



# Radio Frequency Exposure Evaluation Report

**FOR:**

Smith & Nephew Medical, Ltd.

**Model Number:**

66802146

**Product Description:**

The VERSAJET III Hydrosurgery System is intended for applications that in the healthcare professionals' judgment, require sharp debridement.

**FCC ID:** 2AWH9-VJIII

**IC ID:** 26135-VJIII

**Applied Rules and Standards:**

CFR 47 Part 2.1093 and RSS-102 Issue 5

FCC KDB 447498 D01 General RF Exposure Guidance v06

**Test Report #:** EMC\_SMITH-014-20001\_FCC\_ISED\_SAR\_EX

**DATE:** 2022-01-13



**A2LA Accredited**

**IC recognized #**  
**3462B-1**

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## Contents

|                                                                                              |   |
|----------------------------------------------------------------------------------------------|---|
| 1. Assessment .....                                                                          | 3 |
| 2. Administrative Data .....                                                                 | 4 |
| 2.1. Identification of the Testing Laboratory Issuing the Test Report .....                  | 4 |
| 2.2. Identification of the Client.....                                                       | 4 |
| 2.3. Identification of the Manufacturer.....                                                 | 4 |
| 3. Equipment under Assessment .....                                                          | 5 |
| 4. FCC Exemption Limits for Routine Evaluation .....                                         | 6 |
| 4.1. FCC SAR test exclusions are set by KDB 447498 D01 General RF Exposure Guidance<br>v06 6 |   |
| 4.2. RSS-102.....                                                                            | 6 |
| 5. Stand-Alone SAR Evaluation Exclusion.....                                                 | 7 |
| 5.1. Justification for using the 5 mm Distance .....                                         | 7 |
| 5.2. SAR Exclusion Calculation Table.....                                                    | 7 |
| 6. Revision History.....                                                                     | 8 |

## 1. Assessment

The following device meets the limits of general population uncontrolled exposure specified in CFR 47 Part 2.1093 according to SAR evaluation exclusion requirements specified in FCC regulation as listed in KDB 447498 and the relevant ISED Canada standard RSS-102, as it has been evaluated against the standards mentioned above under this section.

**Responsible for Testing Laboratory:**

|            |            |                                 |                                |
|------------|------------|---------------------------------|--------------------------------|
| 2022-01-13 | Compliance | Kevin Wang<br>(EMC Lab Manager) | Kevin Wang<br>wang@cetecom.com |
| Date       | Section    | Name                            | Signature                      |

**Responsible for the Report:**

| 2022-01-13 | Compliance | Cheng Song<br>(EMC Engineer) | cheng.<br>song@c<br>etecom.<br>com<br><br>Digitally signed by:<br>cheng.<br>song@cetecom.com<br>DN: CN = cheng.<br>song@cetecom.com<br>Date: 2022.01.13<br>12:15:44 -08'00' |
|------------|------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date       | Section    | Name                         | Signature                                                                                                                                                                   |

The test results of this test report relate exclusively to the test item specified in Section 3.

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## **2. Administrative Data**

### **2.1. Identification of the Testing Laboratory Issuing the Test Report**

|                                     |                        |
|-------------------------------------|------------------------|
| <b>Company Name:</b>                | CETECOM Inc.           |
| <b>Department:</b>                  | Compliance             |
| <b>Street Address:</b>              | 411 Dixon Landing Road |
| <b>City/Zip Code</b>                | Milpitas, CA 95035     |
| <b>Country</b>                      | USA                    |
| <b>Telephone:</b>                   | +1 (408) 586 6200      |
| <b>Fax:</b>                         | +1 (408) 586 6299      |
| <b>Compliance Manager:</b>          | Kevin Wang             |
| <b>Responsible Project Manager:</b> | Cathy Palacios         |

### **2.2. Identification of the Client**

|                        |                              |
|------------------------|------------------------------|
| <b>Client's Name:</b>  | Smith & Nephew Medical, Ltd. |
| <b>Street Address:</b> | 101 Hessle Road              |
| <b>City/Zip Code</b>   | Hull, HU3 2BN                |
| <b>Country</b>         | United Kingdom               |

### **2.3. Identification of the Manufacturer**

|                          |                                                   |
|--------------------------|---------------------------------------------------|
| <b>Applicant's Name:</b> | Flextronics Manufacturing (S) Pte Ltd. Singapore. |
| <b>Street Address:</b>   | 1 Kallang Place                                   |
| <b>City/Zip Code</b>     | 339211                                            |
| <b>Country</b>           | Singapore                                         |

### 3. Equipment under Assessment

|                                                     |                                                                                                                                                                                |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Model No:</b>                                    | 66802146                                                                                                                                                                       |
| <b>Hardware Version:</b>                            | 121-A2-000508-A                                                                                                                                                                |
| <b>Software Version:</b>                            | 121-SWE-000002-1.15.A01318                                                                                                                                                     |
| <b>FCC ID</b>                                       | 2AWH9-VJIII                                                                                                                                                                    |
| <b>IC ID</b>                                        | 26135-VJIII                                                                                                                                                                    |
| <b>Product Description:</b>                         | The VERSAJET III Hydrosurgery System is intended for applications that in the healthcare professionals' judgment, require sharp debridement.                                   |
| <b>Power Supply/ Rated Operating Voltage Range:</b> | Vmin: 100 VAC, Vmax: 240 VAC                                                                                                                                                   |
| <b>Operating Temperature Range:</b>                 | Tmin: 10 °C / Tmax: 32 °C                                                                                                                                                      |
| <b>Radios included in the device:</b>               | RFID: Texas Instruments TRF7970A                                                                                                                                               |
| <b>EUT Dimensions(mm):</b>                          | 40mm x 33mm x 17.2mm                                                                                                                                                           |
| <b>Weight:</b>                                      | 14 kg                                                                                                                                                                          |
| <b>Co-located Transmitters/ Antennas:</b>           | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                                                                                            |
| <b>Exposure Category:</b>                           | <input type="checkbox"/> Occupational/ Controlled <input checked="" type="checkbox"/> General Population/ Uncontrolled                                                         |
| <b>Device Category:</b>                             | <input type="checkbox"/> Fixed Installation <input type="checkbox"/> Mobile<br><input checked="" type="checkbox"/> Portable <input type="checkbox"/> Mixed Mobile and Portable |
| <b>EUT Diameter</b>                                 | <input checked="" type="checkbox"/> < 60 cm <input type="checkbox"/> Other _____                                                                                               |
| <b>Sample Revision</b>                              | <input type="checkbox"/> Prototype Unit; <input type="checkbox"/> Production Unit; <input checked="" type="checkbox"/> Pre-Production                                          |

#### 4. FCC Exemption Limits for Routine Evaluation

##### 4.1. FCC SAR test exclusions are set by KDB 447498 D01 General RF Exposure Guidance v06

KDB 447498 Section: 4.3.1. Standalone SAR test exclusion considerations

a) For 100 MHz to 6 GHz and test separation distances  $\leq 50$  mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

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

- $f(\text{GHz})$  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
- The values 3.0 and 7.5 are referred to as *numeric thresholds* in step b) below

The test exclusions are applicable only when the minimum *test separation distance* is  $\leq 50$  mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum *test separation distance* is  $< 5$  mm, a distance of 5 mm according to 4.1 f) is applied to determine SAR test exclusion.

##### 4.2. RSS-102

ISED RSS-102 Section: 2.5.1 Exemption Limits for Routine Evaluation — SAR Evaluation

SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table 1. Output power level shall be the higher of the maximum conducted or equivalent isotropically radiated power (e.i.r.p.) source-based, time-averaged output power.

Table with limits for the frequencies off interest

| Frequency (MHz) | d[mm] | Exemption Limits [mW] |
|-----------------|-------|-----------------------|
| 450             | 5     | 52                    |
| 835             | 5     | 17                    |
| 1900            | 5     | 7                     |
| 2450            | 5     | 4                     |
| 3500            | 5     | 2                     |

## 5. Stand-Alone SAR Evaluation Exclusion

### 5.1. Justification for using the 5 mm Distance

The conservative distance of 5 mm is an estimate of how close a human body can be to the device in its typical application.

### 5.2. SAR Exclusion Calculation Table

According to KDB 447498, SAR evaluation can be excluded if the following equation is satisfied:

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

| FCC Standalone Transmission SAR Exclusion Calculations |                 |                               |                   |            |              |                |              |           |
|--------------------------------------------------------|-----------------|-------------------------------|-------------------|------------|--------------|----------------|--------------|-----------|
| Band                                                   | Frequency (GHz) | Max.Measured Output Power(mW) | Source Based Duty | Load based | Distance(mm) | Effective Time | P1/D*SQRT(F) | 1-g ≤ 3.0 |
| RFID                                                   | 0.01356         | 0.00                          | 1.00              | 1          | 5            | 5.91562E-08    | 1.37772E-09  | Yes       |

## 6. Revision History

| Date       | Template Revision                   | Changes to report | Prepared by |
|------------|-------------------------------------|-------------------|-------------|
| 2022-01-13 | EMC_SMITH-014-20001_FCC_ISED_SAR_EX | Initial Version   | Cheng Song  |

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