

Test Report No.50157346 001

Appendix D: Radiated and Mains Spurious Emission Data

(File: 50157346AppendixD)

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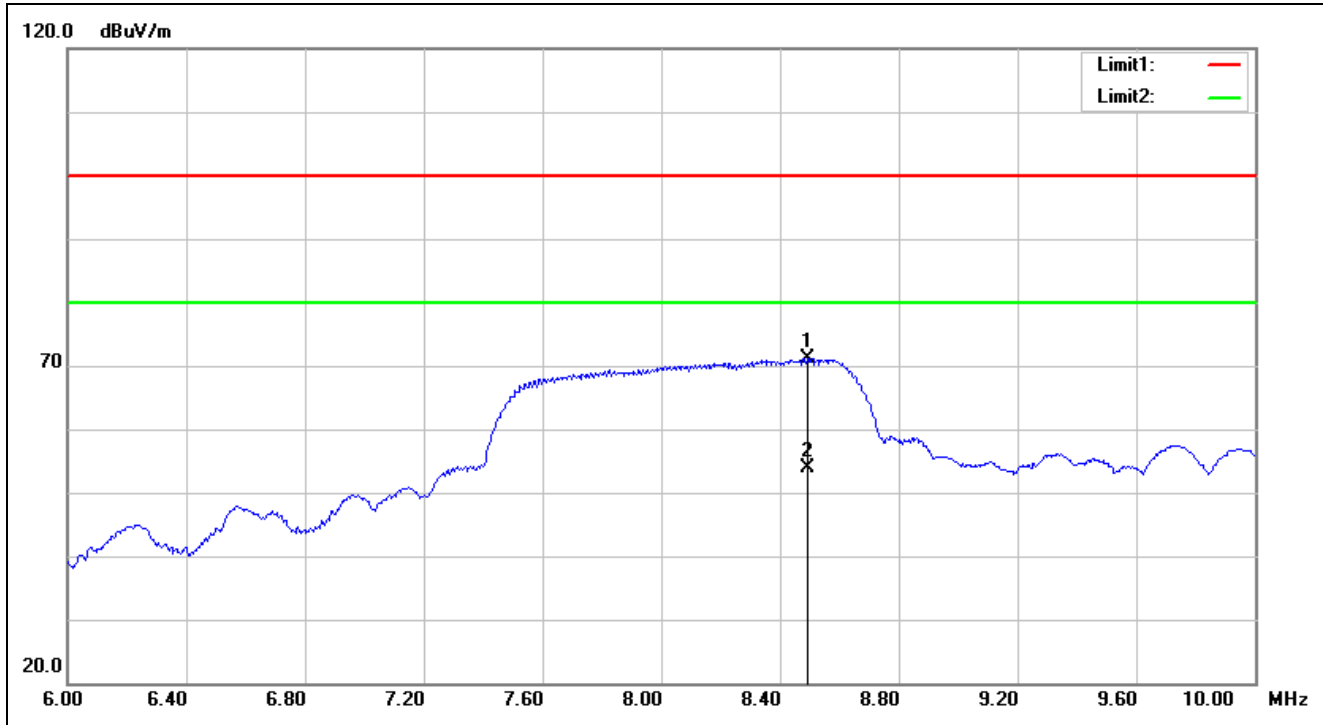
## Emissions, Fundamental



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|                |                                         |                    |                    |
|----------------|-----------------------------------------|--------------------|--------------------|
| Service No.:   | 114078743(ASSY T325R<br>RF+MD+RFID)_FCC | Test Distance:     | 3m                 |
| Test Standard: | FCC 15.223_Fundamental_PK_3m(dBuV/m)    | Ant. Polarization: | Vertical           |
| Test item:     | Radiation Emission                      | Test Time:         | 2018/7/12 20:15:21 |
| Applicant:     | Nedap                                   | Test Rating:       | AC 120V/60Hz       |
| Product:       | Lumen iL33                              | Temp.(°C)/Hum.(%): | 25(°C)/50%         |
| Model No.:     | ASSY T325R RF+MD+RFID                   | Test Engineer:     | Amy Hsu            |
| Test Mode:     | 8.2MHz-TX                               |                    |                    |
| Remark:        |                                         |                    |                    |

| No. | Frequency<br>(MHz) | Factor<br>(dB/m) | Reading<br>(dBuV) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Det. | Height<br>(cm) | Azimuth<br>( ° ) | Remark |
|-----|--------------------|------------------|-------------------|-------------------|-------------------|----------------|------|----------------|------------------|--------|
| 1   | 8.4920             | 20.00            | 51.09             | 71.09             | 100.00            | -28.91         | peak | 100            | 265              |        |
| 2   | 8.4920             | 20.00            | 34.00             | 54.00             | 80.00             | -26.00         | AVG  | 100            | 265              |        |

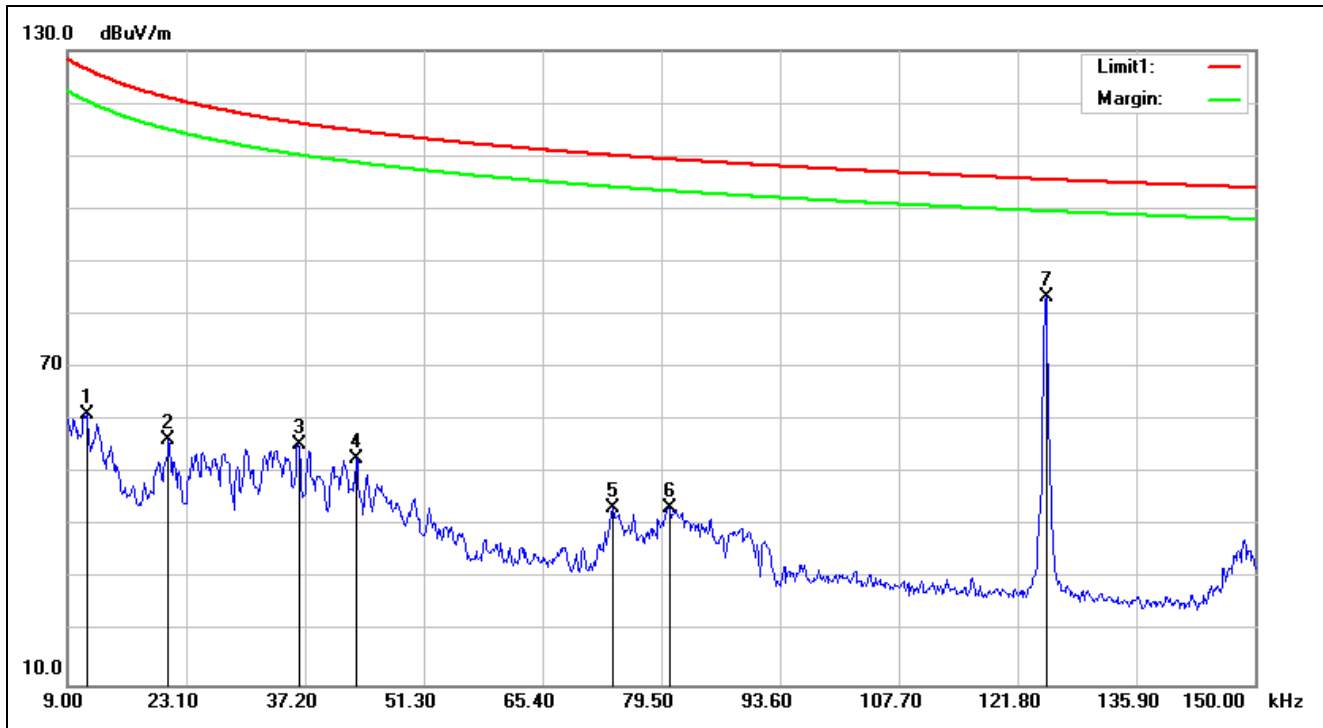
## Spurious Emissions, TX Mode, 9-150 kHz



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|                |                                      |                    |                    |
|----------------|--------------------------------------|--------------------|--------------------|
| Service No.:   | 114078743(ASSY T325R RF+MD+RFID)_FCC | Test Distance:     | 3m                 |
| Test Standard: | FCC15.209_9k-1G_3m                   | Ant. Polarization: |                    |
| Test item:     | Radiation Emission                   | Test Time:         | 2018/7/12 19:55:50 |
| Applicant:     | Nedap                                | Test Rating:       | AC 120V/60Hz       |
| Product:       | Lumen iL33                           | Temp.(°C)/Hum.(%)  | 25(°C)/50%         |
| Model No.:     | ASSY T325R RF+MD+RFID                | Test Engineer:     | Amy Hsu            |
| Test Mode:     |                                      |                    |                    |
| Remark:        |                                      |                    |                    |

| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (°) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|-------------|--------|
| 1   | 0.0113          | 18.57         | 42.70          | 61.27          | 126.34         | -65.07      | QP   | 100         | 317         |        |
| 2   | 0.0210          | 18.96         | 37.25          | 56.21          | 120.99         | -64.78      | QP   | 100         | 285         |        |
| 3   | 0.0364          | 19.19         | 36.33          | 55.52          | 116.24         | -60.72      | QP   | 100         | 320         |        |
| 4   | 0.0433          | 19.05         | 33.74          | 52.79          | 114.74         | -61.95      | QP   | 100         | 320         |        |
| 5   | 0.0737          | 18.64         | 24.68          | 43.32          | 110.15         | -66.83      | QP   | 100         | 256         |        |
| 6   | 0.0803          | 18.56         | 24.86          | 43.42          | 109.41         | -65.99      | QP   | 100         | 248         |        |
| 7   | 0.1252          | 18.33         | 65.05          | 83.38          | 105.58         | -22.20      | QP   | 100         | 104         | TX     |

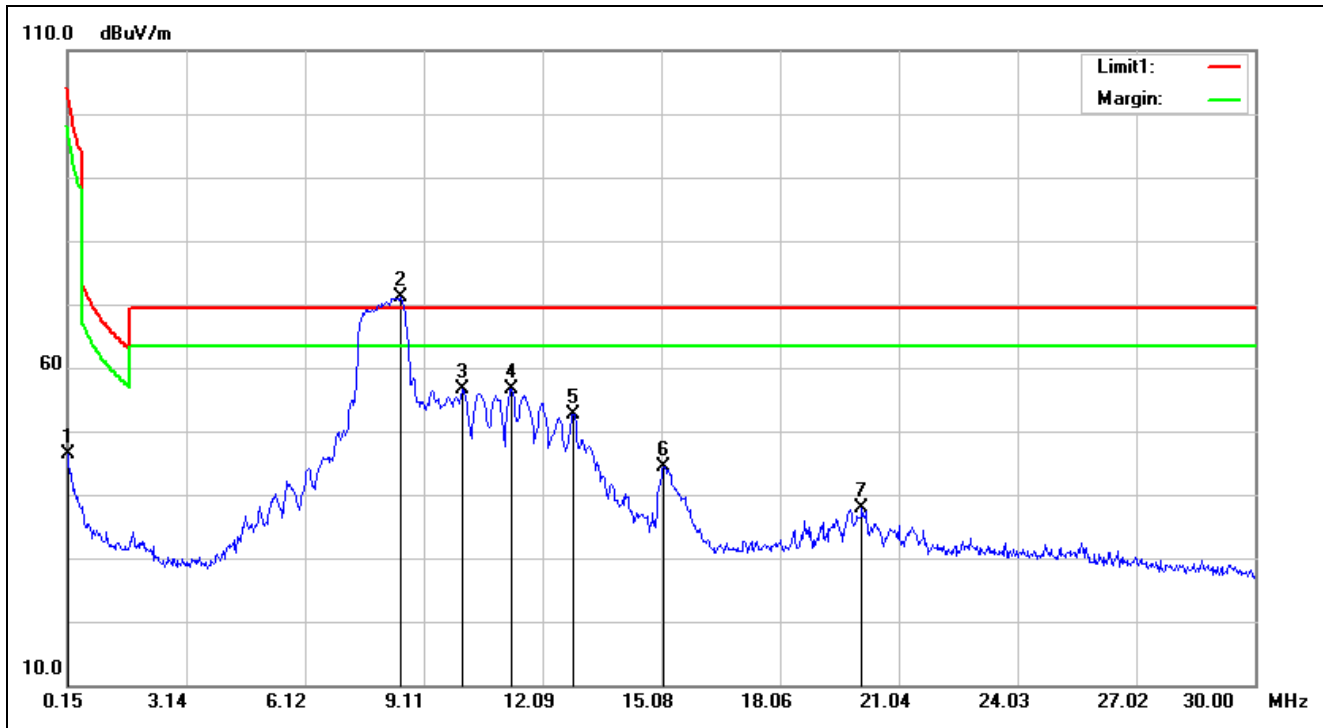
# Spurious Emissions, TX Mode, 150 kHz -30MHz



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|                |                                      |                    |                    |
|----------------|--------------------------------------|--------------------|--------------------|
| Service No.:   | 114078743(ASSY T325R RF+MD+RFID)_FCC | Test Distance:     | 3m                 |
| Test Standard: | FCC15.209_9k-1G_3m                   | Ant. Polarization: |                    |
| Test item:     | Radiation Emission                   | Test Time:         | 2018/7/12 19:58:22 |
| Applicant:     | Nedap                                | Test Rating:       | AC 120V/60Hz       |
| Product:       | Lumen iL33                           | Temp.(°C)/Hum.(%): | 25(°C)/50%         |
| Model No.:     | ASSY T325R RF+MD+RFID                | Test Engineer:     | Amy Hsu            |
| Test Mode:     |                                      |                    |                    |
| Remark:        |                                      |                    |                    |

| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (°) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|-------------|--------|
| 1   | 0.1500          | 18.34         | 28.01          | 46.35          | 104.02         | -57.67      | QP   | 100         | 263         |        |
| 2   | 8.5378          | 20.01         | 51.11          | 71.12          | 69.50          | 1.62        | QP   | 100         | 81          | TX     |
| 3   | 10.0900         | 20.29         | 36.23          | 56.52          | 69.50          | -12.98      | QP   | 100         | 73          |        |
| 4   | 11.3139         | 20.42         | 36.25          | 56.67          | 69.50          | -12.83      | QP   | 100         | 222         |        |
| 5   | 12.8660         | 20.61         | 32.04          | 52.65          | 69.50          | -16.85      | QP   | 100         | 272         |        |
| 6   | 15.1347         | 20.85         | 23.49          | 44.34          | 69.50          | -25.16      | QP   | 100         | 277         |        |
| 7   | 20.1196         | 21.40         | 16.43          | 37.83          | 69.50          | -31.67      | QP   | 100         | 89          |        |

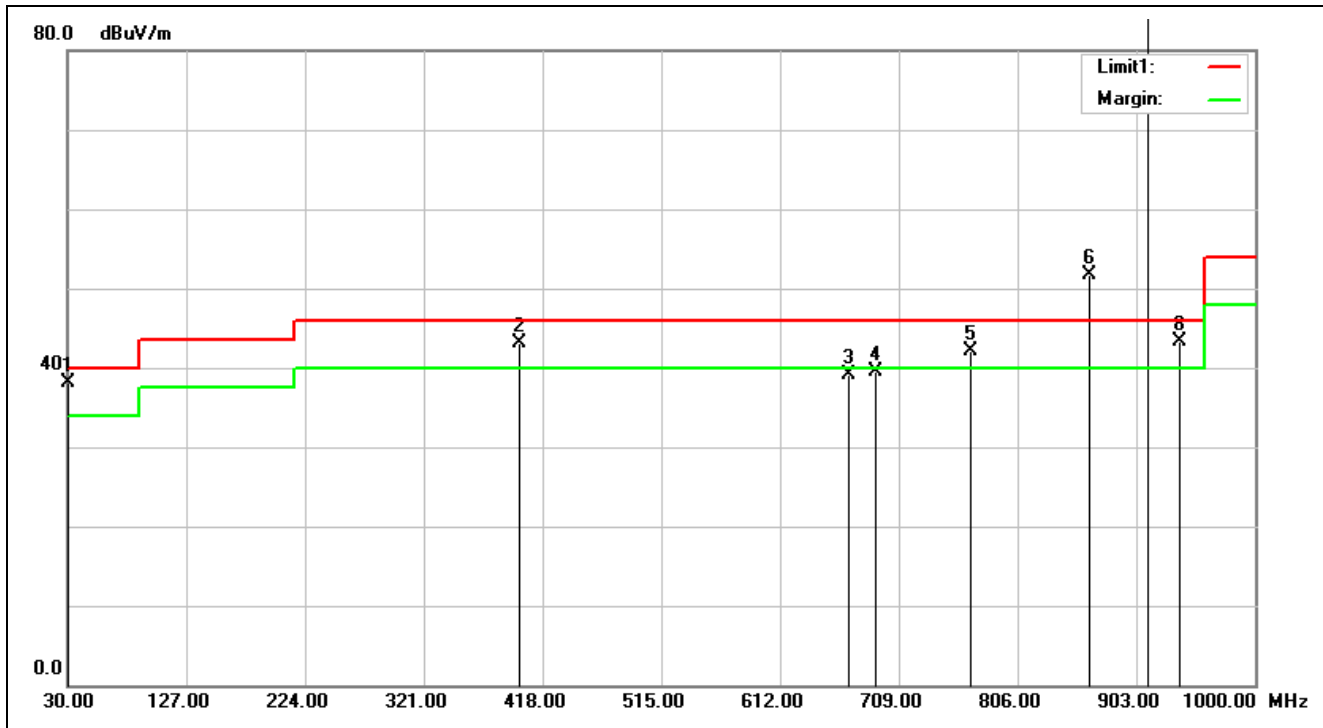
# Spurious Emissions, TX Mode, 30MHz-1GHz



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Service No.: 114078743(ASSY T325R RF+MD+RFID)\_FCC Test Distance: 3m

Test Standard: FCC Class B 3M Radiation Ant. Polarization: Horizontal

Test item: Radiation Emission Test Time: 2018/7/12 12:45:56

Applicant: Nedap Test Rating: AC 120V/60Hz

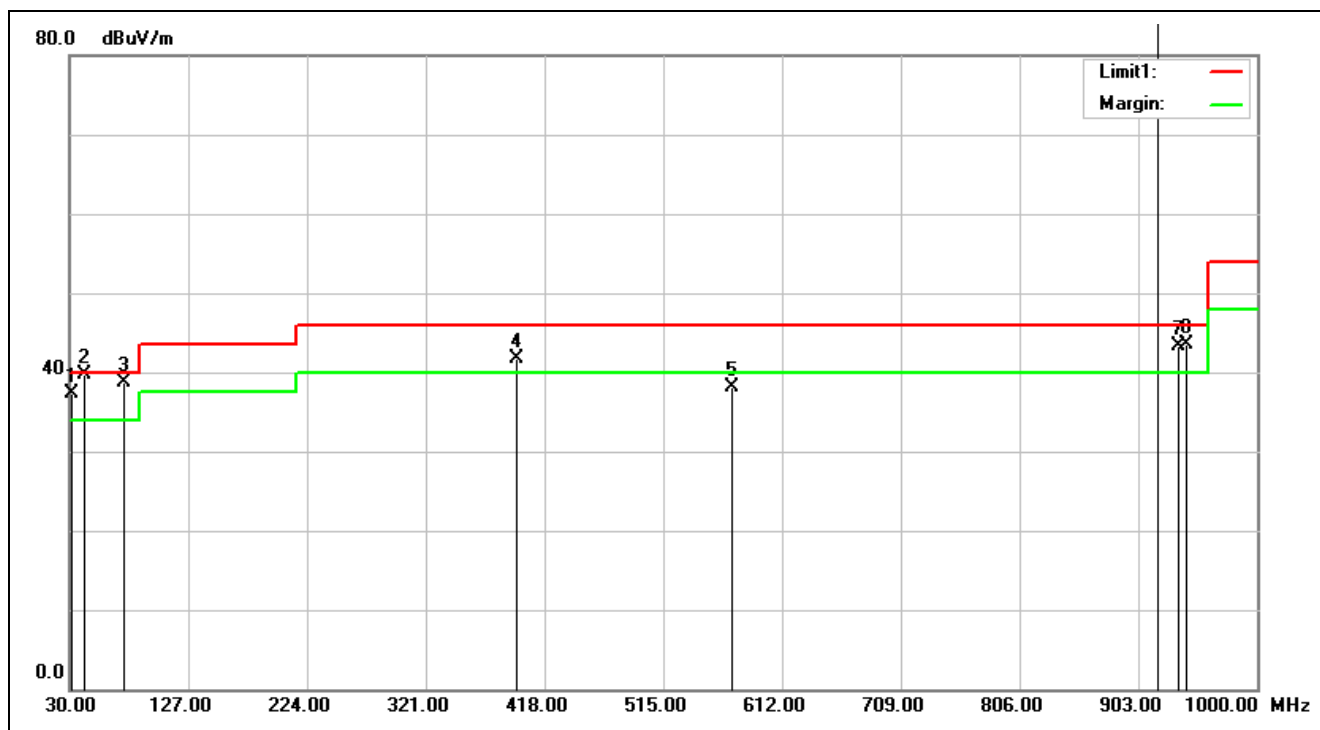
Product: Lumen iL33 Temp.(°C)/Hum.(%): 25(°C)/50%

Model No.: ASSY T325R RF+MD+RFID Test Engineer: Amy Hsu

Test Mode:

Remark:

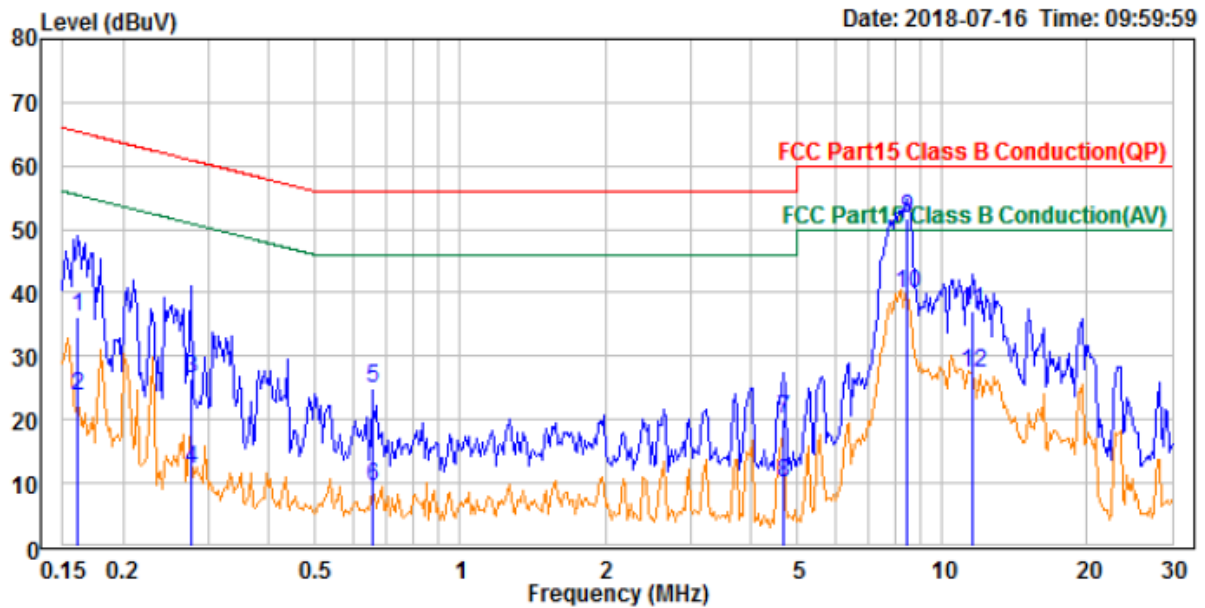
| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth ( ° ) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|--------|
| 1   | 30.0000         | -0.47         | 38.67          | 38.20          | 40.00          | -1.80       | QP   | 100         | 207           |        |
| 2   | 399.5700        | -3.28         | 46.43          | 43.15          | 46.00          | -2.85       | QP   | 100         | 62            |        |
| 3   | 668.2600        | -0.27         | 39.47          | 39.20          | 46.00          | -6.80       | QP   | 100         | 327           |        |
| 4   | 690.5700        | 0.04          | 39.46          | 39.50          | 46.00          | -6.50       | QP   | 100         | 265           |        |
| 5   | 768.1700        | 1.40          | 40.80          | 42.20          | 46.00          | -3.80       | QP   | 100         | 161           |        |
| 6   | 864.2000        | 2.67          | 48.96          | 51.63          | 59.72          | -8.09       | QP   | 100         | 163           |        |
| 7   | 912.7000        | 3.23          | 122.49         | 125.72         | 46.00          | 79.72       | QP   | 100         | 265           | TX UHF |
| 8   | 937.9200        | 3.93          | 39.47          | 43.40          | 46.00          | -2.60       | QP   | 100         | 276           |        |



|                |                                      |                    |                    |
|----------------|--------------------------------------|--------------------|--------------------|
| Service No.:   | 114078743(ASSY T325R RF+MD+RFID)_FCC | Test Distance:     | 3m                 |
| Test Standard: | FCC Class B 3M Radiation             | Ant. Polarization: | Vertical           |
| Test item:     | Radiation Emission                   | Test Time:         | 2018/7/12 12:47:00 |
| Applicant:     | Nedap                                | Test Rating:       | AC 120V/60Hz       |
| Product:       | Lumen iL33                           | Temp.(°C)/Hum.(%)  | 25(°C)/50%         |
| Model No.:     | ASSY T325R RF+MD+RFID                | Test Engineer:     | Amy Hsu            |
| Test Mode:     |                                      |                    |                    |

| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (°) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|-------------|--------|
| 1   | 31.9400         | -1.58         | 38.98          | 37.40          | 40.00          | -2.60       | QP   | 100         | 306         |        |
| 2   | 42.6100         | -7.67         | 47.47          | 39.80          | 40.00          | -0.20       | QP   | 100         | 322         |        |
| 3   | 74.6200         | -12.98        | 51.78          | 38.80          | 40.00          | -1.20       | QP   | 100         | 127         |        |
| 4   | 395.6899        | -3.34         | 45.04          | 41.70          | 46.00          | -4.30       | QP   | 100         | 279         |        |
| 5   | 571.2600        | -1.22         | 39.42          | 38.20          | 46.00          | -7.80       | QP   | 100         | 52          |        |
| 6   | 918.5200        | 3.39          | 123.02         | 126.41         | 46.00          | 80.41       | QP   | 100         | 49          | TX     |
| 7   | 935.9800        | 3.88          | 39.52          | 43.40          | 46.00          | -2.60       | QP   | 100         | 317         |        |
| 8   | 941.8000        | 4.04          | 39.56          | 43.60          | 46.00          | -2.40       | QP   | 100         | 133         |        |

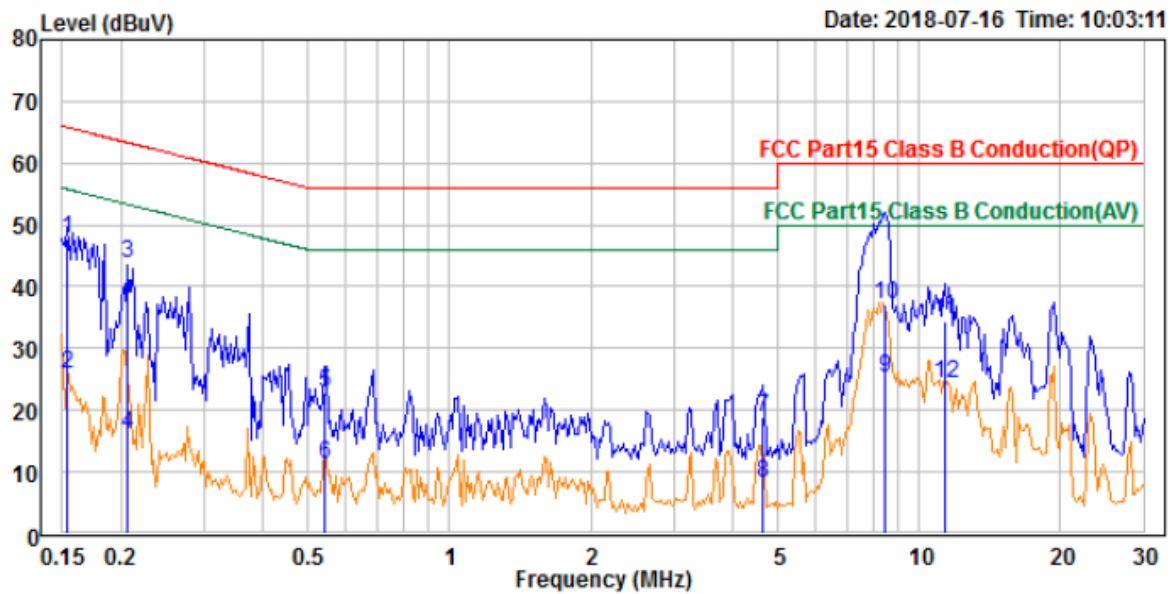
# Mains Spurious Emissions



Trace: 1

Site : Conduction room  
 Condition : FCC Part15 Class B Conduction(QP) line1  
 Test Engineer: Joe Tien  
 Applicant : Nedap  
 Product : Lumen iL33  
 Model No. : ASSY T325R RF+MD+RFID  
 Test Rating : 120Vac/60Hz  
 Tmp/Hum : 28.1 °C / 29%  
 Memo : Normal operation

|    | Freq   | Read Level | Factor | Level | Limit Line | Over Limit | Remark  |
|----|--------|------------|--------|-------|------------|------------|---------|
|    | MHz    | dBuV       | dB     | dBuV  | dBuV       | dB         |         |
| 1  | 0.161  | 26.61      | 9.68   | 36.29 | 65.42      | -29.13     | QP      |
| 2  | 0.161  | 13.92      | 9.68   | 23.60 | 55.42      | -31.82     | Average |
| 3  | 0.278  | 16.80      | 9.68   | 26.48 | 60.88      | -34.40     | QP      |
| 4  | 0.278  | 2.43       | 9.68   | 12.11 | 50.88      | -38.77     | Average |
| 5  | 0.660  | 15.26      | 9.69   | 24.95 | 56.00      | -31.05     | QP      |
| 6  | 0.660  | -0.29      | 9.69   | 9.40  | 46.00      | -36.60     | Average |
| 7  | 4.675  | 10.20      | 9.76   | 19.96 | 56.00      | -36.04     | QP      |
| 8  | 4.675  | 0.29       | 9.76   | 10.05 | 46.00      | -35.95     | Average |
| 9  | 8.489  | 41.97      | 9.81   | 51.78 | 60.00      | -8.22      | QP      |
| 10 | 8.489  | 29.98      | 9.81   | 39.79 | 50.00      | -10.21     | Average |
| 11 | 11.553 | 27.20      | 9.84   | 37.04 | 60.00      | -22.96     | QP      |
| 12 | 11.553 | 17.48      | 9.84   | 27.32 | 50.00      | -22.68     | Average |



Trace: 1

Site : Conduction room

Condition : FCC Part15 Class B Conduction(QP) neutral

Test Engineer: Joe Tien

Applicant : Nedap

Product : Lumen iL33

Model No. : ASSY T325R RF+MD+RFID

Test Rating : 120Vac/60Hz

Tmp/Hum : 28.1 °C / 29%

Memo : Normal operation

|    | Freq   | Read Level | Factor | Level | Limit Line | Over Limit | Remark  |
|----|--------|------------|--------|-------|------------|------------|---------|
|    | MHz    | dBuV       | dB     | dBuV  | dBuV       | dB         |         |
| 1  | 0.153  | 38.20      | 9.68   | 47.88 | 65.83      | -17.95     | QP      |
| 2  | 0.153  | 16.06      | 9.68   | 25.74 | 55.83      | -30.09     | Average |
| 3  | 0.206  | 34.17      | 9.68   | 43.85 | 63.36      | -19.51     | QP      |
| 4  | 0.206  | 6.55       | 9.68   | 16.23 | 53.36      | -37.13     | Average |
| 5  | 0.541  | 13.27      | 9.68   | 22.95 | 56.00      | -33.05     | QP      |
| 6  | 0.541  | 1.43       | 9.68   | 11.11 | 46.00      | -34.89     | Average |
| 7  | 4.629  | 9.19       | 9.76   | 18.95 | 56.00      | -37.05     | QP      |
| 8  | 4.629  | -1.48      | 9.76   | 8.28  | 46.00      | -37.72     | Average |
| 9  | 8.489  | 15.34      | 9.82   | 25.16 | 60.00      | -34.84     | QP      |
| 10 | 8.489  | 27.17      | 9.82   | 36.99 | 50.00      | -13.01     | Average |
| 11 | 11.325 | 24.60      | 9.86   | 34.46 | 60.00      | -25.54     | QP      |
| 12 | 11.325 | 14.61      | 9.86   | 24.47 | 50.00      | -25.53     | Average |