M. Flom Associates, Inc. - Global Compliance Center
3356 North San Marcos Place, Suite 107, Chandler, Arizona 85225-7176
www.mflom.com general@mflom.com (480) 926-3100, FAX: 926-3598

REVISED SUPPLEMENTAL REPORT
EA97145 Correspondence 15439

for

MOBILES

for

FCC ID: CASTEL0036
Model: T2015-K27-F00

to

FEDERAL COMMUNICATIONS COMMISSION

47 CFR 1.1310 (MPE)
Radiofrequency Radiation Exposure Limits

DATE OF REPORT: September 15, 2000

P.O. 303082

Applicant: Tait Electronics Ltd.
558 Wairakei Rd.
Burnside, Christchurch 8001, NEW ZEALAND

Attention of: RADIO INFRASTRUCTURE DIVISION
Ian MacKay, Project Coordinator
+64 3 358 0306; FAX: +64 3 359 4632
E-mail: ian_mackay@tait.co.nz

SUPERVISED BY: Morton Flom, P. Eng.

TABLE OF CONTENTS

PAGE NO. 1 of 7.

Required information per ISO/IEC Guide 25-1990, paragraph 13.2:

a) TEST REPORT (SUPPLEMENTAL)

b) Laboratory: (FCC: 31040/SIT) (Canada: IC 2044)
M. Flom Associates, Inc.
3356 N. San Marcos Place, Suite 107
Chandler, AZ 85225

c) Report Number: d0090037

d) Client:
Tait Electronics Ltd.
P. O. Box 1645
Christchurch 8001, NEW ZEALAND

e) Identification:
T2015-K27-F00
FCC ID: CASTEL0036

Description:

f) EUT Condition: Not required unless specified in individual tests.

g) Report Date:
EUT Received:
September 15, 2000

h, j, k): As indicated in individual tests.

i) Sampling method: No sampling procedure used.

l) Uncertainty: In accordance with MFA internal quality manual.

m) Supervised by:

Morton Flom, P. Eng.

n) Results: The results presented in this report relate only to the item tested.

o) Reproduction: This report must not be reproduced, except in full, without written permission from this laboratory.

PAGE NO. 2 of 7.

IDENTIFICATION OF THE EQUIPMENT UNDER TEST (EUT)

NAME AND ADDRESS OF APPLICANT:

Tait Electronics Ltd.
558 Wairakei Rd.
Burnside, Christchurch 8001, NEW ZEALAND

MANUFACTURER:

Applicant

FCC ID:	CASTEL0036
MODEL NO:	T2015-K27-F00
DESCRIPTION:	Mobile Transceiver
TYPE OF EMISSION:	F3E
FREQUENCY RANGE, MHz:	896 to 940

POWER RATING, Watts:
_x_ Switchable ___ Variable ___ N/A

MODULATION:

____ AMPS
____ TDMA
____ CDMA
_x_ OTHER

ANTENNA:

____ HELICAL
____ MONOPOLE
____ WHIP
_x_ OTHER

NOTE: For RF Safety test antenna gain taken at the upper range of expected gain (i.e. 5 dBi) and RF Power set to highest nominal power across all channels.

PAGE NO. 3 of 7.

M. Flom Associates, Inc. is accredited by the American Association for Laboratory Association (A2LA) as shown in the scope below.

THE AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION

ACCREDITED LABORATORY

A2LA has accredited

M. FLOM ASSOCIATES, INC.
Chandler, AZ

for technical competence in the field of

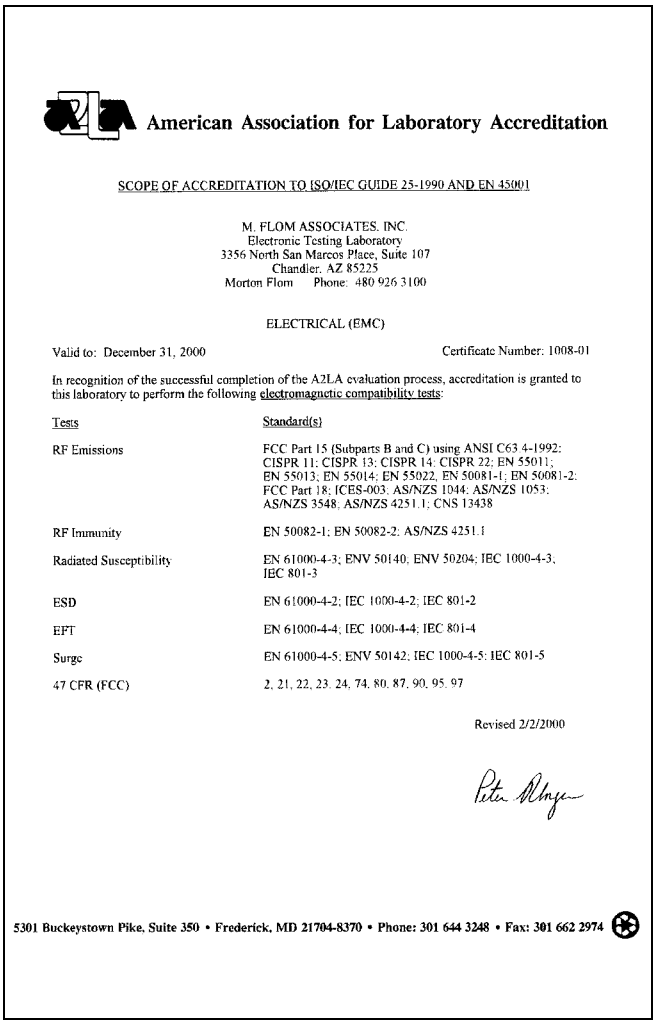
Electrical (EMC) Testing

The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO/IEC Guide 25-1990 "General Requirements for the Competence of Calibration and Testing Laboratories" (equivalent to relevant requirements of the ISO 9000 series of standards) and any additional program requirements in the identified field of testing.

Presented this 24th day of November, 1998.

President
For the Accreditation Council
Certificate Number 1008.01
Valid to December 31, 2000

For tests or types of tests to which this accreditation applies, please refer to the laboratory's Electrical (EMC) Scope of Accreditation



American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC GUIDE 25-1990 AND EN 45001

M. FLOM ASSOCIATES, INC.
Electronic Testing Laboratory
3356 North San Marcos Place, Suite 107
Chandler, AZ 85225
Morton Flom Phone: 480 926 3100

ELECTRICAL (EMC)

Valid to: December 31, 2000 Certificate Number: 1008-01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following electromagnetic compatibility tests:

Tests	Standard(s)
RF Emissions	FCC Part 15 (Subparts B and C) using ANSI C63.4-1992; CISPR 11; CISPR 13; CISPR 14; CISPR 22; EN 55011; EN 55013; EN 55014; EN 55022, EN 50081-1; EN 50081-2; FCC Part 18; ICES-003; AS/NZS 1044; AS/NZS 1053; AS/NZS 3548; AS/NZS 4251.1; CNS 13438
RF Immunity	EN 50082-1; EN 50082-2; AS/NZS 4251.1
Radiated Susceptibility	EN 61000-4-3; ENV 50140; ENV 50204; IEC 1000-4-3; IEC 801-3
ESD	EN 61000-4-2; IEC 1000-4-2; IEC 801-2
EFT	EN 61000-4-4; IEC 1000-4-4; IEC 801-4
Surge	EN 61000-4-5; ENV 50142; IEC 1000-4-5; IEC 801-5
47 CFR (FCC)	2, 21, 22, 23, 24, 74, 80, 87, 90, 95, 97

Revised 2/2/2000

5301 Buckeystown Pike, Suite 350 • Frederick, MD 21704-8370 • Phone: 301 644 3248 • Fax: 301 662 2974

"This laboratory is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this report have been determined in accordance with the laboratory's terms of accreditation unless stated otherwise in the report."

Should this report contain any data for tests for which we are not accredited, or which have been undertaken by a subcontractor that is not A2LA accredited, such data would not covered by this laboratory's A2LA accreditation.

STANDARD TEST CONDITIONS and ENGINEERING PRACTICES

Except as noted herein, the following conditions and procedures were observed during the testing:

In accordance with ANSI C63.4-1992/2000, section 6.1.9, and unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104 °F) unless the particular equipment requirements specify testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.

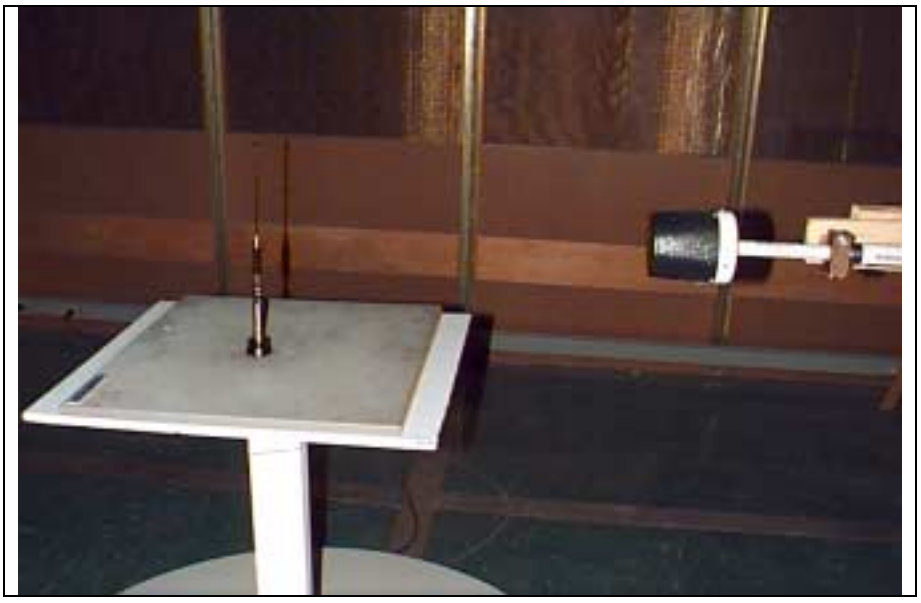
Prior to testing, the EUT was tuned up in accordance with the manufacturer's alignment procedures. All external gain controls were maintained at the position of maximum and/or optimum gain throughout the testing.

Measurement results, unless otherwise noted, are worst case measurements.

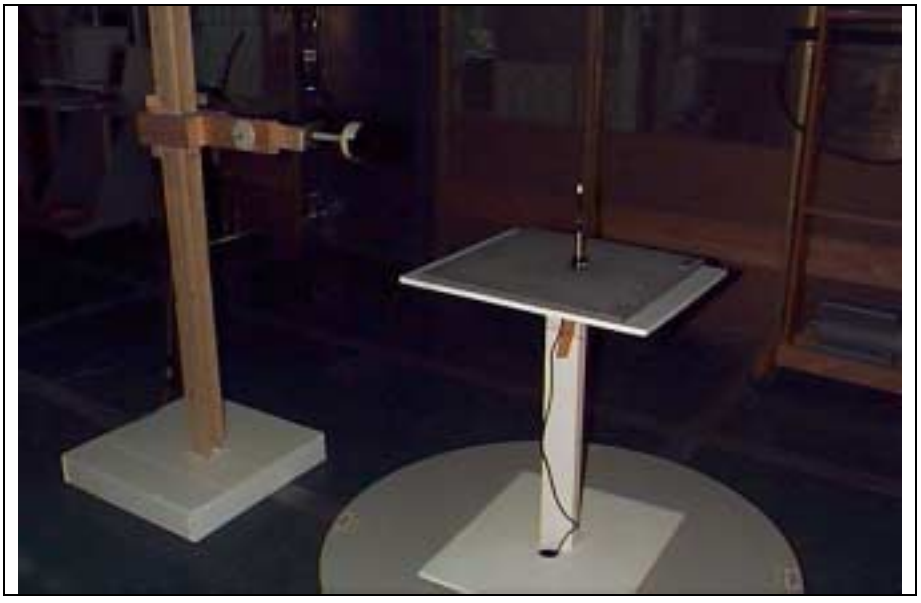
PAGE NO.	5 of 7.
Name of test:	Environmental Assessment
Specification:	FCC: 47 CFR 1.1310
Measurement Guide:	ANSI/IEEE C95.1 1992
Test Equipment:	Maximum Permissible Exposure (MPE) measurement system, consisting of: Narda 8717-1174R, Radiation meter Narda 8761D, E-field probe (300 kHz – 3 GHz) (Calibrated Nov-98)
Measurement Procedure:	1. The following measurements were performed with a Narda probe using ANSI/IEEE C95.1 as a guide. 2. Prior to making any measurements, the measurements system was calibrated in accordance with the manufacturer's procedures. 3. The EUT's radiating element (antenna) was placed on a 1 m tall table for ease of testing. For equipment normally operated on a metal surface, a ground plane was used. 4. The remaining equipment necessary to operate the EUT was maintained at a distance from the measurement arrangement suitable to minimize interference with the measurements. 5. The minimum safe distance was calculated from the formula Power Density = EIRP / $4\pi R^2$ (Peak Watts/m^2). The calculation is shown with the measurement data. 6. With the EUT operating at maximum power, a search was initiated for worst case emissions with the probe raised and lowered over a range of 0.2 to 2 meters in height and over a horizontal plane of 0^o to 360^o. 7. Average values were calculated for the whole body (0.2-2.0m), lower body (0.2-0.8m) and upper body (1.0-2.0m).
Results:	Attached.

PAGE NO. 6 of 7.

TEST SETUP: Maximum Permissible Exposure (MPE)
g0060238: 2000-Jun-23 Fri 15:12:35
STATE: 0:General



TEST SETUP: Maximum Permissible Exposure (MPE)
g0060239: 2000-Jun-23 Fri 15:12:35
STATE: 0:General



PAGE NO. 7 of 7.

Name of test: Environmental Assessment

EUT Description: See Page 2.
Power, Conducted [W] = 18
Test Frequency, MHz = 896.1
Ant. Model Monopole
Ant. Gain[dB] = 4.5

Rated Probe: Narda 8761D Probe = 10 μW/cm^2 to 20 mW/cm^2

47 CFR 1.1210 Table 1, (B)

0.3-1.234 MHz:	Limit [mW/cm^2]	= 100
1.34-30 MHz:	Limit [mW/cm^2]	= (180/f^2)
30-300 MHz:	Limit [mW/cm^2]	= 0.2
300-1500 MHz	Limit [mW/cm^2]	= f/1500
1500-100,000 MHz:	Limit [mW/cm^2]	= 1.0

Power[W EIRP] = ($P_{[Watts,Conducted]}$ + G) = 50.73 W, ERP
Limit [mW/cm^2] = 0.5974
Theoretical safe distance: $R_{[m]} = [(P_{[W\ EIRP]}) / (4\pi \times Limit_{[W/m^2]})]^{1/2}$
$R_{[m]}$ = 0.8667
$R_{[inches]}$ = 32.4
Measurement Distance = 0.822 meters

Results: at tested distance of 0.866 m

Probe Height, m	Power Density, mW/cm^2
2.0	0.14
1.8	0.25
1.6	0.29
1.4	0.34
1.2	0.38
1.0	0.53
0.8	0.24
0.6	0.37
0.4	0.18
0.2	0.10

Calculations: The measured power density readings were summed and the results divided by the number of readings to calculate the average.
For whole body: Average of 0.2 to 2.0 m, mW/cm^2 = 0.28
For lower body: Average of 0.2 to 0.8 m, mW/cm^2 = 0.22
For upper body: Average of 1.0 to 2.0 m, mW/cm^2 = 0.32

SUPERVISED BY: Morton Flom, P. Eng.

Addendum:

(THE FOLLOWING WILL BE PLACED IN INSTRUCTION MANUAL)

INSTRUCTIONS TO INSTALLERS & USERS

Minimum Safe Distance: 0.822 m (32.4 in.)

Antenna Mounting — Antenna as supplied by manufacturer must not be mounted at a location such that any person or persons can come closer than the above-indicated minimum safe distance to the antenna...i.e. 0.822 m (32.4 in.)

To comply with FCC RF Exposure Limits, antenna must be installed @ or exceeding minimum safe distance shown above.

Antenna Substitution — **Do not substitute any antenna for the one supplied by manufacturer. You may be exposing person(s) to harmful radiation. Contact supplier or manufacturer for further instructions.**

WARNING: MAINTAIN SEPARATION DISTANCE FROM ANTENNA OF 0.822 m.

CAUTION: To comply with FCC R.F. Exposure Requirements, this device must be installed to provide a separation distance, as shown below or more, between its antenna and persons.

Safe Antenna Distance = 0.822 m for 50% Duty Factor
Maximum Antenna Gain = 4.5 db, referenced to dipole
Maximum Duty Factor = 50% ON, 50% Receive

TESTIMONIAL AND STATEMENT OF CERTIFICATION

THIS IS TO CERTIFY THAT:

1. THAT the application was prepared either by, or under the direct supervision of, the undersigned.

2. THAT the technical data supplied with the application was taken under my direction and supervision.

3. THAT the data was obtained on representative units, randomly selected.

4. THAT, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.

CERTIFYING ENGINEER: Morton Flom, P. Eng.