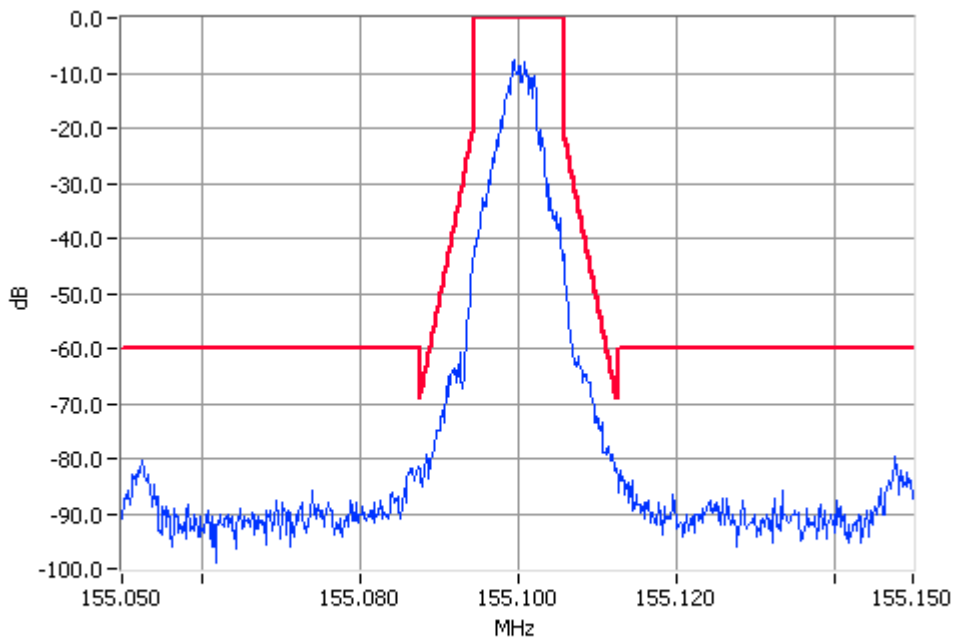
TSM

SPECIFICATION: FCC CFR 2.1049 (c)

Tx FREQUENCY: 155.1 MHz 10 W 12.5 kHz Channel Spacing



Unmodulated 155.1000MHz Mask D 10W Pass
RBW=100Hz VBW=1000Hz



Digital Modulation 155.1000MHz Mask D 10W Pass
RBW=100Hz VBW=1000Hz

TELTEST Laboratories
Tait Electronics Limited
Report Number 2640

TEST EQUIPMENT USED

No#	Equipment	Manufacturer	Model No	Serial No#	Tait ID	Cal Due
20	Power Supply	Hewlett Packard	HP6032A	2441A00412	E3075	21-Nov-07
21	Power Supply	Rohde & Schwarz	NGS M32/10 192.0810.31	Fnr 434	E3556	16-Oct-07
88	Spectrum Analyser	Hewlett Packard	HP8562E	3821A00779	E3715	31-Oct-07
123	Spectrum Analyser	Agilent	E4445A	MY42510072	E4139	4-Jul-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 of TREVA instead of signal generator 3 for the sideband spectrum measurement.

