



166 South Carter, Genoa City, WI 53128

Manufacturer: Rehabilitation Institute of Chicago
Product: Complete Controller
Report Number: 19867
Project Number: 6104

**Code of Federal Regulations 47
Part 2 –Subpart J – Section 2.1093
Radiofrequency radiation exposure evaluation: portable devices**

Company: Rehabilitation Institute of Chicago

Model: CCDB110

Formal Name: Complete Controller

Rule Part: CFR 47 Part 1.1307(b)

CFR 47 Part 2.1093

Test Procedure: FCC 447498 10 D01 General RF Exposure Guidance v05

4.3. General SAR test reduction and exclusion guidance

4.3.1. Standalone SAR test exclusion considerations

Limits: The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* \leq 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where:

$f(\text{GHz})$ is the RF channel transmit frequency in GHz.

Power and distance are rounded to the nearest mW and mm before calculation.

The result is rounded to one decimal place for comparison.

When the minimum *test separation distance* is $<$ 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Output Power: The maximum output power as listed on the FCC Grant of Equipment Authorization for this device in 802.11g (2.4 GHz) mode is 113.5 mW.

Test exclusion conditions are based on source-based time-averaged maximum output power. Total ON time = 7.816 ms during 100 ms. Duty cycle (x) = 7.816 / 100 = 0.07816

Source-based time-averaged maximum power = 113.5 mW x 0.07816 = 8.871 mW.

8.871 mW rounded to the nearest mW = 9 mW.

Exclusion threshold: $[9 \text{ mW} / 5 \text{ mm}] \times [\sqrt{2.462 \text{ GHz}}] = 2.82$

Results: **2.82 is \leq 3.0 for 1-g SAR and \leq 7.5 for 10-g extremity SAR.**

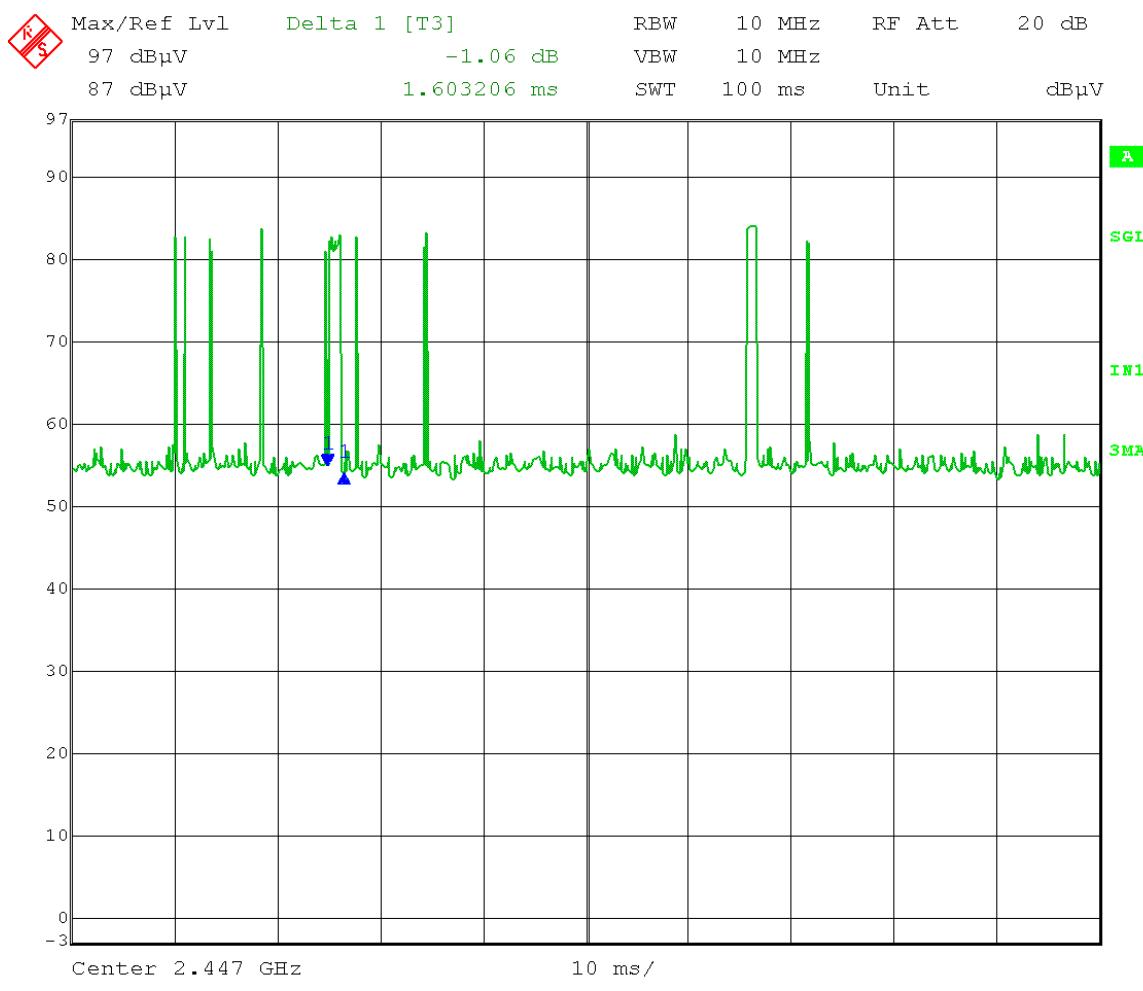
SAR measurement is not necessary.

Duty Cycle Measurements

Test Date: 02-24-2014
Company: Rehabilitation Institute of Chicago
EUT: CCDB110 Wireless Module
Test: Duty Cycle
Operator: Craig B

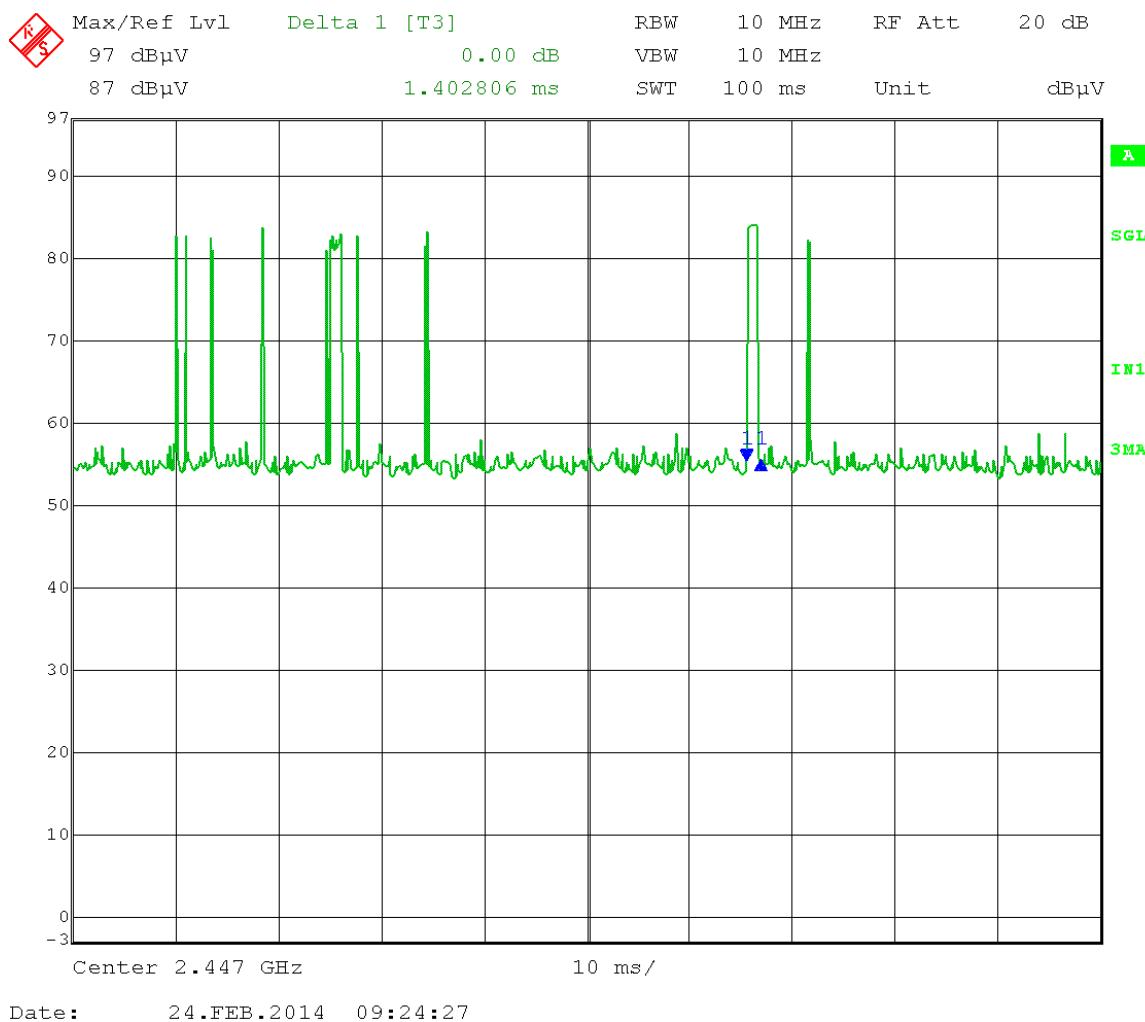
Comment: Total ON time = 7.816 ms during 100 ms
Duty cycle (x) = 7.816 / 100 = 0.07816

1 pulse at 1.603206 ms
1 pulse at 1.402806
8 pulses at 0.601202405 ms each

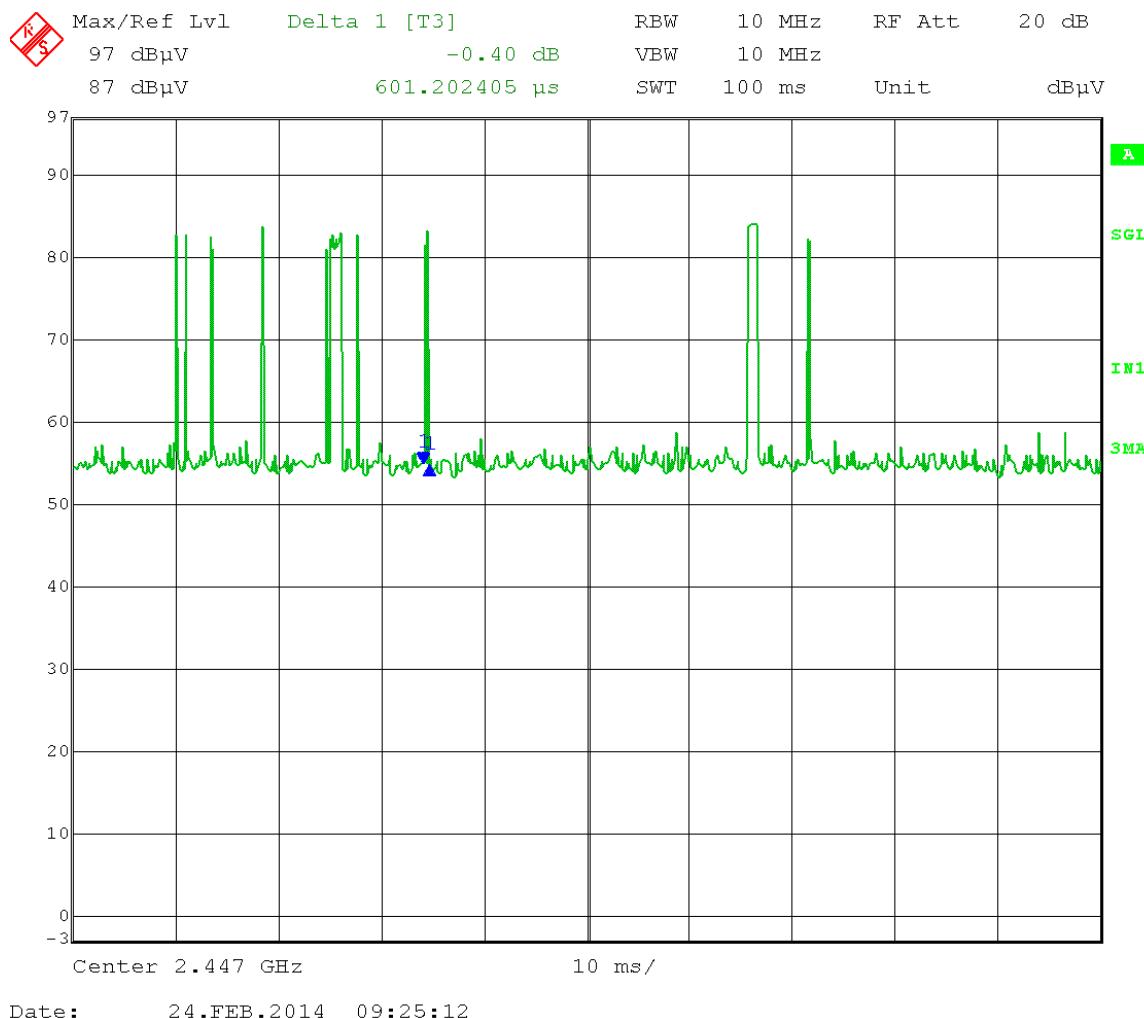


Date: 24.FEB.2014 09:23:26

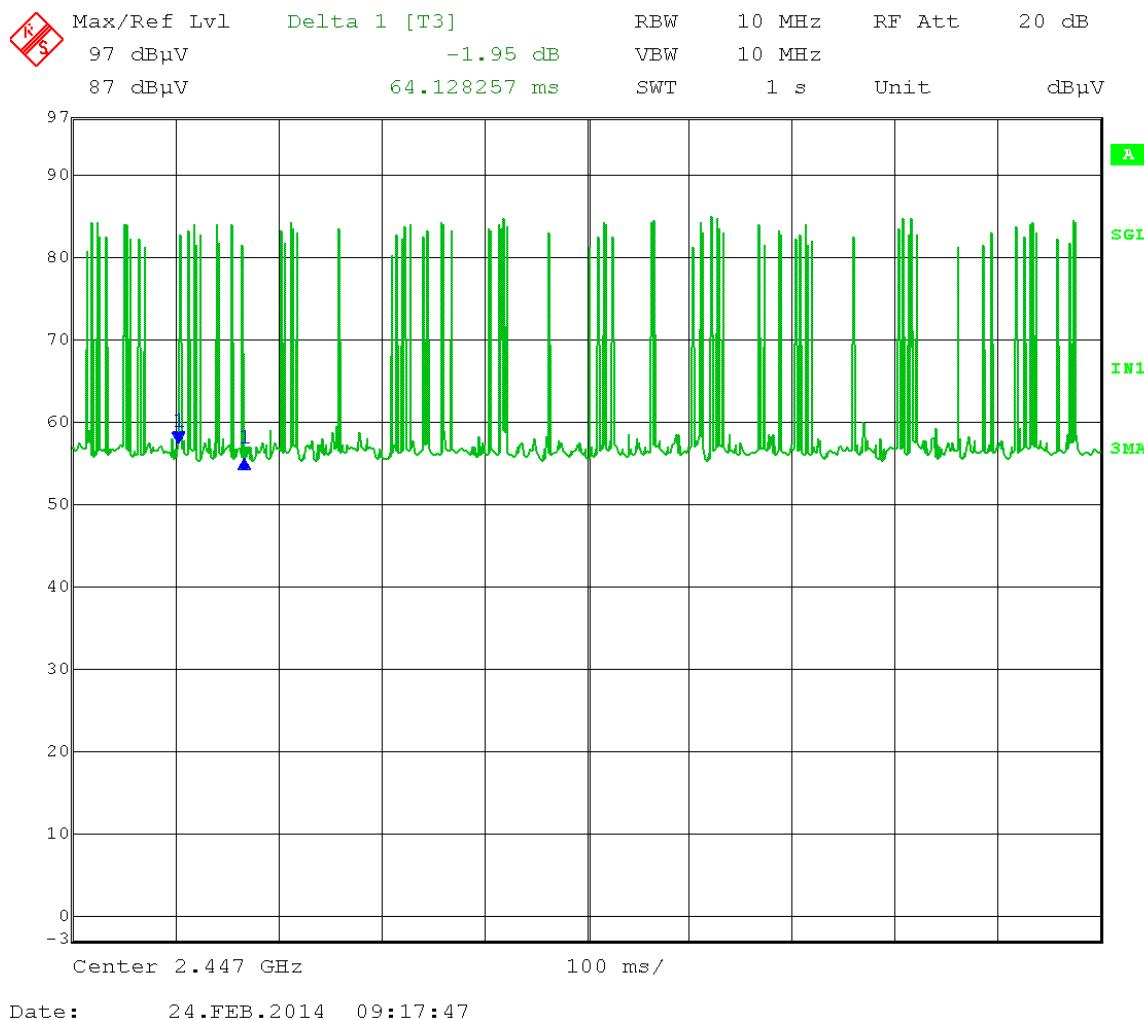
Duty Cycle Measurements



Duty Cycle Measurements



Duty Cycle Measurements



(SITE 3) EMISSIONS TEST EQUIPMENT LIST

| Description | Manufacturer | Model Number | Serial Number | Frequency Range | Cal Date | Cal Due Dates |
|--------------|-----------------|--------------|---------------|-----------------|----------|---------------|
| Receiver | Rohde & Schwarz | ESI 40 | 837808/005 | 20 Hz – 40 GHz | 7-23-13 | 7-23-14 |
| Horn Antenna | EMCO | 3115 | 9903-5731 | 1-18GHz | 7-11-13 | 7-11-15 |

END OF REPORT

| Revision # | Date | Comments | By |
|------------|---------|--------------------------------------|-------|
| 1.0 | 3-25-14 | Preliminary Release (revised format) | CB/JS |
| 2 | 8-08-14 | Model Number Corrected | JS |