

TEST REPORT

ACCORDING TO: FCC CFR 47 Part 15 subpart C, section 15.231(a) and subpart B,
RSS-210 issue 8 Annex 1

FOR:

Medical Surgery Technologies Ltd. (MST)
Command Unit (CU) for the AutoLap System
Model: CU Clip
Model number: ASS03000
FCC ID:OSEALCU

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1 Applicant information

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Contact name: Mr. Alon Shacham

2 Equipment under test attributes

Product name: Command Unit (CU) for the AutoLap System
Product type: Transmitter operating at 915.9 MHz
Model(s): CU Clip
Model number: ASS03000
Serial number: 75
Hardware version: 1.0
Software release: 1.0
Receipt date: 12/18/2011

3 Manufacturer information

Manufacturer name: Medical Surgery Technologies Ltd. (MST)
Address: P.O.Box 685, Yokneam 20692, Israel
Telephone: +972 (73) 7965570
Fax: +972 (73) 7965571
E-Mail: alon@mst-sys.com
Contact name: Mr. Alon Shacham




4 Test details

Project ID: 22832
Location: Hermon Laboratories Ltd. Harakevet Industrial Zone, Binyamina 30500, Israel
Test started: 12/18/2011
Test completed: 1/10/2012
Test specification(s): FCC 47CFR part 15, subpart C, §15.231(a); subpart B class B;
RSS-210 issue 8 Annex 1, RSS-Gen issue 3

5 Tests summary

| Test | Status |
|---|--------------|
| Transmitter characteristics | |
| FCC Part 15, Section 231(a) / RSS-210, Section A1.1.1, Periodic operation requirements | Pass |
| FCC Part 15, Section 231(b) / RSS-210, Section A1.1.2, Field strength of emissions | Pass |
| FCC Part 15, Section 231(c) / RSS-210, Section A1.1.3, Occupied bandwidth | Pass |
| FCC Part 15, Section 207 / RSS-Gen, Section 7.2.2, Conducted emission | Not required |
| FCC Part 15, Section 203 / RSS-Gen, Section 7.1.4, Antenna requirements | Pass |
| Unintentional emissions | |
| FCC Part 15, Section 107 / RSS-Gen, Section 7.1.6 / ICES-003, Conducted emission at AC power port | Not required |
| FCC Part 15, Section 109 / RSS-Gen, Section 7.2.3 / ICES-003, Class B, Radiated emission | Pass |

Testing was completed against all relevant requirements of the test standard. The results obtained indicate that the product under test complies in full with the requirements tested.
The test results relate only to the items tested. Pass/ fail decision was based on nominal values.

| | Name and Title | Date | Signature |
|---------------------|--|------------------|---|
| Tested by: | Mr. Alex Chaplik, test engineer | January 10, 2012 |  |
| Reviewed by: | Mrs. M. Cherniavsky, certification engineer | April 10, 2012 |  |
| Approved by: | Mr. M. Nikishin, EMC and Radio group manager | April 23, 2012 |  |

6 EUT description

6.1 General information

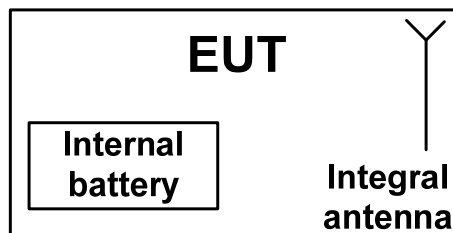
The EUT is a Command Unit (CU) - RF Button for Robotic Arm, which is a part of the AutoLap system. The EUT transmits at 915.9 MHz, has integral antenna and is powered from internal 3V battery.

The AutoLap system is designed to hold and position the laparoscope during laparoscopic surgery. When the camera is in position, the AutoLap system holds it in a stable manner. When the surgeon wishes to change the camera's position, the system positions the laparoscopic camera by maneuvering the video image using a joystick, or by pressing the Manual Activation button, which is located on the ARM. The movement of the laparoscopic camera is enabled and disabled by the surgeon.

The surgeon uses the CU Clip to control the laparoscope's movement. Typical use of the CU Clip is: before the laparoscopic surgery starts, the CU Clip shall transmit a signal to be registered to the system. The CU Clip is attached to the surgical tool.

After the surgeon attaches the laparoscope to the AutoLap, movement of the laparoscope is enabled or disabled by the CU Clip or by using the Manual Activation button.

6.2 Test configuration



6.3 Changes made in EUT

No changes were implemented in the EUT.

6.4 EUT test positions

Photograph 6.4.1 EUT in X-axis orthogonal position



Photograph 6.4.2 EUT in Y-axis orthogonal position



Photograph 6.4.3 EUT in Z-axis orthogonal position



6.5 Transmitter characteristics

| | | | | | | |
|--|--|------------------------------|--------------------------------|-----------------------------------|--------------------------------|--|
| Type of equipment | | | | | | |
| X | Stand-alone (Equipment with or without its own control provisions) | | | | | |
| | Combined equipment (Equipment where the radio part is fully integrated within another type of equipment) | | | | | |
| | Plug-in card (Equipment intended for a variety of host systems) | | | | | |
| Operating frequency | | 915.9 MHz | | | | |
| Maximum rated output power | | Maximum field strength | | 100.5 (μV/m) at 3 m test distance | | |
| Is transmitter output power variable? | | X | No | | | |
| | | Yes | continuous variable | | | |
| | | | stepped variable with stepsize | | | |
| | | | dB | | | |
| | | | dBm | | | |
| | | maximum RF power | | | | |
| | | dBm | | | | |
| Antenna connection | | | | | | |
| unique coupling | | standard connector | | X | integral | |
| | | | | X | without temporary RF connector | |
| Antenna/s technical characteristics | | | | | | |
| Type | | Manufacturer | | Model number | | |
| Integral | | JOHANSON Technology | | 0915AT43A0026 | | |
| | | | | Gain | | |
| | | | | -1 dBi peak | | |
| Transmitter aggregate data rate/s | | 250 kbps | | | | |
| Type of modulation | | MSK | | | | |
| Transmitter power source | | | | | | |
| X | Battery | Nominal rated voltage | 3.0 VDC | Battery type | | |
| | DC | Nominal rated voltage | VDC | | | |
| | AC mains | Nominal rated voltage | VAC | Frequency | | |

| | | | |
|-----------------------------|-------------------------------|---|---------------------------------|
| Test specification: | | FCC Part 15, Section 231(a) / RSS-210, Section A1.1.1, Periodic operation requirements | |
| Test procedure: | | Supplier declaration | |
| Test mode: | | Compliance | Verdict: PASS |
| Date(s): | | 1/10/2012 | |
| Temperature: 20.4 °C | Air Pressure: 1019 hPa | Relative Humidity: 42 % | Power Supply: 3V Battery |
| Remarks: | | | |

7 Transmitter tests according to 47CFR part 15 subpart C and RSS-210 Annex 1 requirements

7.1 Periodic operation requirements

7.1.1 General

The EUT was verified for compliance with periodic operation requirements listed below:

- Continuous transmissions such as voice, video and the radio control of toys are not permitted;
- A manually operated transmitter shall employ switch that will automatically deactivate the transmitter within not more than 5 seconds of being released;
- A transmitter activated automatically shall cease transmission within 5 seconds after activation;
- Periodic transmissions, excluding polling or supervision transmissions, at regular predetermined intervals are not permitted;
- Total duration of polling or supervision transmissions, including data, to determine system integrity in security or safety applications shall not exceed 2 seconds per hour;
- Transmission of set-up information for security systems may exceed the transmission duration limits of 5 seconds, provided such transmissions are under the control of a professional installer and do not exceed ten seconds after a manually operated switch is released or a transmitter is activated automatically. Such set-up information may include data.

The rationale for compliance with the above requirements was either test results or supplier declaration. The summary of results is provided in Table 7.1.1.

7.1.2 Test procedure for transmitter shut down test

7.1.2.1 The EUT was set up as shown in Figure 7.1.1.

7.1.2.2 The spectrum analyzer center frequency was adjusted to the EUT carrier, span set to zero and video triggered for transmission.

7.1.2.3 The transmitter was activated either manually or automatically. Once manually operated transmitter was activated, the switch was immediately released.

7.1.2.4 The transmission time was captured and shown in Plot 7.1.1.

Figure 7.1.1 Setup for transmitter shut down test

