

## Certificate of Calibration

Manufacturer: **Radian Research, Inc.**  
Instrument Model: **RD-33-333 Dytronic Portable Standard**  
Serial Number: **300273**  
Firmware Revision: **07.34.06**  
Error Specification: **.01% worst case**



**Quality Management System  
ISO 9001 Certified**

Customer Name: **ENERCOM, S.A.**  
Address: **BALBOA, CALLEE AKEE #1511-B, APDO. 321  
BALBOA-ANCON, PANAMA**

P.O. Number: \_\_\_\_\_  
CE Number: \_\_\_\_\_  
RMA / Certificate Number: **31122**  
Calibration Date: **6-Jan-17**  
Based on the recommended calibration interval, the next calibration is due on: **6-Jan-18**

**Environmental Conditions**  
Temperature: **23°C +/- 2°C**  
Humidity: **between 30% and 60%**

**Physical Condition: Undamaged**

**Radian Research's As-Found Test Results showed this Instrument to be:**

New  In Tolerance  Out of Tolerance  Inoperative  Limited Calibration

For Out of Tolerance conditions, As-Found Data Reports are furnished.

Radian Research Inc. certifies the instrument listed above meets or exceeds all published specifications and was calibrated in compliance with ANSI/NCSL Z540-1 using applicable Radian Research procedures which meet the requirements of ISO 9001:2008.

This instrument was calibrated by a Radian Research RS-703A Syntron Automated Calibration System which is traceable to the National Institute of Standards and Technology (NIST) and / or other National Metrology Institute (NMI). The RS-703A Calibration System is traceable within the limitations of NIST's services, by accuracies derived from accepted values of natural physical constants, or accepted ratio type calibration techniques. The RS-703A Calibration System is cross checked and calibrated on a schedule which is adjusted to maintain required accuracies and traceability.

Procedure used for Calibration: **9912987**  
Software used for Calibration: **RS-703A Control Program Rel.04.30.03 Release Apr 6, 2010**  
RS-703 serial number: **703142, 703185, 703187**

**Applicable Traceability & Report Numbers for References used by Radian's Metrology Lab:**

**Watt-hour, VA-hour, VAR-hour, Q-hour, Amp-hour,  
Volt-hour, Volt-Squared hour, AC Volt**

Master Reference Bank consisting of (3) RD-22-RTS  
Serial Numbers: **200717, 200718, 200719**, Calibration Due Date: **28-Jun-2017**  
Traceable to (3) RD-22-RTS SN's **202098, 202099, 202100** calibrated by NIST  
NIST Calibration Report Number: **684/288261-16**

**Time Base (Frequency)**

Arbiter Systems Model 1083B Satellite-Controlled Frequency Standard s/n B1057. GPS controlled system with an uncertainty of 0.000002ppm. No calibration required.

**Other**

Hewlett Packard 8 Digit Multi-Meter Model 3458A s/n 2823A02816. Agilent Technologies  
Test Certificate Number 1-7703300800-1: Calibration Due Date 16-Mar-2017.

**Metrology Laboratory Technician Signature**

  
**LAB  
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in full, without prior written approval of the  
Calibration Facility*

## Certificate of Calibration

Manufacturer: **Radian Research, Inc.**  
Instrument Model: **RD-33-333 Dytronic Portable Standard**  
Serial Number: **300732**  
Firmware Revision: **07.34.06**  
Error Specification: **.01% worst case**



**Quality Management System  
ISO 9001 Certified**

Customer Name: **Enercom, S.A.**  
Address: **Balboa, Calle Akee #1511-B  
APDO.321, Balboa-Ancon, Panama**

P.O.Number:  
CE Number:

**Environmental Conditions**  
Temperature: **23°C +/- 2°C**  
Humidity: **between 30% and 60%**

RMA / Certificate Number: **31123**  
Calibration Date: **26-Jan-17**

Based on the recommended calibration interval, the next calibration is due on: **26-Jan-18**

**Physical Condition: Undamaged**

**Radian Research's As-Found Test Results showed this instrument to be:**

New  In Tolerance  Out of Tolerance  Inoperative  Limited Calibration

For Out of Tolerance conditions, As-Found Data Reports are furnished.

Radian Research Inc. certifies the instrument listed above meets or exceeds all published specifications and was calibrated in compliance with ANSI/NCSL Z540-1 using applicable Radian Research procedures which meet the requirements of ISO 9001:2008. This instrument was calibrated by a Radian Research RS-933 Syntron Automated Calibration System which is traceable to the National Institute of Standards and Technology (NIST) and / or other National Metrology Institute (NMI). The RS-933 Calibration System is traceable within the limitations of NIST's services, by accuracies derived from accepted values of natural physical constants, or accepted ratio type calibration techniques. The RS-933 Calibration System is cross checked and calibrated on a schedule which is adjusted to maintain required accuracies and traceability.

Procedure used for Calibration: **9912987**  
Software used for Calibration: **Radian Source Control Program Rel.04.30.19 Test Release Mar 31, 2011**  
RS-933 serial number: **703201, 703198, 703199**

**Applicable Traceability & Report Numbers for References used by Radian's Metrology Lab:**

**Watt-hour, VA-hour, VAR-hour, Q-hour, Amp-hour,  
Volt-hour, Volt-Squared hour, AC Volt**

Master Reference Bank consisting of (3) RD-22-RTS  
Serial Numbers: **200717, 200718, 200719, Calibration Due Date: 28-Jun-2017**  
Traceable to (3) RD-22-RTS SN's **202098, 202099, 202100** calibrated by NIST  
NIST Calibration Report Number: **684/288261-16**

**Time Base (Frequency)**

Arbiter Systems Model 1083B Satellite-Controlled Frequency Standard s/n B1057. GPS controlled system with an uncertainty of 0.000002ppm. No calibration required.

**Other**

Hewlett Packard 8 Digit Multi-Meter Model 3458A s/n 2823A02816. Agilent Technologies  
Test Certificate Number 1-7703300800-1: Calibration Due Date 16-Mar-2017.

**Metrology Laboratory Technician Signature**

  
**LAB  
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## Certificate of Calibration

Manufacturer: **Radian Research, Inc.**  
Instrument Model: **RD-33-333 Dytronic Portable Standard**  
Serial Number: **301653**  
Firmware Revision: **07.34.06**  
Error Specification: **.01% worst case**



**Quality Management System  
ISO 9001 Certified**

Customer Name: **Enercom S.A**  
Address: **Balboa-Ancon  
Balboa-Ancon, Panama**

P.O.Number: **E-1984**  
CE Number:

**Environmental Conditions**  
Temperature: **23°C +/- 2°C**  
Humidity: **between 30% and 60%**

RMA / Certificate Number: **31124**

Calibration Date: **10-Jan-17**

Based on the recommended calibration interval, the next calibration is due on: **10-Jan-18**

**Physical Condition: Undamaged**

**Radian Research's As-Found Test Results showed this instrument to be:**

New  In Tolerance  Out of Tolerance  Inoperative  Limited Calibration

For Out of Tolerance conditions, As-Found Data Reports are furnished.

Radian Research Inc. certifies the instrument listed above meets or exceeds all published specifications and was calibrated in compliance with ANSI/NCSL Z540-1 using applicable Radian Research procedures which meet the requirements of ISO 9001:2008.

This instrument was calibrated by a Radian Research RS-703A Syntron Automated Calibration System which is traceable to the National Institute of Standards and Technology (NIST) and / or other National Metrology Institute (NMI). The RS-703A Calibration System is traceable within the limitations of NIST's services, by accuracies derived from accepted values of natural physical constants, or accepted ratio type calibration techniques. The RS-703A Calibration System is cross checked and calibrated on a schedule which is adjusted to maintain required accuracies and traceability.

Procedure used for Calibration: **9912987**

Software used for Calibration: **RS-703A Control Program Rel.04.30.03 Test Release Apr 6**

RS-703A serial number: **703125, 703140, 703192**

**Applicable Traceability & Report Numbers for References used by Radian's Metrology Lab:**

Watt-hour, VA-hour, VAR-hour, Q-hour, Amp-hour,

Volt-hour, Volt-Squared hour, AC Volt

Master Reference Bank consisting of (3) RD-22-RTS

Serial Numbers: **200717, 200718, 200719, Calibration Due Date: 28-Jun-2017**

Traceable to (3) RD-22-RTS SN's **202098, 202099, 202100** calibrated by NIST

NIST Calibration Report Number: **684/288261-16**

Time Base (Frequency)

Arbiter Systems Model 1083B Satellite-Controlled Frequency Standard s/n B1057. GPS controlled system with an uncertainty of 0.000002ppm. No calibration required.

Other

Hewlett Packard 8 Digit Multi-Meter Model 3458A s/n 2823A02816. Agilent Technologies

Test Certificate Number 1-7703300800-1: Calibration Due Date 16-Mar-2017.

**Metrology Laboratory Technician Signature**

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