# *SAR*

# *RF Exposure Report CN27700L*

**2PCA-7700-B001 Rev 1**

# Revision History

| Date | Revision | Description | Signature | |
|---|---|---|---|---|
| dd-mon-yyyy | | Initial Release | Prepared | |
| | | | Approved | |
| dd-mon-yyyy | | | Prepared | |
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| dd-mon-yyyy | | | Prepared | |
| | | | Approved | |

# Table of Contents

# 1 Document Objective

This document outlines the controls in place that are required to ensure the user of this RF equipment is not subjected to RF exposure levels that are outside of accepted levels.

# 2 Equipment.

## 2.1 Specific Radio Module

The subject of this report is

Radio Transmitter Module 2PCA-7700-B001

## 2.2 Radio Module Specification

| | |
|---|---|
| Frequency range | 406.1125MHz to 419.9875MHz |
| Power | 250mW |
| Modulation | 2GFSK |
| Duty Cycle | 30% Maximum |

## 2.3 Host Equipment

The radio module is only used in equipment manufactured by Cattron Group Inc. and so is all operating parameters are carefully controlled.

The equipment is worn on a body harness and has to be oriented in a specific way to be usable and so the orientation including the antenna position are well known.

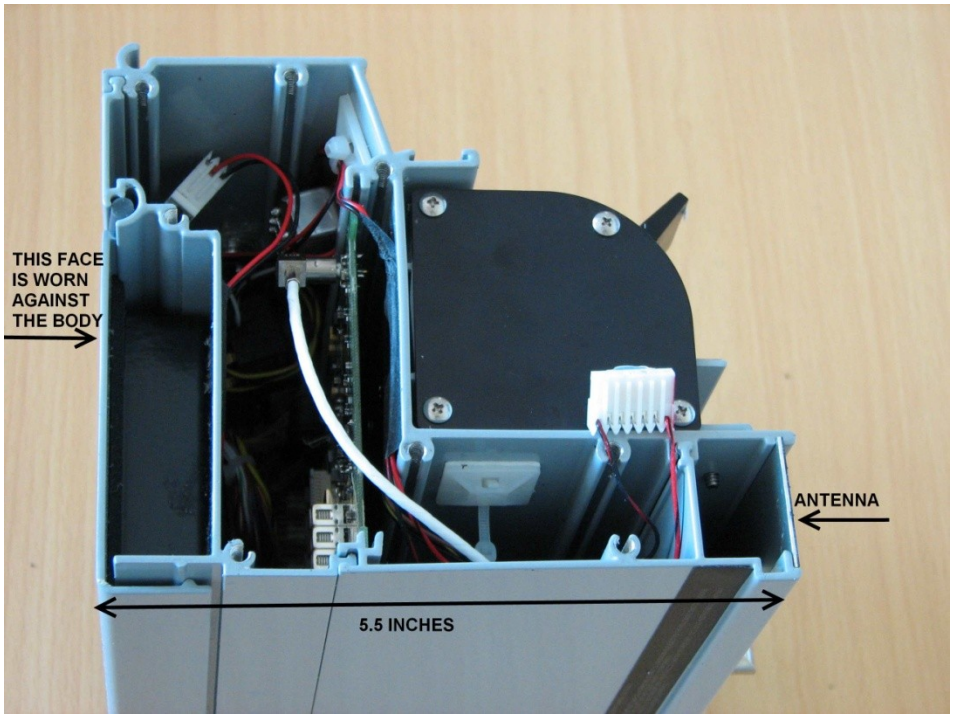
## 2.4 Host Equipment Antenna

No Antennas are used that have a gain higher than 2dBi.

The Antenna Spacing from the operators body is always greater than 3 inches.

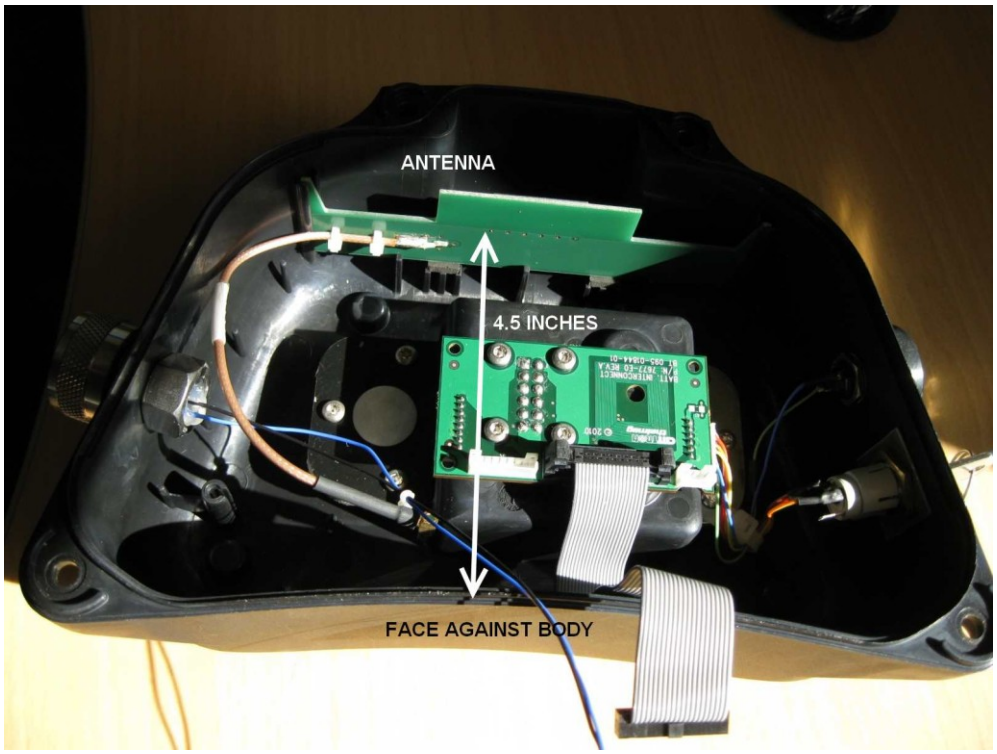
# 3 Example Equipment

## 3.1 Paddle Controller


Paddle Controller Controlled Spacing is 5.5 inches

### *3.2 LRC Controller*


LRC Controller Controlled Spacing is 4.5 inches.

# 4 Controlled Exposure

It can be seen that the radio is only incorporated into our own equipment and that the antenna location, Antenna type, RF Power and Duty Cycle are all under our control.

The Equipment is Body Worn at waist level.

It is not possible for the user to operate the equipment in a way that allows increased exposure and so no specific guidance is required in the user manual.

Guidance for this manufacturer related to the integration of this module into equipment is outlined in the document 9S01-7700-A301 TX Integration Guide.

Mean power is 250mW * 30%=75mW

Antenna Gain 2dBi, Assume 3dB and give a mean power of 150mW at 4.5 inches.

# 5 Exclusion to Requirements

According to FCC Document 447498 D01 General RF Exposure Guidance v05 Appendix A, the limits at 400MHz are between 300 and 450MHz guidelines but the 300MHz values are higher and so we will use these.

Taking the mean power above of 150mW and 300MHz we have an exclusion distance of greater than 30mm according to table A.

Table B gives a possible mean power of around 330mW at 80mm.

Clearly our controlled distance of 4.5 inches ensures safe operation and exclusion to SARS testing.