

## APPENDIX H OF TEST REPORT T101210A\_F

### GRAPHS OF EMI MEASUREMENT

**FCC ID:** MOQ-LF700

**Manufacturer:** Laser Force International Pty Ltd

**Test Sample:** Laser Force Laser Tag Amusement System

**Model Number:** LF7 (Battlesuit)

**Serial Number:** 03221 (Battlesuit)

**Date:** 12<sup>th</sup> April 2011

## **APPENDIX H**

### **GRAPHS OF EMI MEASUREMENT**

#### **RADIATED EMI**

|                                         |                                               |                     |
|-----------------------------------------|-----------------------------------------------|---------------------|
| <b>Graph 1:</b>                         | Vertical Polarisation                         | 29 to 1000MHz       |
| <b>Graph 2:</b>                         | Horizontal Polarisation                       | 29 to 1000MHz       |
| <b>Graph 3:</b>                         | Vertical Polarisation                         | 1000 to 18000MHz    |
| <b>Graph 4:</b>                         | Horizontal Polarisation                       | 1000 to 18000MHz    |
| <b>Graph 5:</b>                         | Vertical Polarisation                         | 18000 to 25000MHz   |
| <b>Graph 6:</b>                         | Horizontal Polarisation                       | 18000 to 25000MHz   |
| <b>Testing performed on Battle Suit</b> |                                               |                     |
| <b>Graph 7:</b>                         | <b>Low Channel</b> Horizontal Polarisation    | 2399.9 to 2400.9MHz |
| <b>Graph 8:</b>                         | <b>Middle Channel</b> Horizontal Polarisation | 2440 to 2441 MHz    |
| <b>Graph 9:</b>                         | <b>High Channel</b> Horizontal Polarisation   | 2480 to 2481 MHz    |

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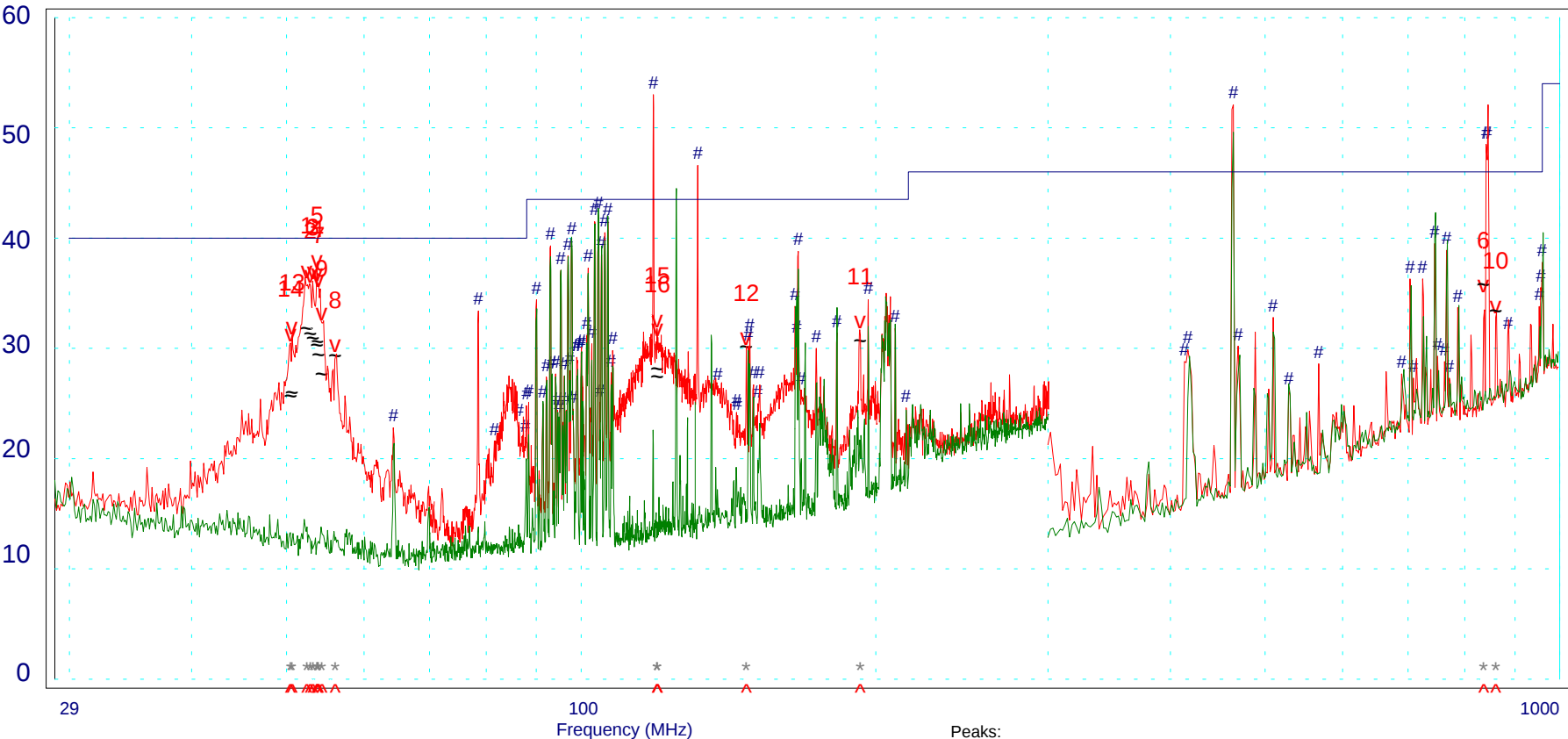
FCC Class B  
Radiated Emissions (dBuV/m)  
# = Ambient

Job No:T101210

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Test Date: 11-04-2011

GRAPH No. 1



Laserforce International  
Lasertag Amusement System  
Battlesuit, Model: LF7, Serial Number: 03221  
Battlesuit - Normal Operation

Limits:  
FCC-B3      FCC CLASS B RAD 3M LIMITS

Legend:  
— Vertical Ambients  
— Vertical Emissions

Ver 5.5 Build 158  
Colo Radiated Test Setup  
t:A0690113 c1:C0200312 c2:NONE p:A0960511 a:NONE  
Site ID: OATS#1,1247 Upper Colo Rd. Colo, NSW  
Test Officer:Dale Matthews

Source:  
01210r108 , 9 , 10 ,11 ,12 ,1  
01210r1013 ,14 ,15 ,16 ,17 ,24

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| Peaks: |            |               |        |                 |          |
|--------|------------|---------------|--------|-----------------|----------|
| No     | Freq (MHz) | Peak (dBuV/m) | QP Val | FCC-B3 (dBuV/m) | dL1 (dB) |
| 1      | 52.46      | 36.3          | 31.0   | 40.0            | -9.0     |
| 2      | 52.87      | 35.9          | 30.5   | 40.0            | -9.5     |
| 3      | 53.23      | 36.2          | 30.2   | 40.0            | -9.8     |
| 4      | 53.76      | 36.0          | 29.8   | 40.0            | -10.2    |
| 5      | 53.73      | 37.2          | 29.5   | 40.0            | -10.5    |
| 6      | 835.74     | 35.0          | 35.0   | 46.0            | -11.0    |
| 7      | 53.91      | 35.4          | 28.6   | 40.0            | -11.4    |
| 8      | 56.07      | 29.6          | 28.5   | 40.0            | -11.5    |
| 9      | 54.34      | 32.5          | 26.8   | 40.0            | -13.2    |
| 10     | 860.35     | 33.1          | 32.6   | 46.0            | -13.4    |
| 11     | 192.83     | 31.8          | 29.9   | 43.5            | -13.6    |
| 12     | 147.47     | 30.2          | 29.3   | 43.5            | -14.2    |
| 13     | 50.67      | 31.2          | 25.2   | 40.0            | -14.8    |
| 14     | 50.49      | 30.6          | 24.9   | 40.0            | -15.1    |
| 15     | 119.57     | 31.8          | 27.4   | 43.5            | -16.1    |
| 16     | 119.65     | 31.0          | 26.6   | 43.5            | -16.9    |

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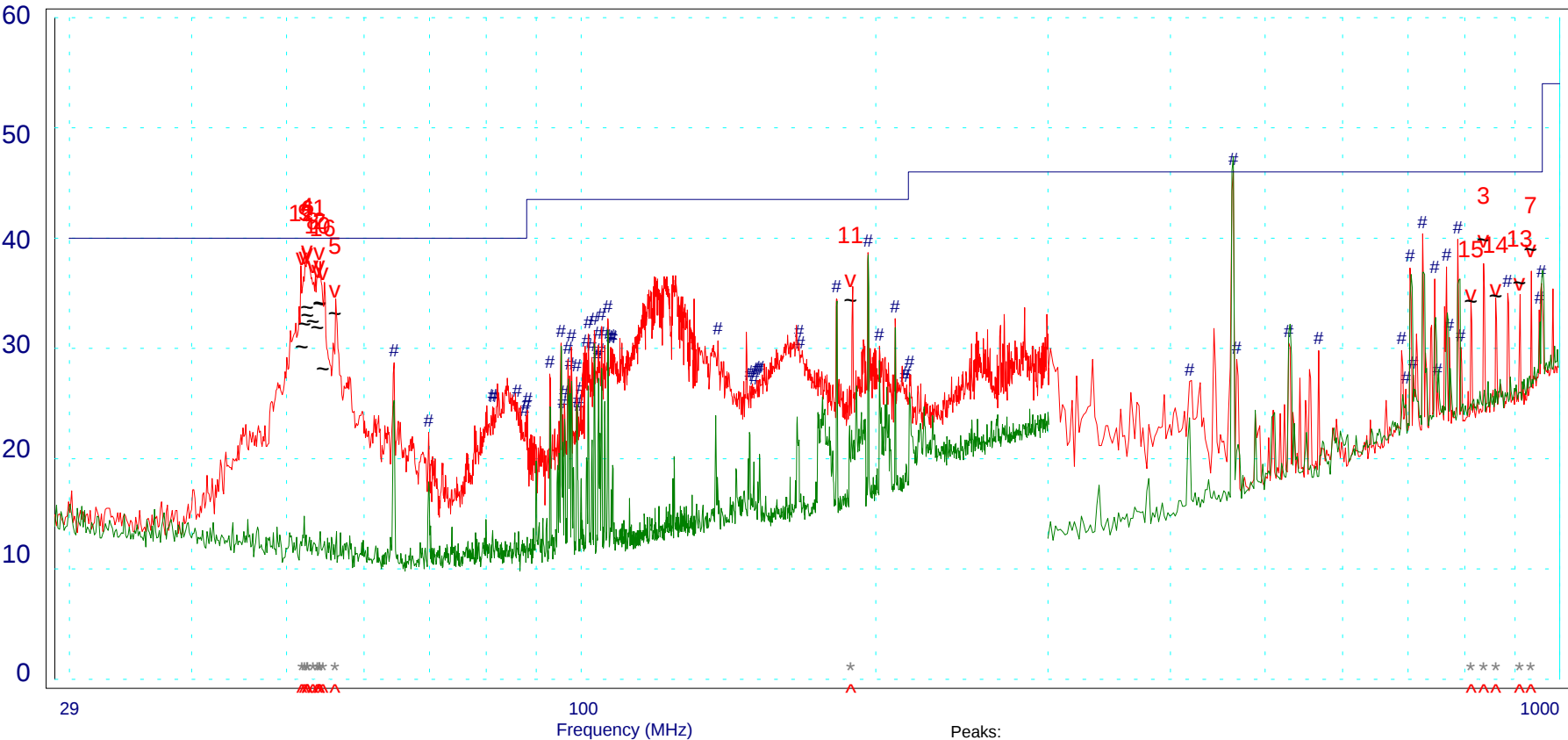
FCC Class B  
Radiated Emissions (dBuV/m)  
# = Ambient

Job No:T101210

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Test Date: 11-04-2011

GRAPH No. 2



Laserforce International  
Lasertag Amusement System  
Battlesuit, Model: LF7, Serial Number: 03221  
Battlesuit - Normal Operation

Limits:  
FCC-B3      FCC CLASS B RAD 3M LIMITS

Legend:  
— Horizontal Ambients  
— Horizontal Emissions

Ver 5.5 Build 158  
Colo Radiated Test Setup  
t:A0690113 c1:C0200312 c2:NONE p:A0960511 a:NONE  
Site ID: OATS#1,1247 Upper Colo Rd. Colo, NSW  
Test Officer:Dale Matthews

Source:  
01210r103 , 4 , 5 , 6 , 7 , 2  
01210r1018 , 19 , 20 , 21 , 22 , 23

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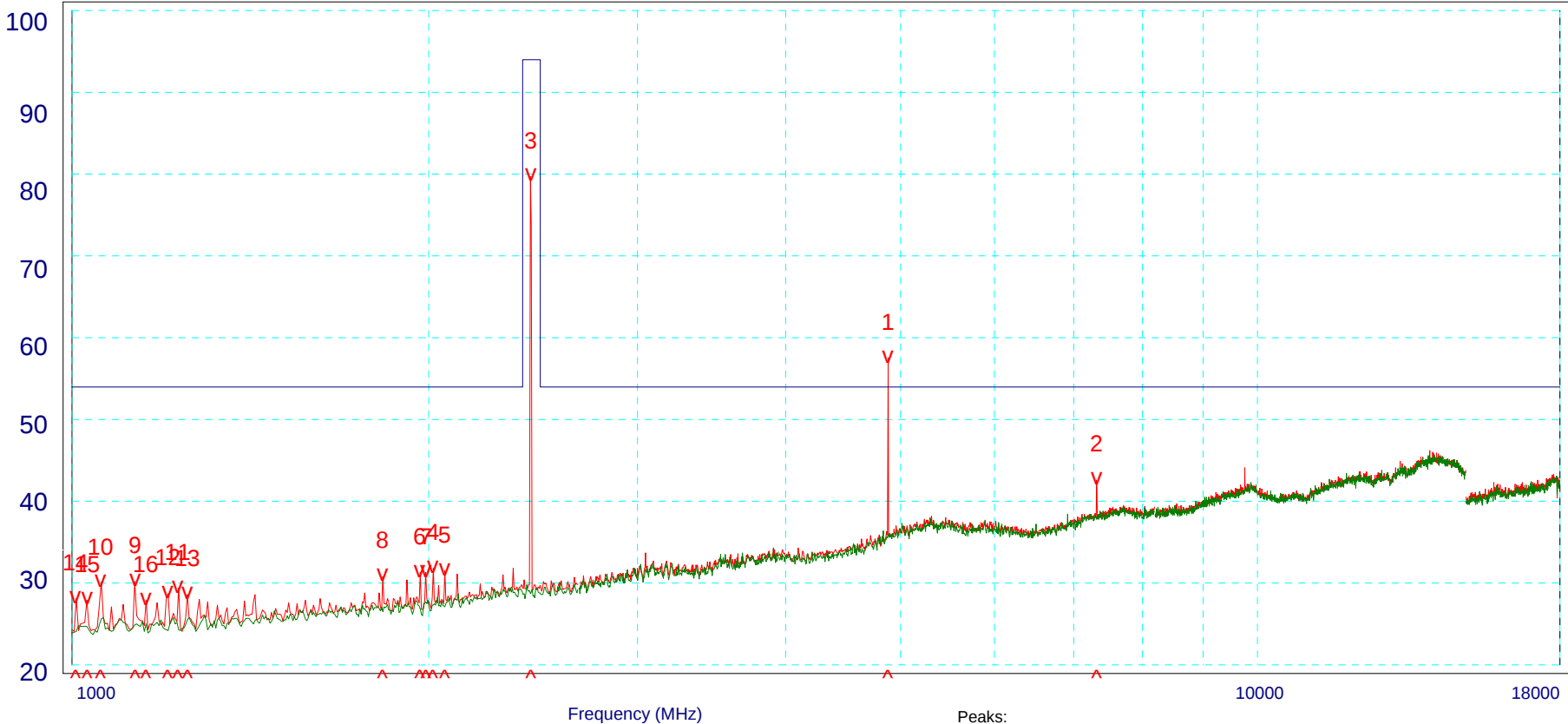
| Peaks: |            |               |        |                 |          |
|--------|------------|---------------|--------|-----------------|----------|
| No     | Freq (MHz) | Peak (dBuV/m) | QP Val | FCC-B3 (dBuV/m) | dL1 (dB) |
| 1      | 54.04      | 37.9          | 33.3   | 40.0            | -6.7     |
| 2      | 54.04      | 36.7          | 33.2   | 40.0            | -6.8     |
| 3      | 835.75     | 39.1          | 39.1   | 46.0            | -6.9     |
| 4      | 52.49      | 38.1          | 32.9   | 40.0            | -7.1     |
| 5      | 56.04      | 34.5          | 32.4   | 40.0            | -7.6     |
| 6      | 52.53      | 37.9          | 32.2   | 40.0            | -7.8     |
| 7      | 934.06     | 38.2          | 38.2   | 46.0            | -7.8     |
| 8      | 53.23      | 36.7          | 31.6   | 40.0            | -8.4     |
| 9      | 52.16      | 37.6          | 31.4   | 40.0            | -8.6     |
| 10     | 53.76      | 36.3          | 31.1   | 40.0            | -8.9     |
| 11     | 188.57     | 35.5          | 33.6   | 43.5            | -9.9     |
| 12     | 51.83      | 37.4          | 29.4   | 40.0            | -10.6    |
| 13     | 909.48     | 35.1          | 35.1   | 46.0            | -10.9    |
| 14     | 860.32     | 34.6          | 33.9   | 46.0            | -12.1    |
| 15     | 811.17     | 34.2          | 33.5   | 46.0            | -12.5    |
| 16     | 54.47      | 36.1          | 27.3   | 40.0            | -12.7    |

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FCC Class B  
Radiated Emissions (dBuV/m)  
# = Ambient

Job No:T101210      p:\PCF\101210AF\_3.PCF  
Test Date: 11-04-2011

GRAPH No. 3



Laser Force International Pty Ltd  
Laser Force Laser Tag Amusement System  
Battlesuit, Model: LF7, Serial Number: 03221  
Average Measurements

Limits:  
Fcc15249b      FCC 15.249 b (2400-2483.5MHz) Intentional Radiator Limits

Ver 5.5 Build 160  
Radiated Emissions 12.4 to 40GHz  
t:A2621112 c1:C0240212 c2:NONE p:A1380212 a:NONE  
Site ID: OATS#1,1247 Upper Colo Rd. Colo, NSW  
Test Officer:Christian Kai

Source:  
01210RC1 , 2 , 3 , 4 , 5 , 6 , 7 , 34  
01210RC24 , 25 , 26 , 27 , 28 , 29 , 30 , 31

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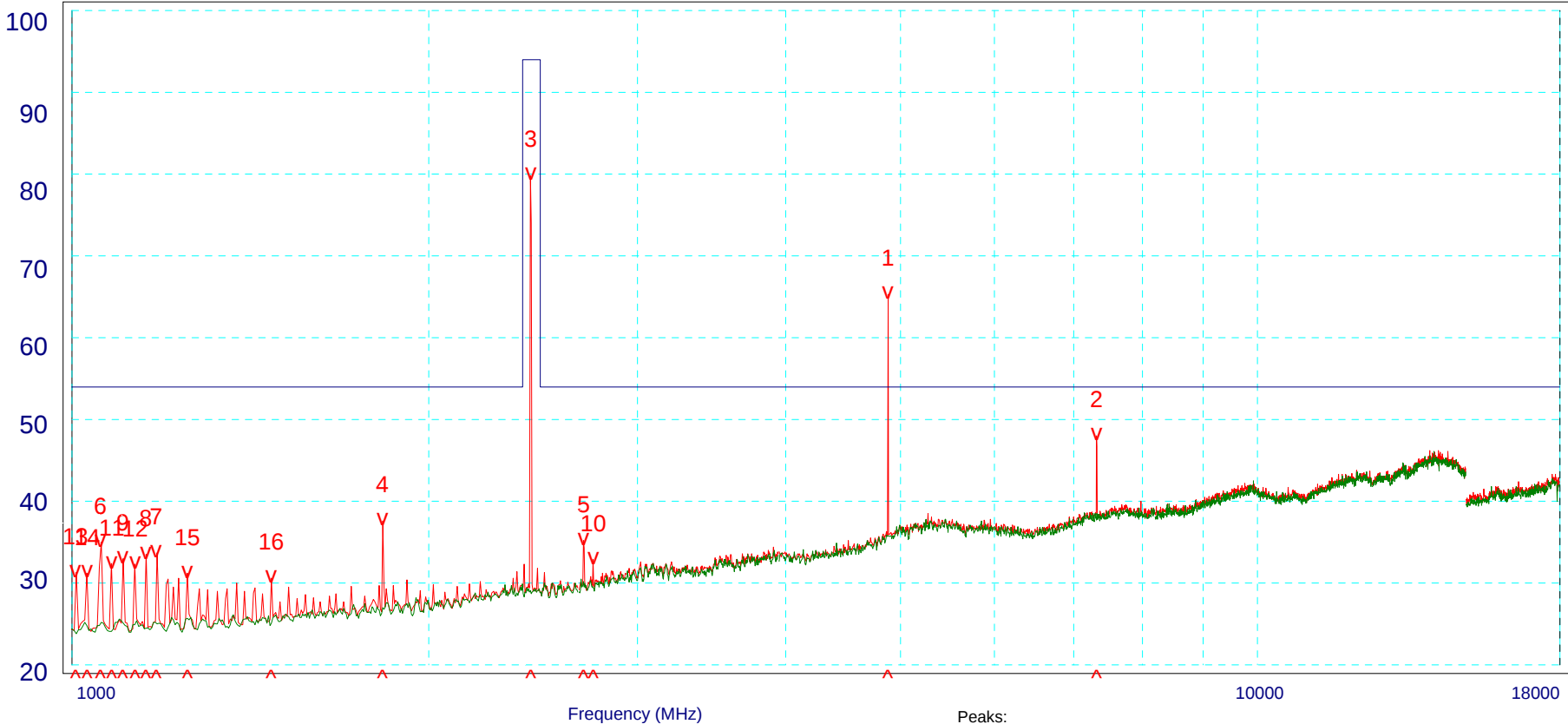
| Peaks: |            |               |                |
|--------|------------|---------------|----------------|
| No     | Freq (MHz) | Peak (dBuV/m) | Fcc15249b (dB) |
| 1      | 4878.84    | 57.5          | 54.0           |
| 2      | 7317.33    | 42.6          | 54.0           |
| 3      | 2437.71    | 79.7          | 94.0           |
| 4      | 2015.44    | 31.8          | 54.0           |
| 5      | 2062.36    | 31.5          | 54.0           |
| 6      | 1965.17    | 31.3          | 54.0           |
| 7      | 1988.63    | 31.3          | 54.0           |
| 8      | 1827.77    | 30.8          | 54.0           |
| 9      | 1130.70    | 30.2          | 54.0           |
| 10     | 1056.97    | 30.0          | 54.0           |
| 11     | 1227.89    | 29.4          | 54.0           |
| 12     | 1204.43    | 28.7          | 54.0           |
| 13     | 1251.35    | 28.6          | 54.0           |
| 14     | 1006.70    | 28.1          | 54.0           |
| 15     | 1030.16    | 27.9          | 54.0           |
| 16     | 1154.16    | 27.9          | 54.0           |

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FCC Class B  
Radiated Emissions (dBuV/m)  
# = Ambient

Job No:T101210      p:\PCF\101210AF\_4.PCF  
Test Date: 11-04-2011

GRAPH No. 4



Laser Force International Pty Ltd  
Laser Force Laser Tag Amusement System  
Battlesuit, Model: LF7, Serial Number: 03221  
Average Measurements

Limits:  
Fcc15249b      FCC 15.249 b (2400-2483.5MHz) Intentional Radiator Limits

Legend:  
Horizontal Ambients  
Horizontal Emissions

Ver 5.5 Build 160  
Radiated Emissions 12.4 to 40GHz  
t:A2621112 c1:C0240212 c2:NONE p:A1380212 a:NONE  
Site ID: OATS#1,1247 Upper Colo Rd. Colo, NSW  
Test Officer:Christian Kai

Source:  
01210RC9 , 10 ,11 ,12 ,13 ,14 ,15 ,33  
01210RC17 ,18 ,19 ,20 ,21 ,22 ,23 ,32

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| Peaks: |            |               |                |
|--------|------------|---------------|----------------|
| No     | Freq (MHz) | Peak (dBuV/m) | Fcc15249b (dB) |
| 1      | 4878.84    | 65.3          | 54.0           |
| 2      | 7317.33    | 48.0          | 54.0           |
| 3      | 2437.71    | 79.8          | 94.0           |
| 4      | 1827.77    | 37.6          | 54.0           |
| 5      | 2701.83    | 35.2          | 54.0           |
| 6      | 1056.97    | 35.0          | 54.0           |
| 7      | 1177.62    | 33.7          | 54.0           |
| 8      | 1154.16    | 33.5          | 54.0           |
| 9      | 1103.89    | 33.0          | 54.0           |
| 10     | 2752.57    | 32.9          | 54.0           |
| 11     | 1080.43    | 32.4          | 54.0           |
| 12     | 1130.70    | 32.3          | 54.0           |
| 13     | 1006.70    | 31.3          | 54.0           |
| 14     | 1030.16    | 31.2          | 54.0           |
| 15     | 1251.35    | 31.2          | 54.0           |
| 16     | 1472.53    | 30.6          | 54.0           |

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FCC Class B

Radiated Emissions (dBuV/m)

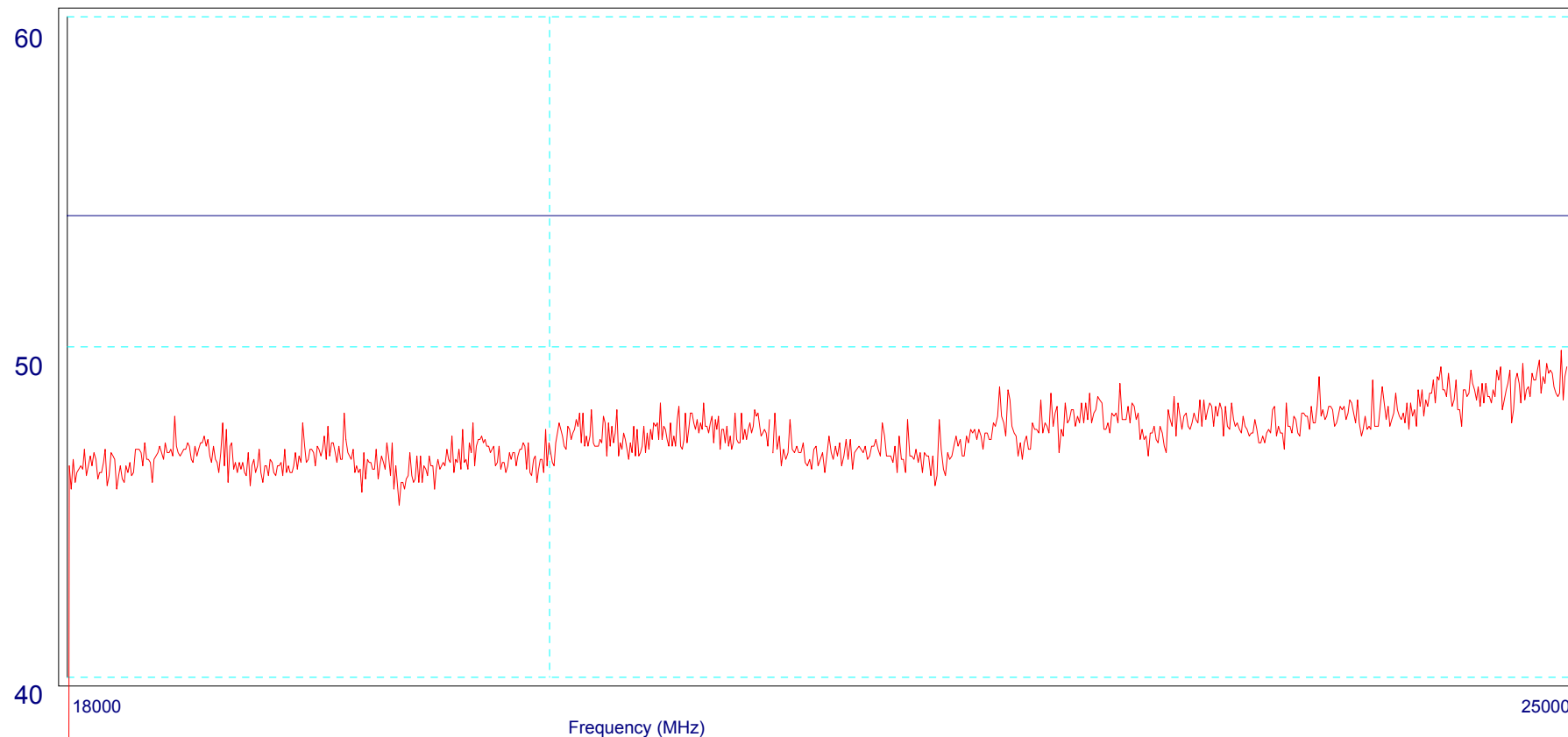
# = Ambient

Job No:T101210

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Test Date: 11-04-2011

GRAPH No. 5



Laser Force International Pty Ltd  
Laser Force Laser Tag Amusement System  
**Battlesuit, Model: LF7, Serial Number: 03221**  
Average Measurements

Limits:  
Fcc15249b FCC 15.249 b (2400-2483.5MHz) Intentional Radiator Limits

Legend:  
— Vertical Emissions

Ver 5.5 Build 160  
Radiated Test Setup 3m 1 - 26.5GHz  
t:A3051210 c1:C4140311 c2:NONE p:NONE a:NONE  
Site ID: OATS#1,1247 Upper Colo Rd. Colo, NSW  
Test Officer:Dale Matthews

Source:  
**101210R0 , 4**

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FCC Class B  
Radiated Emissions (dBuV/m)  
# = Ambient

Job No:T101210      P:\PCF\T101210f\_12.PCF  
Test Date: 11-04-2011

GRAPH No. 6



Laser Force International Pty Ltd  
Laser Force Laser Tag Amusement System  
Battlesuit, Model: LF7, Serial Number: 03221  
Average Measurements

Limits: Fcc15249b      FCC 15.249 b (2400-2483.5MHz) Intentional Radiator Limits      Legend: — Horizontal Emissions

Ver 5.5 Build 160  
Radiated Test Setup 3m 1 - 26.5GHz  
t:A3051210 c1:C4140311 c2:NONE p:NONE a:NONE  
Site ID: OATS#1,1247 Upper Colo Rd. Colo, NSW  
Test Officer:Dale Matthews

Source: 101210R01 , 2

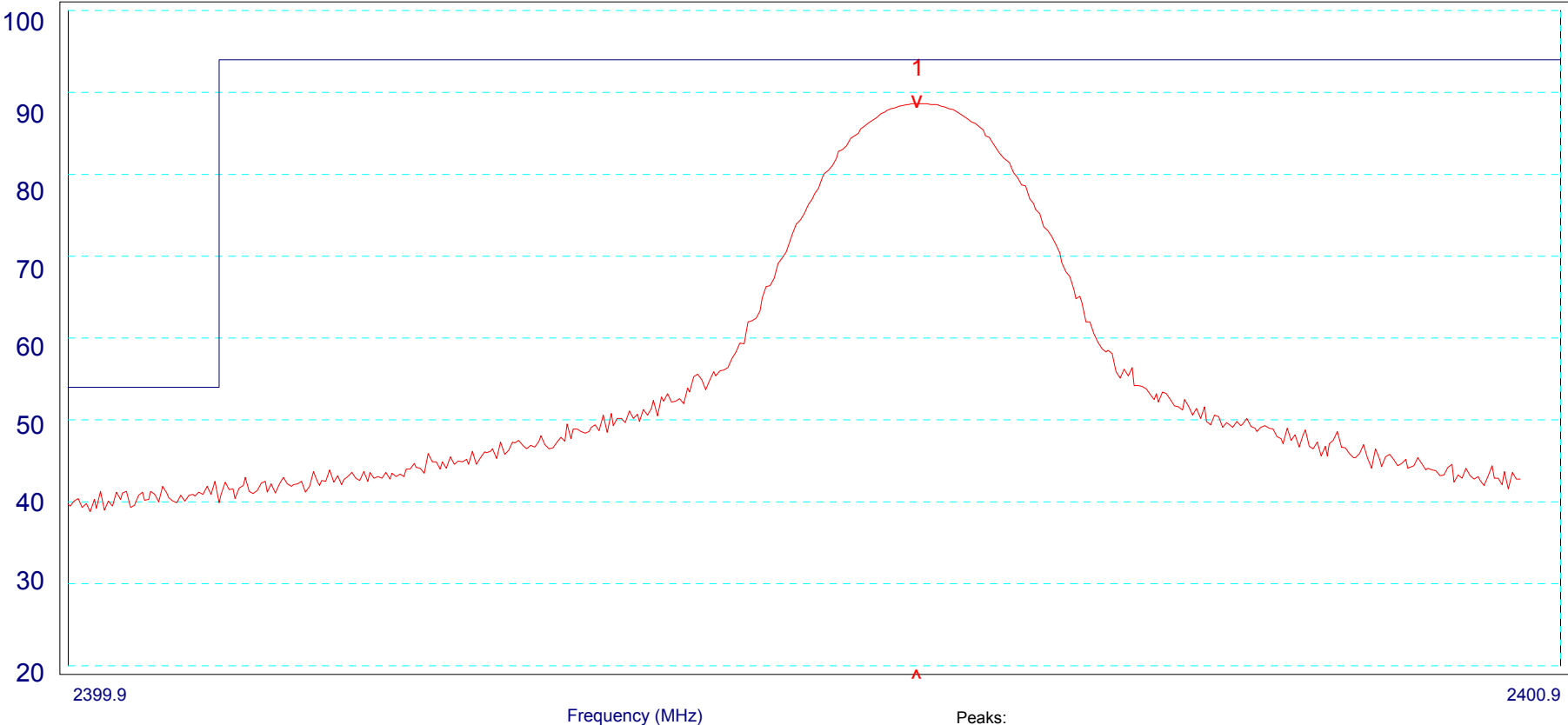
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FCC Class B  
Radiated Emissions (dBuV/m)  
# = Ambient

Job No:T101210      P:\PCF\T101210f\_5.PCF  
Test Date: 02-02-2011

GRAPH No. 7



Laser Force International Pty Ltd  
Laser Force Laser Tag Amusement System  
Battlesuit, Model: LF7, Serial Number: 03221  
Low Channel: 2400MHz

| Peaks: |            |               |                    |          |
|--------|------------|---------------|--------------------|----------|
| No     | Freq (MHz) | Peak (dBuV/m) | Fcc15249b (dBuV/m) | dL1 (dB) |
| 1      | 2400.47    | 88.6          | 94.0               | -5.4     |

Limits: Fcc15249b      FCC 15.249 b (2400-2483.5MHz) Intentional Radiator Limits

Legend: Horizontal Emissions

Ver 5.5 Build 160  
Colo Radiated Test Setup 3m 1 - 18GHz  
t:A3240311 c1:C0240211 c2:NONE p:NONE a:NONE  
Site ID: OATS#1,1247 Upper Colo Rd. Colo, NSW  
Test Officer:Dale Matthews

Source: 101210r44

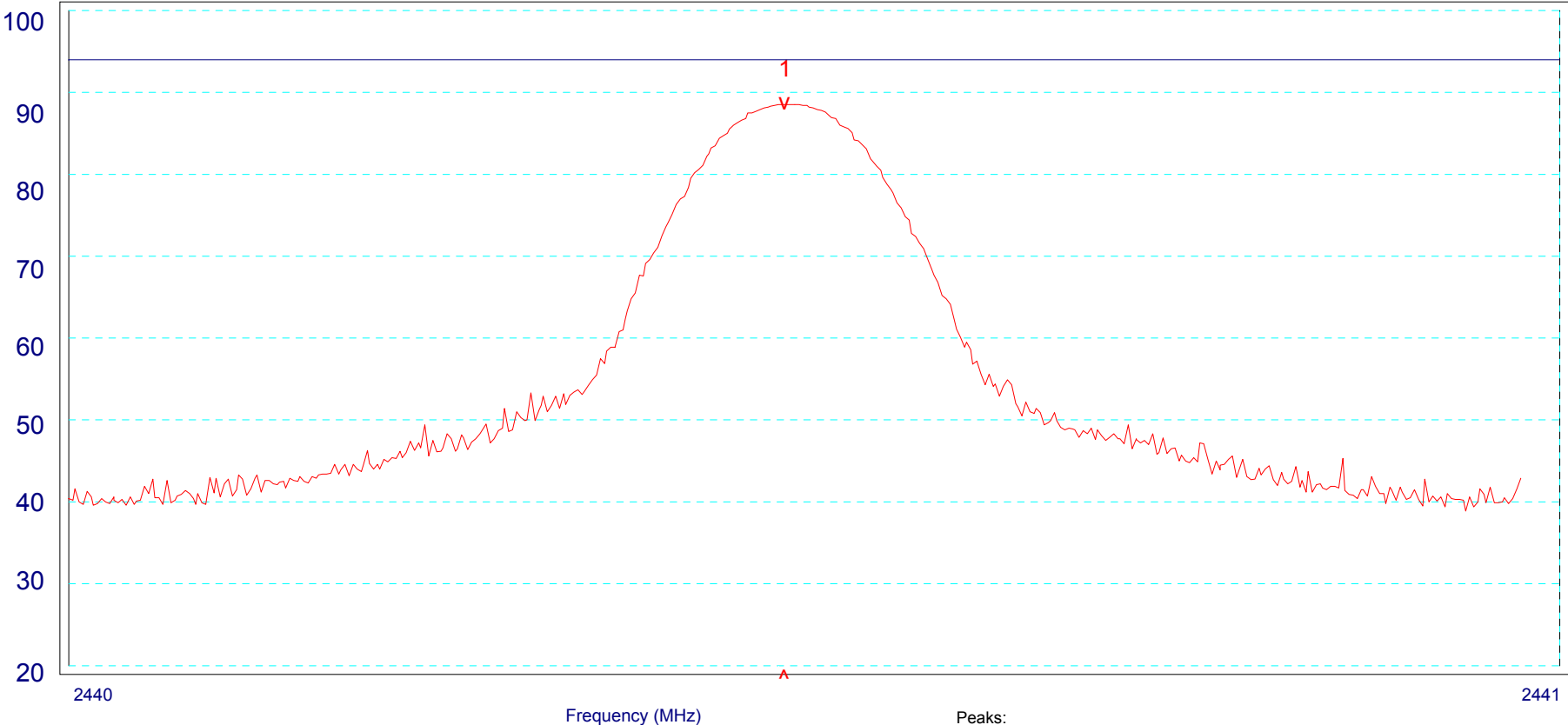
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FCC Class B  
Radiated Emissions (dBuV/m)  
# = Ambient

Job No:T101210      P:\PCF\T101210f\_6.PCF  
Test Date: 02-02-2011

GRAPH No. 8



Laser Force International Pty Ltd  
Laser Force Laser Tag Amusement System  
Battlesuit, Model: LF7, Serial Number: 03221  
Middle Channel: 2440MHz

Limits: Fcc15249b      FCC 15.249 b (2400-2483.5MHz) Intentional Radiator Limits      Legend: — Horizontal Emissions

Ver 5.5 Build 160  
Colo Radiated Test Setup 3m 1 - 18GHz  
t:A3240311 c1:C0240211 c2:NONE p:NONE a:NONE  
Site ID: OATS#1,1247 Upper Colo Rd. Colo, NSW  
Test Officer:Dale Matthews

Source: 101210r45

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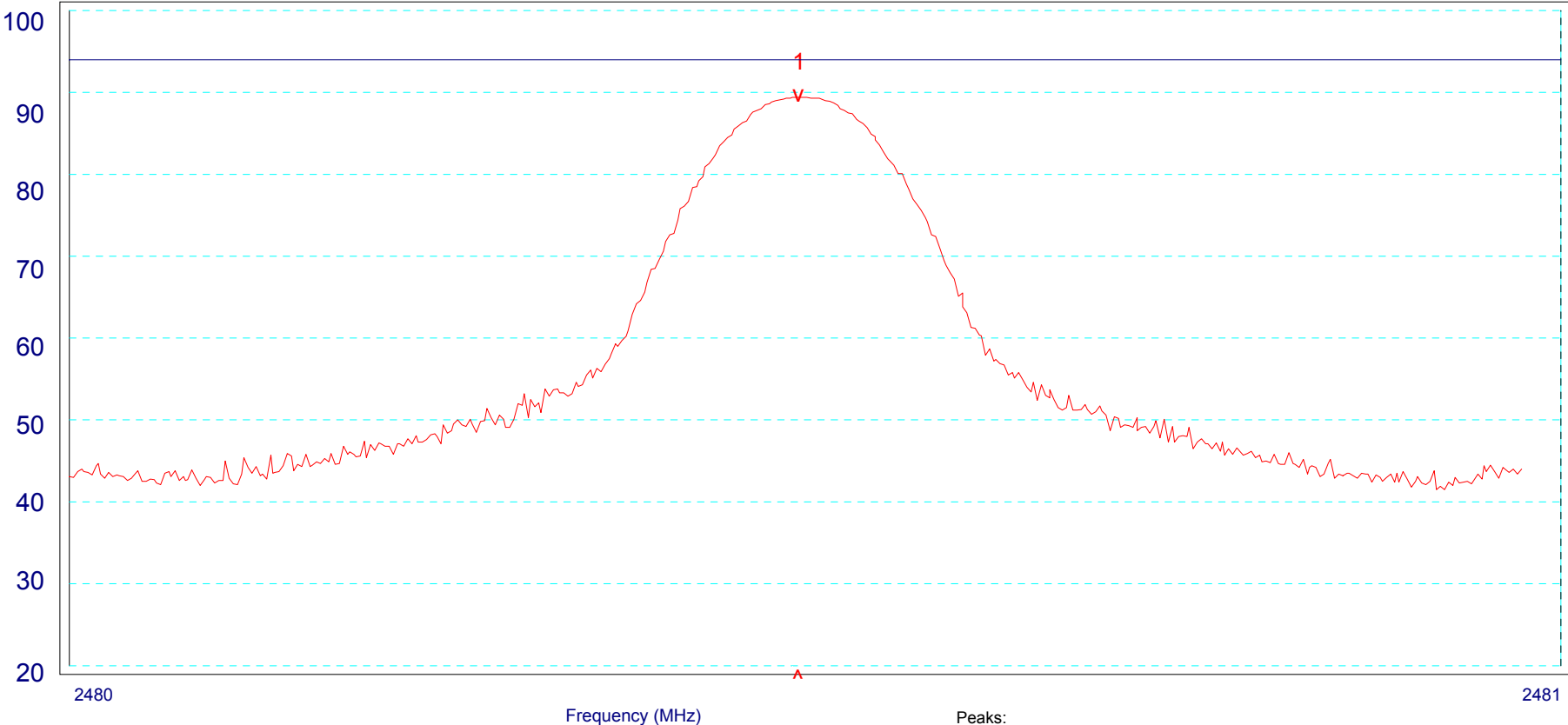
| Peaks: |            |               |                    |          |
|--------|------------|---------------|--------------------|----------|
| No     | Freq (MHz) | Peak (dBuV/m) | Fcc15249b (dBuV/m) | dL1 (dB) |
| 1      | 2440.48    | 88.5          | 94.0               | -5.5     |

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FCC Class B  
Radiated Emissions (dBuV/m)  
# = Ambient

Job No:T101210      P:\PCF\T101210f\_7.PCF  
Test Date: 02-02-2011

GRAPH No. 9



Laser Force International Pty Ltd  
Laser Force Laser Tag Amusement System  
Battlesuit, Model: LF7, Serial Number: 03221  
High Channel: 2480MHz

| Peaks: |            |               |                    |          |
|--------|------------|---------------|--------------------|----------|
| No     | Freq (MHz) | Peak (dBuV/m) | Fcc15249b (dBuV/m) | dL1 (dB) |
| 1      | 2480.49    | 89.4          | 94.0               | -4.6     |

Limits: Fcc15249b      FCC 15.249 b (2400-2483.5MHz) Intentional Radiator Limits

Legend: Horizontal Emissions

Ver 5.5 Build 160  
Colo Radiated Test Setup 3m 1 - 18GHz  
t:A3240311 c1:C0240211 c2:NONE p:NONE a:NONE  
Site ID: OATS#1,1247 Upper Colo Rd. Colo, NSW  
Test Officer:Dale Matthews

Source: 101210r46

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