

FCC ID PER PART 15.231

EUT Internal Photo

FOR

P-SERV TECHNOLOGIES PTE LTD.

Blk1093, Lower Delta Road,
#07-05/08 Tiong Bahru Industrial Estate
Singapore 169204

FCC ID: OZAES315V1

April 24, 2000

| | |
|--|---|
| This Report Concerns: <input checked="" type="checkbox"/> Original Report | Equipment Type: Electronic Container Seal Transmitter (315 MHz), ITE |
| Test Engineer: Thomas Huang | |
| Test Date: April 14, 2000 | |
| Reviewed By: John Y. Chan - Director, Compliance Engineering | |
| Prepared By: Bay Area Compliance Laboratory Corporation 230 Commercial Street, Suite 2 Sunnyvale, CA 94086 (408) 732-9162 | |

Note: This report may not be duplicated without prior written consent of Bay Area Compliance Laboratory Corporation. This report **must not** be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

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1 - GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

The *P-SERV TECHNOLOGIES PTE LTD.*, model ES315V1 or the "EUT" as referred to in this report is a 315MHz RF transmitter which is a part of the Electronic Container Seal (ECS) designed to be used by all shippers, aimed to improve the efficiency of port operation. The EUT transmits 315MHz FM signal. The EUT output impedance shall be 50Ù.

The EUT measures 2.0" L x 1.0" W x 4.0" H.

1.2 Objective

This Type approval report is prepared on behalf of *P-SERV TECHNOLOGIES PTE LTD.* in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective of the manufacturer is to demonstrate compliance with FCC rules, Part 15, sec 231 for conducted and radiated margin.

1.3 Related Submittal(s)/Grant(s)

No Related Submittals

1.4 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4 –1992, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz. All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratory, Corp. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

1.5 Test Facility

The Open Area Test site used by Bay Area Compliance Laboratory Corporation to collect radiated and conducted emission measurement data is located in the back parking lot of the building at 230 Commercial Street, Suite 2, Sunnyvale, California, USA.

Test sites at Bay Area Compliance Laboratory Corporation has been fully described in reports submitted to the Federal Communication Commission (FCC) and Voluntary Control Council for Interference (VCCI). The details of these reports has been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 11 and December 10, 1997 and Article 8 of the VCCI regulations on December 25, 1997. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-1992.

The Federal Communications Commission and Voluntary Control Council for Interference has the reports on file and is listed under FCC file 31040/SIT 1300F2 and VCCI Registration No.: C-674 and R-657. The test sites has been approved by the FCC and VCCI for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratory Corporation is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program

(NVLAP). The scope of the accreditation covers the FCC Method - 47 CFR Part 15 - Digital Devices, IEC/CISPR 22: 1993, and AS/NZS 3548: Electromagnetic Interference - Limits and Methods of Measurement of Information Technology Equipment test methods under NVLAP Lab Code 200167-0.

1.6 Test Equipment List

| Manufacturer | Description | Model | Serial Number | Cal. Due Data |
|-------------------|----------------------|------------------|---------------|---------------|
| HP | Spectrum Analyzer | 8568B | 2610A02165 | 12/6/00 |
| HP | Spectrum Analyzer | 8593B | 2919A00242 | 12/20/00 |
| HP | Amplifier | 8349B | 2644A02662 | 12/20/00 |
| HP | Quasi-Peak Adapter | 85650A | 917059 | 12/6/00 |
| HP | Amplifier | 8447E | 1937A01046 | 12/6/00 |
| A.H. System | Horn Antenna | SAS0200/571 | 261 | 12/27/00 |
| Com-Power | Log Periodic Antenna | AL-100 | 16005 | 11/2/00 |
| Com-Power | Biconical Antenna | AB-100 | 14012 | 11/2/00 |
| Solar Electronics | LISN | 8012-50-R-24-BNC | 968447 | 12/28/00 |
| Com-Power | LISN | LI-200 | 12208 | 12/20/00 |
| Com-Power | LISN | LI-200 | 12005 | 12/20/00 |
| BACL | Data Entry Software | DES1 | 0001 | 12/20/00 |

1.7 Equipment Under Test (EUT)

| Manufacturer | Description | Model | Serial Number | FCC ID |
|------------------------------|--------------------|---------|---------------|------------|
| P-SERV TECHNOLOGIES PTE LTD. | 315MHz transmitter | ES315V1 | N/A | OZAES315V1 |

1.8 Support Equipment

Not Applicable.

1.9 EUT Configuration Details and List

Not Applicable.

1.10 External I/O Cabling

Not Applicable.

2 - SYSTEM TEST CONFIGURATION

2.1 Justification

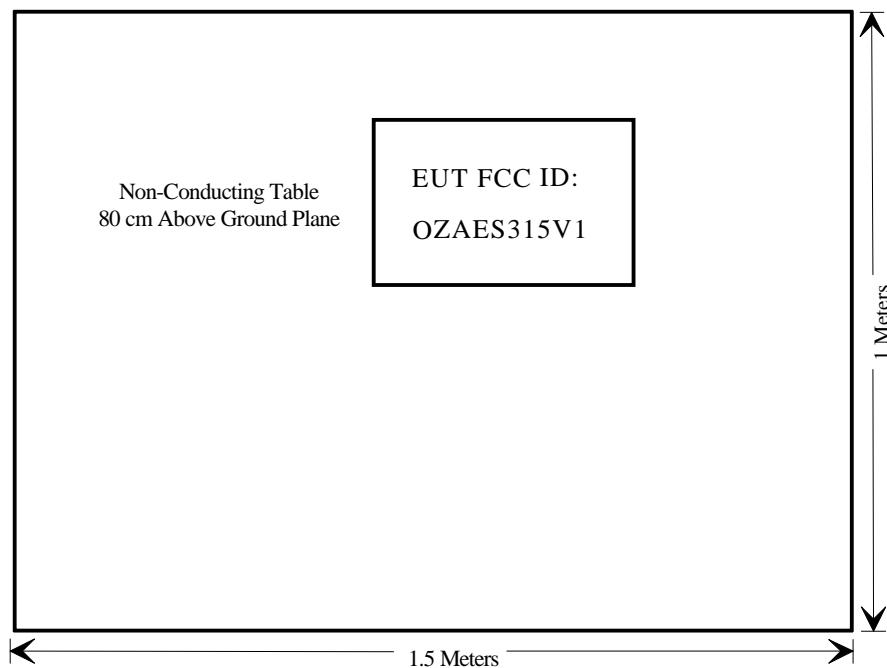
The EUT was configured for testing in a typical fashion (as normally used in a typical application).

The final qualification test was performed with the EUT operating at normal mode.

2.2 Block Diagram

Appendix A contains a copy of the EUT's block diagram as reference.

2.3 Test Setup Block Diagram

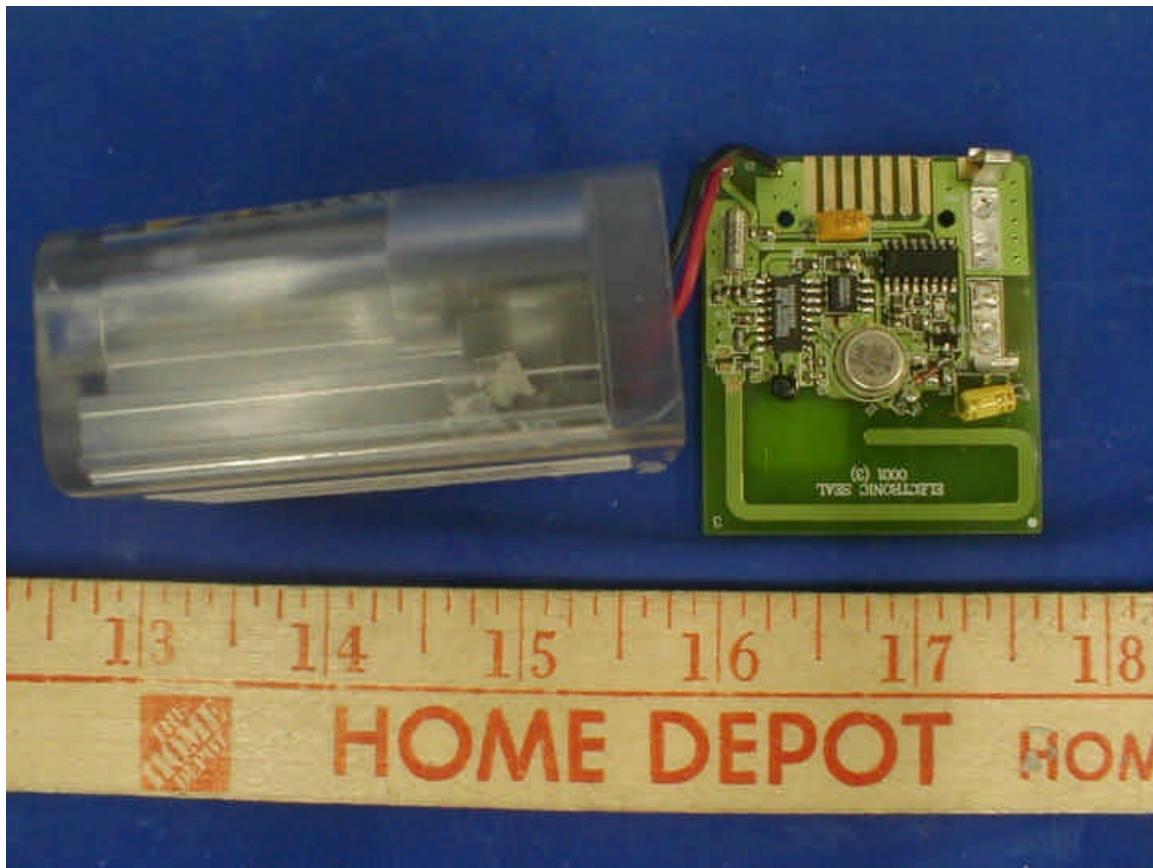


2.4 Equipment Modifications

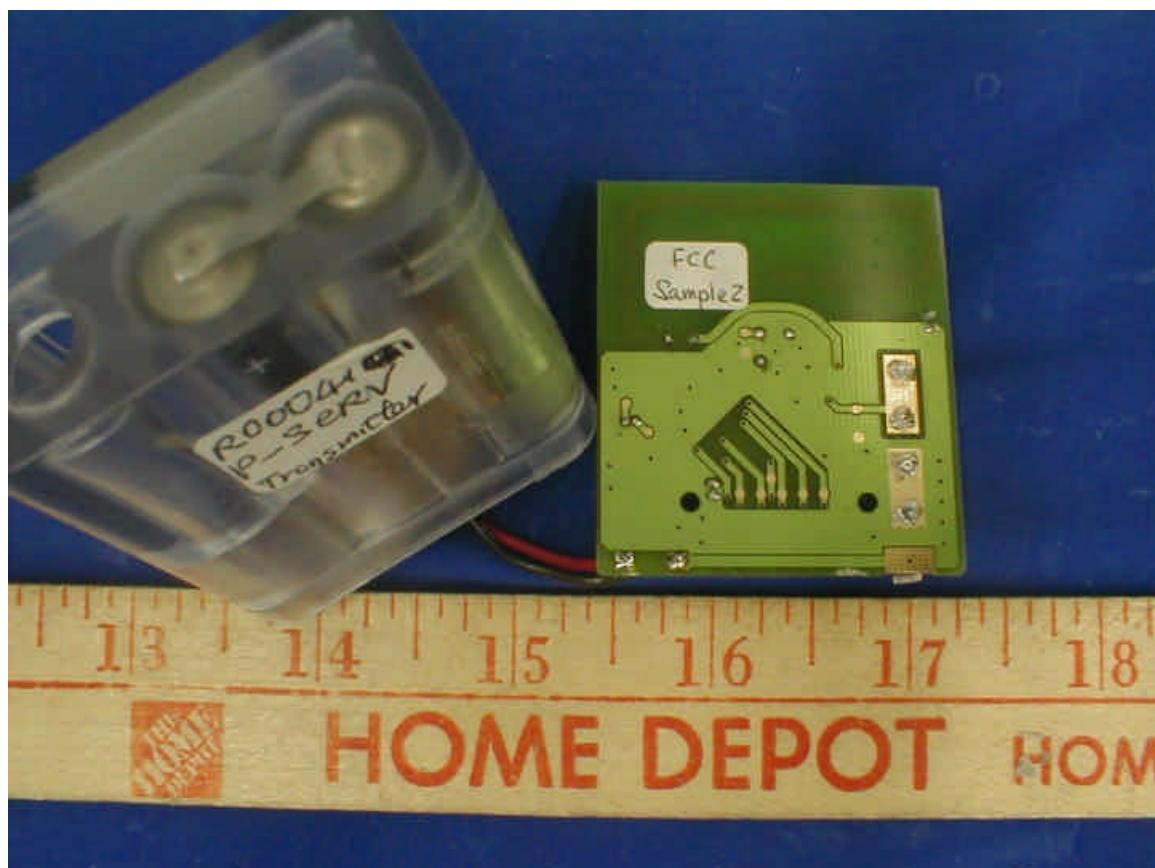
No modifications were necessary for the EUT to comply.

3 – EUT PHOTOGRAPHS

3.1 EUT: Inside Component View



3.2 EUT: Inside Circuit View



Appendix A – AGENCY AUTHORIZATION LETTER

25/04/00 09:38 PST → 01214087329164



17 April 2000

Federal Communications Commission
7435 Oakland Mills Road
Columbia, Maryland, 21046

Sir/Madam,

Reg. FCC grand for Eseal(315MHz)

This letter is an authorization to accept Bay Area Compliance Lab. Corporation as an agent for **P-SERV TECHNOLOGIES PTE LTD**, Blk 1093 Lower Delta Road #07-05/08 Tiong Bahru Industrial Estate Singapore 169204, to sign applications before the Commission on our behalf, to make representations to you on our behalf, and to receive and exchange data between our company and the commission in connection with certification of the following **P-SERV TECHNOLOGIES PTE LTD**'s products:

| | Description | Model number |
|----|----------------|--------------|
| 1) | Eseal (315MHz) | ES315V1 |

Under FCC docket number 20780 and general docket number 80-284 pursuant to part 15, FCC rules and regulations.

Sincerely,

A handwritten signature in black ink, appearing to read "Tan Yam Seng".

Tan Yam Seng
Senior Hardware Design Engineer

P-SERV TECHNOLOGIES PTE LTD Blk 1093 Lower Delta Road #07-05/08 Tiong Bahru Industrial Estate Singapore 169204 Tel : (065) 276-1788 Fax : (065) 270-1788 E-mail : pst@pacific.net.sg