



# RF Exposure Evaluation Report

<b>APPLICANT</b>	STANDARD COMMUNICATIONS PTY.LTD.
<b>ADDRESS</b>	PO BOX 96 WINSTON HILLS NSW 2153 AUSTRALIA
<b>FCC ID</b>	TXJCM60UL25
<b>MODEL NUMBER</b>	CM60-UL25B
<b>PRODUCT DESCRIPTION</b>	UHF MOBILE TRANSCEIVER
<b>DATE SAMPLE RECEIVED</b>	4/11/2018
<b>FINAL TEST DATE</b>	4/27/2018
<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
484AUT18 MPE_TestReport_	Rev1	Initial Issue	05/01/2018

**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>	05/01/2018

## GENERAL INFORMATION

<b>EUT Description</b>	UHF MOBILE TRANSCEIVER
<b>Model Number</b>	CM60-UL25B
<b>EUT Power Source</b>	<input type="checkbox"/> 110–120Vac/50– 60Hz
	<input checked="" type="checkbox"/> DC Power (13.8 V)
	<input type="checkbox"/> Battery Operated Exclusively
<b>Test Item</b>	<input type="checkbox"/> Prototype
	<input checked="" type="checkbox"/> Pre-Production
	<input type="checkbox"/> Production
<b>Type of Equipment</b>	<input type="checkbox"/> Fixed
	<input checked="" type="checkbox"/> Mobile
	<input type="checkbox"/> Portable
<b>Antenna Connector</b>	BNC
<b>Test Conditions</b>	The temperature was 26°C Relative humidity of 50%.
<b>Modification to the EUT</b>	No Modification to EUT.
<b>Applicable Standards</b>	FCC CFR 47 Part 2.1091
<b>Test Facility</b>	Timco Engineering Inc. at 849 NW State Road 45 Newberry, FL 32669 USA. <b>Designation #: US1070</b>

## ANTENNA INFORMATION

Manufacturer Provided Antenna	Type	Max Gain (dBi)
No	Not specified.	2.15
No	Not specified.	5.15

## MANUFACTURER'S STATEMENT

The following excerpt was taken from the CM60 Service Manual:

### Radio Frequency Exposure Control

This radio emits RF (Radio Frequency) energy or radio waves when transmitting. RF energy is one of many forms of electromagnetic energy including sunlight and electricity. The FCC Radio Frequency exposure guidelines include recommendations on the safe levels of exposure for workers and the general public with a significant margin of protection.

To comply with FCC exposure limits the radio must be installed using an externally mounted antenna with a gain of either 2.15 dBi or 5.15 dBi. The antenna must be mounted centrally on the roof of the vehicle in a location that ensures a minimum safe distance of 35 inches (0.9 m) from people.

For further information on RF energy exposure and how to control it, please visit the following website. [www.fcc.gov/oet/rfsafety/rf-faqs.html](http://www.fcc.gov/oet/rfsafety/rf-faqs.html)

## MPE CALCULATION

The minimum separation distance is calculated as follows:

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

The limit for general uncontrolled exposure environment is shown in FCC rule Part 1.1310, Table 1.

### Minimum Separation Distance for Mobile or Fixed Devices General Population/Uncontrolled Exposure

Insert values in yellow highlighted boxes to determine Minimum Separation Distance

Max Power	25 W	equals	Max Power	25000 mW
Duty Cycle	50 %	equals	Duty Factor	0.5 numeric
Antenna Gain	5.15 dBi	equals	Gain numeric	3.273407 numeric
Coax Loss	0 dB		Gain - Coax Loss	3.273407 numeric
Power Density	0.3 mW/cm <sup>2</sup>			
Frequency	480 MHz			

Enter power Density from the chart to the right

Rule Part 1.1310, Table 1 (B)

Frequency range	Power den	Enter this value
MHz	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>
0.3-1.34	100	100
1.34-30	180/f <sup>2</sup>	0.0
30-300	0.2	0.2
300-1,500	f/1500	0.3
1,500-100,000	1	1

f = frequency in MHz

Minimum Separation Distance

104.2 cm

1.042 m