

March 4, 2024

EasyMetering, LLC
Andre Cedeno
3651 FAU Boulevard
Boca Raton, FL 33431

Dear Andre Cedeno,

Enclosed is the EMC Wireless test report for compliance testing of the EasyMetering, LLC, AMI-I210-TL-ME9-SP as tested to the requirements of the FCC Part 15.247, 22, 24, 27.

Thank you for using the services of Eurofins Electrical and Electronic Testing NA, Inc. Please contact me if you have any questions regarding these results or if Eurofins E&E can be of further service to you.

Sincerely yours,

Michelle Tawmging

Documentation Department
Eurofins Electrical and Electronic Testing NA, Inc.

Reference: (\EasyMetering, LLC\WIR130084-FCC RSS BLE Rev. 2)



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FCC Test Report

for the

EasyMetering, LLC
AMI-I210-TL-ME9-SP

Standard

47 CFR FCC Part 15, Subpart C (Section 15.247)
47 CFR FCC Part 22
47 CFR FCC Part 24
47 CFR FCC Part 27

Report: WIR130084-FCC RSS BLE Rev. 2

Prepared For:

EasyMetering, LLC
3651 FAU Boulevard
Boca Raton, FL 33431

Prepared By:
Eurofins Electrical and Electronic Testing NA, Inc.
914 W. Patapsco Avenue
Baltimore, MD 21230

FCC Test Report

for the

EasyMetering, LLC
AMI-I210-TL-ME9-SP

Standard
47 CFR FCC Part 15, Subpart C (Section 15.247)

47 CFR FCC Part 22
47 CFR FCC Part 24
47 CFR FCC Part 27



Donald Salguero
Wireless Lab

Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of 15.247, Part 22 Subpart H and Part 24 Subpart E and Part 27 Subpart L of the FCC Rules under normal use and maintenance.



Michael Griffiths
Manager, Wireless Lab

Report Status Sheet

Revision	Report Date	Reason for Revision
Ø	January 31, 2024	Initial Issue.
1	February 26, 2024	Updated Table 1; Updated Table 2; Updated Test Site section.
2	March 4, 2024	Removed references to 15.407 throughout; Updated Table 1.

Table of Contents

I. Executive Summary7

 A. Purpose of Test.....7

 B. Executive Summary7

II. Equipment Information8

 A. Overview.....8

 B. References.....10

 C. Test Site.....10

 D. Measurement Uncertainty11

 E. Modifications11

 Modifications to EUT11

 Modifications to Test Standard11

 F. Disposition of EUT11

III. Electromagnetic Compatibility Criteria for Intentional Radiators12

 A. Radiated Emission.....12

List of Tables

Table 1. Equipment Details	10
Table 2. EUT List	10
Table 3. Ports and Cabling.....	10
Table 4. Uncertainty Calculations Summary	11
Table 5. Equipment List	14

I. Executive Summary

A. Purpose of Test

An EMC Wireless evaluation was performed to determine compliance of the EasyMetering, LLC, AMI-I210-TL-ME9-SP, with the requirements of FCC Part 15.247, 22, 24, 27. All references are to the most current version of Title 47 of the Code of Federal Regulations in effect. In accordance with PVG-04 technical requirements, the following data is presented in support of the Certification of the AMI-I210-TL-ME9-SP. EasyMetering, LLC should retain a copy of this document which should be kept on file for at least two years after the manufacturing of the AMI-I210-TL-ME9-SP, has been **permanently** discontinued.

B. Executive Summary

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 15.247, 22, 24, 27, in accordance with EasyMetering, LLC, purchase order number US20231212. All tests were conducted using measurement procedure.

FCC Reference	Description	Compliance
15.247, Part 22, Part 24, Part 27	Spurious Radiated Emissions	Compliant

Rationale:

Per KDB 996369 D04 “Modular Transmitter Integration Guide – Guidance for Host Product Manufacturers” only spot checks are reported in this filing

II. Equipment Information

A. Overview

Eurofins Electrical and Electronic Testing NA, Inc. was contracted by EasyMetering, LLC to perform testing on the AMI-I210-TL-ME9-SP, under purchase order number US20231212.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of EasyMetering, LLC, AMI-I210-TL-ME9-SP.

The results obtained relate only to the item(s) tested.

EUT Summary Table

Name of EUT/Model:	AMI-I210-TL-ME9-SP
Description of EUT and Intended Use:	It reads the meter's information and sends it to EasyMetering's cloud where it is processed and saved. The users are electric utilities.
Selected Operation Mode(s):	<p>EUT power on: When the meter is powered, the AMI-I210-TL-ME9-SP will turn on:</p> <p>Capacitor charging: Green LED blinks until the capacitor is charged. Static green led.</p> <p>Cellular module power on: Blue LED flashes with cellular module power on.</p> <p>Identification and meter reading: Blue LED flashes at higher speed when reading the meter and taking reading.</p> <p>Connection with cloud EasyMetering: Sending data to cloud.</p>
Rational for the selection of the Operation Mode(s):	
Susceptibility Criteria:	No data transmission
Monitoring Method(s):	<p>Green LED. Encendido</p> <p>Blue led. Cellular module</p>
Emissions Class Declaration:	Class B
Configurations:	<p>The configuration provided.</p> <p>240v power supply, adhesive antenna</p>
Rated Power Input	
Input Voltage Range:	220
AC or DC:	AC
Voltage Frequency:	60
Number of Phases:	1
Current:	200

Physical Description	
EUT Arrangement:	Both
System with Multiple Chassis?	False
Size (HxWxD) inches:	5.94x5.25
Weight (lbs.):	2.4
Highest Internal Frequency (MHz):	2484
Other Info	
EUT Software (Internal to EUT):	Ami cloud(proprietary software)
Support Software (used by support PC to exercise EUT):	Esp RF Test Tool Software
Firmware:	RTOS
Transmitter Parameters	
Description of your unit:	Other
Modulation Type:	Half-duplex FDD
Number of Channels:	49
Frequency Range (MHz):	<p>FCC ID: 2AC7Z-ESPPICOMINI // IC ID: 21098-ESPPICOMINI : 2402-2480; 2412-2462; 2422-2452</p> <p>FCC ID: 2BD5W-I210-ME9-SP // IC ID: 31851-I210ME9SP: Band 2:1850~1910 Band 4:1710~1755 Band 5:824~849 Band 8:897.5~900.5 Band 12:699~716 Band 13:777~787 Band 25:1850~1915 Band 26:814~849 Band 66:1710~1780 Band 71:663~698 Band 85:698~716;</p>
Antenna Type:	Multilayer Ceramic Antenna (2.4GHz ISM Band); Flexible Adhesive Antenna (Full Band LTE Antenna)
Antenna Gain (dB):	(2.4GHz ISM Band): 2 (Typical) (Full Band LTE Antenna): 3
PMN:	AMI-I210-TL-ME9-SP
HVIN:	V2A
FVIN:	V1.0
HMN:	AMI-I210-TL-ME9-SP
Data Rates:	Uplink up to 375 kbps - Downlink up to 300 kbps
Expected Power Level:	23 dB
Number of Antenna:	2
Number of Intentional Transmitters:	2

Number of Certified Intentional Transmitter Modules:	1
FCC ID:	2BD5W-I210-ME9-SP
IC ID:	31851-I210ME9SP

Table 1. Equipment Details

Name/Description	Model Number	Part Number	Serial Number	Rev. #
Meter I210+C	I210+C CL200	I210+C CL200	00007302	1
AMI-I210	AMI-I210-TL-ME9-SP	AMI-I210-TL-ME9-SP	N.A.	1
Antenna	JCG142	JCG142	N.A.	1

Table 2. EUT List

Port Name on EUT	Cable Desc. or reason for none	3 Meters or Longer	Length as tested (m)	Max Length (m)	Shielded?	Termination Box ID & Port Name
12-pin port	pins	No			Yes	receptacle connector
MMCX		No	30 cm		Yes	MMCX Male
MMCX		No	30 cm		Yes	MMCX Female

Table 3. Ports and Cabling

B. References

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

- ANSI C63.10:2013
- ANSI C63.26:2015
- KDB 996369 D04 Module Integration Guide V02

C. Test Site

All testing was performed at Eurofins Electrical and Electronic Testing NA, Inc., 914 W. Patapsco Avenue, Baltimore, MD 21230. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

Eurofins Electrical and Electronic Testing NA, Inc. has been accredited by the American Association for Laboratory Accreditation (A2LA) (Certificate #: 0591.01) in accordance with ISO/IEC 17025:2017.

Eurofins Electrical and Electronic Testing NA, Inc. is part of the Eurofins Electrical & Electronics (E&E) global compliance network.

IC CAB: US109

D. Measurement Uncertainty

Test Method	Typical Expanded Uncertainty	K	Confidence Level
RF Frequencies	± 4.52 Hz	2	95%
RF Power Conducted Emissions	± 2.32 dB	2	95%
RF Power Conducted Spurious Emissions	± 2.25 dB	2	95%
RF Power Radiated Emissions	± 3.01 dB	2	95%

Table 4. Uncertainty Calculations Summary

E. Modifications

a) Modifications to EUT

No modifications were made to the EUT.

b) Modifications to Test Standard

No modifications were made to the test standard.

F. Disposition of EUT

The test sample including all support equipment (if any), submitted to the Wireless Lab for testing was returned to EasyMetering, LLC upon completion of testing.

III. Electromagnetic Compatibility Criteria for Intentional Radiators

Radiated Emission

Test Requirement: KDB 996369 D04 Module Integration Guide V02

2.0 e) Perform testing on the product with the transmitter or transmitters operating to confirm that the host product meets the FCC requirements. This investigation of the final product can be done by spot checking emissions from the device while operating the host as a composite system (with all the transmitters operating simultaneously). This testing is performed with the host product configured in typical operational modes to check the fundamental-frequency and spurious emissions for compliance with all the applicable rules.

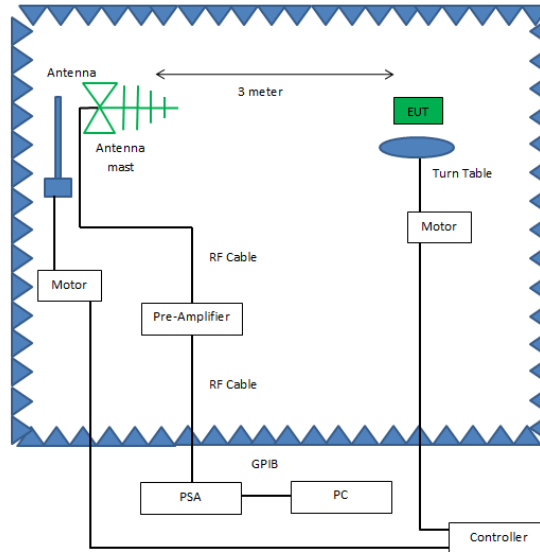
3.0 b) The testing should check for emissions that may occur due to the intermixing of emissions with the other transmitters, digital circuitry, or due to physical properties of the host product (enclosure).

3.2 The frequency spectrum to be investigated for this composite investigation testing at a minimum is based on the 15.33 (b) table. The highest frequency generated or used in the device or on which the device operates, or tunes (MHz) shall include the frequencies of the transmitters and comply with the limits of 15.109 or the highest level permitted for an individual component.

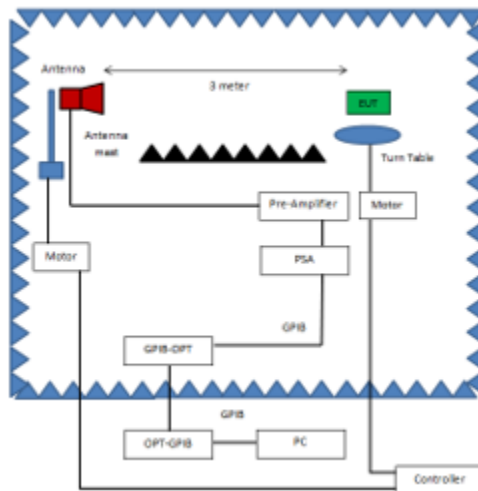
Test Procedure: The transmitters were turned on and operated simultaneously. Measurements were performed at different combinations of active bands. On WiFi transmitter, the tested channels were: 802.11n channel 6,. On the Telit ME910G1-WW transmitter the tested channels were middle channels of LTE Bands 2, 4, 5, 8, 12, 13, 25, 26, 66.

The receive antenna was located 3m from the EUT for emission measurement between 30MHz to 1GHz. The receive antenna was located 1m from the EUT for measurements between 1GHz to 18GHz.

The EUT was rotated orthogonally through all three axes. Plots shown are corrected for both antenna correction factor.



Radiated Emissions, Below 1GHz, Test Setup



Radiated Emissions, Above 1GHz, Test Setup

Test Results: EUT does not exhibit intermodulation products from the simultaneous operation of its transmitters.

Test Engineer: Donald Salguero

Test Date(s): January 26 – January 30, 2024

Test Equipment

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ISO/IEC 17025:2017.

Asset Number	Description	Manufacturer	Model Number	Serial Number	Calibration Date	Calibration Due Date
1T4300	SEMI-ANECHOIC CHAMBER (NSA)	EMC TEST SYSTEMS	NONE	NONE	8/31/2023	8/31/2025
1T4753	Antenna - Bilog	Sunol Sciences	JB6	A110310	12/5/2023	6/30/2025
1T4757	Antenna; Horn	ETS-Lindgren	3117	123516	7/24/2023	1/31/2025
1T4771	PSA Spectrum Analyzer	Agilent Technologies	E4446A	MY51100015	11/2/2023	5/31/2025
1T9997	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	119053	N/A	Func Verify
1T4905	Horn Antenna	Com-Power	AH-118	71300	N/A	Func Verify
4T7420	Signal Transformer	Signal Transformer	DU-1	N/A	N/A	Func Verify

Table 5. Equipment List

Note: Functionally verified test equipment is verified using calibrated instrumentation at time of testing.

END OF REPORT