

14 MAXIMUM PERMISSIBLE EXPOSURE (MPE)

14.1 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended to comply with Section Part 22, subpart H and Part 24, subpart E of the FCC CFR 47 Rules. And RSS-102 issue 4 For 47 CFR 1.1310 Radio frequency Radiation Exposure requirement.

14.2 Special Accessories

Not available for this EUT intended for grant.

14.3 Equipment Modifications

Not available for this EUT intended for grant.

14.4 Limitation

| Frequency Range (MHz) | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density (mW/cm ²) | Averaging Time (minute) |
|---|-------------------------------|-------------------------------|-------------------------------------|-------------------------|
| Limits for General Population/Uncontrolled Exposure | | | | |
| 0.3-1.34 | 614 | 1.63 | *(100) | 30 |
| 1.34-30 | 824/f | 2.19/f | *(180/f ²) | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1500 | / | / | F/1500 | 30 |
| 1500-15000 | / | / | 1.0 | 30 |

F = frequency in MHz

* = Plane-wave equipment power density

| Frequency Range (MHz) | Electric Field (V/m rms) | Magnetic Field (A/m rms) | Power Density (W/m ²) | Averaging Time (minutes) |
|-----------------------|--------------------------|--|-----------------------------------|--------------------------|
| 0.003-1 | 280 | 2.19 | - | 6 |
| 1-10 | 280/f | 2.19/f | - | 6 |
| 10-30 | 28 | 2.19/f | - | 6 |
| 30-300 | 28 | 0.073 | 2* | 6 |
| 300-1500 | 1.585 f ^{0.5} | 0.0042 f ^{0.5} | f/150 | 6 |
| 1500-15000 | 61.4 | 0.163 | 10 | 6 |
| 15000-150000 | 61.4 | 0.163 | 10 | 616000/f ^{1.2} |
| 150000-300000 | 0.158 f ^{0.5} | 4.21 x 10 ⁻⁴ f ^{0.5} | 6.67 x 10 ⁻⁵ f | 616000/f ^{1.2} |

Note: f is frequency in MHz.

* Power density limit is applicable at frequencies greater than 100 MHz.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

14.5 Maximum Permissible Exposure (MPE) Evaluation

In this application we seek approval to the VM2CG. Based on the FCC OET Bulletin 65 Supplement C and 47 CFR §2.1091, we have concluded VM2CG will comply with the FCC rules on RF exposure for mobile devices in cellular band and PCS band. The following analysis will demonstrate such compliance. The analysis will be done in two US bands.

Operation in cellular band (824 – 849 MHz) (First Antenna)

The ERP of VM2CG in cellular band is 24.49dBm max at GPRS 850 mode. The resulted power density at a distance of 20 cm can be deducted as follows:

| EUT | | | | Measurement | | | | | |
|----------------|------|-----------------------|-----|--------------|-------------|--------------|------------|--------------|-------|
| Operation Band | Pol. | Fundamental Frequency | CH | Antenna Pol. | S.G. Output | Antenna Gain | Cable Loss | ERP | Limit |
| | | MHz | | V/H | dBm | dBd | dB | dBm | dBm |
| GPRS 850 | E2 | 824.20 | 128 | V | 24.74 | 3.96 | -4.22 | 24.48 | 38.45 |
| | | | | H | 21.62 | 3.96 | -4.22 | 21.36 | 38.45 |
| | | 836.60 | 190 | V | 24.69 | 4.00 | -4.24 | 24.45 | 38.45 |
| | | | | H | 22.04 | 4.00 | -4.24 | 21.80 | 38.45 |
| | | 848.80 | 251 | V | 24.79 | 4.03 | -4.33 | 24.49 | 38.45 |
| | | | | H | 21.89 | 4.03 | -4.33 | 21.59 | 38.45 |

$$\text{ERP} = 24.49 \text{ dBm} = 281.190 \text{ mW}$$

$$\text{Power Density} = \text{ERP} \times \text{Duty Cycle} / (4 \pi R^2)$$

$$= 28.190 \times 0.25 / (4 \pi \times 20^2) = 0.0140 \text{ mW/cm}^2$$

where Duty Cycle is 0.25 for GPRS operation (class 10) and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$\text{MPE limit} = 848.8 / 1500 = 0.56 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore VM2CG in cellular band is compliant with the FCC rules on RF exposure

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Operation in PCS band (1850 – 1910 MHz) (First Antenna)

The EIRP of VM2CG in PCS band is 27.90dBm max at GPRS 1900 mode. The resulted power density at a distance of 20 cm can be deducted as follows:

| EUT | | | | Measurement | | | | | |
|----------------|------|-----------------------|-----|--------------|-------------|--------------|------------|--------------|-------|
| Operation Band | Pol. | Fundamental Frequency | CH | Antenna Pol. | S.G. Output | Antenna Gain | Cable Loss | EIRP | Limit |
| | | MHz | | V/H | dBm | dBi | dB | dBm | dBm |
| GPRS 1900 | E2 | 1850.20 | 512 | V | 29.21 | 4.17 | -5.49 | 27.90 | 33.00 |
| | | | | H | 26.82 | 4.51 | -5.49 | 25.85 | 33.00 |
| | | 1880.00 | 661 | V | 28.96 | 4.13 | -5.56 | 27.53 | 33.00 |
| | | | | H | 28.15 | 4.44 | -5.56 | 27.02 | 33.00 |
| | | 1909.80 | 810 | V | 28.38 | 4.09 | -5.56 | 26.91 | 33.00 |
| | | | | H | 28.71 | 4.36 | -5.56 | 27.52 | 33.00 |

$$\text{EIRP} = 27.90 \text{ dBm} = 616.595 \text{ mW}$$

$$\begin{aligned} \text{Power Density} &= \text{EIRP} \times \text{Duty Cycle} / (4 \times R^2) \\ &= 616.595 \times 0.25 / (4 \times 20^2) = 0.0307 \text{ mW/cm}^2 \end{aligned}$$

where Duty Cycle is 0.25 for GPRS operation (class 10) and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$\text{MPE limit} = 1.0 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore VM2CG in PCS band is compliant with the FCC rules on RF exposure.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Operation in HSUPA band II (1850 – 1910 MHz) (First Antenna)

The EIRP of VM2CG in PCS band is 27.91dBm max at HSUPA II mode. The resulted power density at a distance of 20 cm can be deducted as follows:

| EUT | | | | Measurement | | | | | |
|----------------|------|-----------------------|------|--------------|-------------|--------------|------------|--------------|-------|
| Operation Band | Pol. | Fundamental Frequency | CH | Antenna Pol. | S.G. Output | Antenna Gain | Cable Loss | EIRP | Limit |
| | | MHz | | V/H | dBm | dBi | dB | dBm | dBm |
| HSUPA Band II | E2 | 1852.4 | 9262 | V | 29.23 | 4.17 | -5.49 | 27.91 | 33.00 |
| | | | | H | 27.10 | 4.51 | -5.49 | 26.12 | 33.00 |
| | | 1880.0 | 9400 | V | 27.66 | 4.13 | -5.56 | 26.23 | 33.00 |
| | | | | H | 27.89 | 4.44 | -5.56 | 26.77 | 33.00 |
| | | 1907.6 | 9538 | V | 26.28 | 4.10 | -5.62 | 24.76 | 33.00 |
| | | | | H | 26.99 | 4.37 | -5.56 | 25.80 | 33.00 |

$$\text{ERP} = 27.91 \text{ dBm} = 618.016 \text{ mW}$$

$$\begin{aligned} \text{Power Density} &= \text{ERP} \times \text{Duty Cycle} / (4 \times R^2) \\ &= 618.016 \times 1 / (4 \times 20^2) = 0.01230 \text{ mW/cm}^2 \end{aligned}$$

where Duty Cycle is 1 for HSUPA band II mode and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$\text{MPE limit} = 1.0 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore VM2CG in cellular band is compliant with the FCC rules on RF exposure.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Operation in HSUPA band IV (1712.4 – 1752.6 MHz) (First Antenna)

The EIRP of VM2CG in PCS band is 26.87dBm max at HSUPA IV mode. The resulted power density at a distance of 20 cm can be deducted as follows:

| EUT | | | | Measurement | | | | | |
|----------------|------|-----------------------|------|--------------|-------------|--------------|------------|--------------|-------|
| Operation Band | Pol. | Fundamental Frequency | CH | Antenna Pol. | S.G. Output | Antenna Gain | Cable Loss | EIRP | Limit |
| | | MHz | | V/H | dBm | dBi | dB | dBm | dBm |
| HSUPA Band IV | E2 | 1712.4 | 1312 | V | 27.29 | 4.40 | -5.40 | 26.28 | 33.00 |
| | | | | H | 27.48 | 4.79 | -5.40 | 26.87 | 33.00 |
| | | 1732.6 | 1413 | V | 26.50 | 4.35 | -5.42 | 25.43 | 33.00 |
| | | | | H | 26.17 | 4.78 | -5.42 | 25.52 | 33.00 |
| | | 1752.6 | 1513 | V | 26.44 | 4.31 | -5.44 | 25.31 | 33.00 |
| | | | | H | 24.35 | 4.77 | -5.44 | 23.68 | 33.00 |

$$\text{EIRP} = 26.87 \text{ dBm} = 486.407 \text{ mW}$$

$$\begin{aligned} \text{Power Density} &= \text{EIRP} \times \text{Duty Cycle} / (4 \times R^2) \\ &= 486.407 \times 1 / (4 \times 20^2) = 0.0968 \text{ mW/cm}^2 \end{aligned}$$

where Duty Cycle is 1 for HSUPA band IV mode and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$\text{MPE limit} = 1.0 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore VM2CG in PCS band is compliant with the FCC rules on RF exposure.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Operation in HSDPA band V (826 – 849 MHz) (First Antenna)

The EIRP of VM2CG in cellular band is 22.47dBm max at HSDPA V mode. The resulted power density at a distance of 20 cm can be deducted as follows:

| EUT | | | | Measurement | | | | | |
|----------------|------|-----------------------|------|--------------|-------------|--------------|------------|--------------|-------|
| Operation Band | Pol. | Fundamental Frequency | CH | Antenna Pol. | S.G. Output | Antenna Gain | Cable Loss | EIRP | Limit |
| | | MHz | | V/H | dBm | dBi | dB | dBm | dBm |
| HSDPA Band V | E2 | 826.40 | 4132 | V | 22.62 | 3.97 | -4.22 | 22.36 | 38.45 |
| | | | | H | 16.86 | 3.97 | -4.22 | 16.61 | 38.45 |
| | | 836.60 | 4183 | V | 22.27 | 4.00 | -4.24 | 22.03 | 38.45 |
| | | | | H | 17.04 | 4.00 | -4.24 | 16.80 | 38.45 |
| | | 846.60 | 4233 | V | 22.69 | 4.02 | -4.24 | 22.47 | 38.45 |
| | | | | H | 19.07 | 4.02 | -4.24 | 18.86 | 38.45 |

$$\text{EIRP} = 22.47 \text{ dBm} = 176.604 \text{ mW}$$

$$\text{Power Density} = \text{EIRP} \times \text{Duty Cycle} / (4 \pi R^2)$$

$$= 176.604 \times 1 / (4 \pi \times 20^2) = 0.0351 \text{ mW/cm}^2$$

where Duty Cycle is 1 for HSDPA band V mode and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$\text{MPE limit} = 846.6 / 1500 = 0.56 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore VM2CG in PCS band is compliant with the FCC rules on RF exposure.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Operation in cellular band (824 – 849 MHz) (First Antenna)

The ERP of VM2CG in cellular band is 23.41dBm max at CDMA2000 Cellular mode. The resulted power density at a distance of 20 cm can be deducted as follows:

| EUT | | | | Measurement | | | | | |
|--------------------|------|-----------------------|------|--------------|-------------|--------------|------------|--------------|-------|
| Operation Band | Pol. | Fundamental Frequency | CH | Antenna Pol. | S.G. Output | Antenna Gain | Cable Loss | EIRP | Limit |
| | | MHz | | V/H | dBm | dBi | dB | dBm | dBm |
| CDMA 2000 Cellular | E2 | 824.70 | 1013 | V | 22.17 | 3.97 | -2.80 | 23.34 | 38.45 |
| | | | | H | 16.89 | 3.97 | -2.80 | 18.05 | 38.45 |
| | | 836.52 | 384 | V | 22.23 | 4.00 | -2.82 | 23.41 | 38.45 |
| | | | | H | 18.32 | 4.00 | -2.82 | 19.50 | 38.45 |
| | | 848.31 | 777 | V | 21.71 | 4.03 | -2.84 | 22.90 | 38.45 |
| | | | | H | 18.81 | 4.03 | -2.84 | 19.99 | 38.45 |

$$\text{ERP} = 23.41\text{dBm} = 216.281 \text{ mW}$$

$$\begin{aligned} \text{Power Density} &= \text{ERP} \times \text{Duty Cycle} / (4 \pi R^2) \\ &= 219.281 \times 1 / (4 \times \pi \times 20^2) = 0.0436 \text{ mW/cm}^2 \end{aligned}$$

where Duty Cycle is 1 for CDMA operation and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$\text{MPE limit} = 836.52/1500 = 0.56 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore VM2CG in cellular band is compliant with the FCC rules on RF exposure.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Operation in PCS band (1850 – 1910 MHz) (First Antenna)

The EIRP of VM2CG in PCS band is 28.04dBm max at CDMA2000 PCS mode. The resulted power density at a distance of 20 cm can be deducted as follows:

| EUT | | | | Measurement | | | | | |
|----------------|------|-----------------------|------|--------------|-------------|--------------|------------|--------------|-------|
| Operation Band | Pol. | Fundamental Frequency | CH | Antenna Pol. | S.G. Output | Antenna Gain | Cable Loss | EIRP | Limit |
| | | MHz | | V/H | dBm | dBi | dB | dBm | dBm |
| CDMA 2000 PCS | E2 | 1851.25 | 25 | V | 28.16 | 4.17 | -4.29 | 28.04 | 33.00 |
| | | | | H | 22.45 | 4.51 | -4.29 | 22.66 | 33.00 |
| | | 1880.00 | 600 | V | 27.33 | 4.13 | -4.33 | 27.13 | 33.00 |
| | | | | H | 23.58 | 4.44 | -4.33 | 23.69 | 33.00 |
| | | 1908.75 | 1175 | V | 26.27 | 4.10 | -4.37 | 26.00 | 33.00 |
| | | | | H | 23.81 | 4.37 | -4.37 | 23.81 | 33.00 |

$$\text{EIRP} = 28.04 \text{ dBm} = 636.766 \text{ mW}$$

$$\text{Power Density} = \text{EIRP} \times \text{Duty Cycle} / (4 \pi R^2)$$

$$= 636.766 \times 1 / (4 \pi \times 20^2) = 0.1267 \text{ mW/cm}^2$$

where Duty Cycle is 1 for CDMA2000 operation and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$\text{MPE limit} = 1.0 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore VM2CG in PCS band is compliant with the FCC rules on RF exposure.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Operation in cellular band (824 – 849 MHz) (Second Antenna)

The ERP of VM2CG in cellular band is 25.21dBm max at EDGE 850 mode. The resulted power density at a distance of 20 cm can be deducted as follows:

| EUT | | | | Measurement | | | | | |
|----------------|------|-----------------------|-----|--------------|-------------|--------------|------------|--------------|-------|
| Operation Band | Pol. | Fundamental Frequency | CH | Antenna Pol. | S.G. Output | Antenna Gain | Cable Loss | ERP | Limit |
| | | MHz | | V/H | dBm | dBd | dB | dBm | dBm |
| EDGE 850 | E2 | 824.20 | 128 | V | 25.33 | 3.96 | -4.22 | 25.07 | 38.45 |
| | | | | H | 24.55 | 3.96 | -4.22 | 24.29 | 38.45 |
| | | 836.60 | 190 | V | 25.25 | 4.00 | -4.24 | 25.01 | 38.45 |
| | | | | H | 24.29 | 4.00 | -4.24 | 24.05 | 38.45 |
| | | 848.80 | 251 | V | 25.51 | 4.03 | -4.33 | 25.21 | 38.45 |
| | | | | H | 24.11 | 4.03 | -4.33 | 23.81 | 38.45 |

$$\text{ERP} = 25.21 \text{ dBm} = 331.895 \text{ mW}$$

$$\begin{aligned} \text{Power Density} &= \text{ERP} \times \text{Duty Cycle} / (4 \times R^2) \\ &= 331.895 \times 0.25 / (4 \times 20^2) = 0.0165 \text{ mW/cm}^2 \end{aligned}$$

where Duty Cycle is 0.25 for GPRS operation (class 10) and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$\text{MPE limit} = 848.8 / 1500 = 0.57 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore VM2CG in cellular band is compliant with the FCC rules on RF exposure

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Operation in PCS band (1850 – 1910 MHz) (Second Antenna)

The EIRP of VM2CG in PCS band is 28.53dBm max at GPRS 1900 mode. The resulted power density at a distance of 20 cm can be deducted as follows:

| EUT | | | | Measurement | | | | | |
|----------------|------|-----------------------|-----|--------------|-------------|--------------|------------|--------------|-------|
| Operation Band | Pol. | Fundamental Frequency | CH | Antenna Pol. | S.G. Output | Antenna Gain | Cable Loss | EIRP | Limit |
| | | MHz | | V/H | dBm | dBi | dB | dBm | dBm |
| GPRS 1900 | E2 | 1850.20 | 512 | V | 28.44 | 4.17 | -5.49 | 27.13 | 33.00 |
| | | | | H | 20.54 | 4.51 | -5.49 | 19.56 | 33.00 |
| | | 1880.00 | 661 | V | 29.06 | 4.13 | -5.56 | 27.64 | 33.00 |
| | | | | H | 20.17 | 4.44 | -5.56 | 19.05 | 33.00 |
| | | 1909.80 | 810 | V | 29.99 | 4.09 | -5.56 | 28.53 | 33.00 |
| | | | | H | 20.12 | 4.36 | -5.56 | 18.93 | 33.00 |

$$\text{EIRP} = 28.53 \text{ dBm} = 712.853 \text{ mW}$$

$$\begin{aligned} \text{Power Density} &= \text{EIRP} \times \text{Duty Cycle} / (4 \pi R^2) \\ &= 712.853 \times 0.25 / (4 \pi \times 20^2) = 0.0355 \text{ mW/cm}^2 \end{aligned}$$

where Duty Cycle is 0.25 for GPRS operation (class 10) and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$\text{MPE limit} = 1.0 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore VM2CG in PCS band is compliant with the FCC rules on RF exposure.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Operation in HSDPA band II (1850 – 1910 MHz) (Second Antenna)

The EIRP of VM2CG in PCS band is 26.10dBm max at HSDPA II mode. The resulted power density at a distance of 20 cm can be deducted as follows:

| EUT | | | | Measurement | | | | | |
|----------------|------|-----------------------|------|--------------|-------------|--------------|------------|--------------|-------|
| Operation Band | Pol. | Fundamental Frequency | CH | Antenna Pol. | S.G. Output | Antenna Gain | Cable Loss | EIRP | Limit |
| | | MHz | | V/H | dBm | dBi | dB | dBm | dBm |
| HSDPA Band II | E2 | 1852.4 | 9262 | V | 26.09 | 4.17 | -5.49 | 24.77 | 33.00 |
| | | | | H | 16.90 | 4.51 | -5.49 | 15.92 | 33.00 |
| | | 1880.0 | 9400 | V | 25.44 | 4.13 | -5.56 | 24.01 | 33.00 |
| | | | | H | 15.45 | 4.44 | -5.56 | 14.32 | 33.00 |
| | | 1907.6 | 9538 | V | 27.56 | 4.10 | -5.56 | 26.10 | 33.00 |
| | | | | H | 16.68 | 4.37 | -5.62 | 15.43 | 33.00 |

$$\text{EIRP} = 26.10 \text{ dBm} = 407.380 \text{ mW}$$

$$\begin{aligned} \text{Power Density} &= \text{ERP} \times \text{Duty Cycle} / (4 \times R^2) \\ &= 407.380 \times 1 / (4 \times 20^2) = 0.0810 \text{ mW/cm}^2 \end{aligned}$$

where Duty Cycle is 1 for HSDPA band II mode and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$\text{MPE limit} = 1.0 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore VM2CG in cellular band is compliant with the FCC rules on RF exposure.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Operation in HSDPA band IV (1712.4 – 1752.6 MHz) (Second Antenna)

The EIRP of VM2CG in PCS band is 24.60dBm max at HSUPA IV mode. The resulted power density at a distance of 20 cm can be deducted as follows:

| EUT | | | | Measurement | | | | | |
|----------------|------|-----------------------|------|--------------|-------------|--------------|------------|--------------|-------|
| Operation Band | Pol. | Fundamental Frequency | CH | Antenna Pol. | S.G. Output | Antenna Gain | Cable Loss | EIRP | Limit |
| | | MHz | | V/H | dBm | dBi | dB | dBm | dBm |
| HSDPA Band IV | E2 | 1712.4 | 1312 | V | 24.48 | 4.40 | -5.40 | 23.47 | 33.00 |
| | | | | H | 23.49 | 4.79 | -5.40 | 22.88 | 33.00 |
| | | 1732.6 | 1413 | V | 24.91 | 4.35 | -5.42 | 23.84 | 33.00 |
| | | | | H | 23.68 | 4.78 | -5.42 | 23.04 | 33.00 |
| | | 1752.6 | 1513 | V | 25.72 | 4.31 | -5.44 | 24.60 | 33.00 |
| | | | | H | 21.56 | 4.76 | -5.44 | 20.89 | 33.00 |

$$\text{EIRP} = 24.60 \text{ dBm} = 288.403 \text{ mW}$$

$$\begin{aligned} \text{Power Density} &= \text{EIRP} \times \text{Duty Cycle} / (4 \times R^2) \\ &= 288.403 \times 1 / (4 \times 20^2) = 0.0574 \text{ mW/cm}^2 \end{aligned}$$

where Duty Cycle is 1 for HSDPA band IV mode and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$\text{MPE limit} = 1.0 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore VM2CG in PCS band is compliant with the FCC rules on RF exposure.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Operation in HSUPA band V (826 – 849 MHz) (Second Antenna)

The EIRP of VM2CG in cellular band is 22.86dBm max at HSUPA V mode. The resulted power density at a distance of 20 cm can be deducted as follows:

| EUT | | | | Measurement | | | | | |
|----------------|------|-----------------------|------|--------------|-------------|--------------|------------|--------------|-------|
| Operation Band | Pol. | Fundamental Frequency | CH | Antenna Pol. | S.G. Output | Antenna Gain | Cable Loss | EIRP | Limit |
| | | MHz | | V/H | dBm | dBi | dB | dBm | dBm |
| HSUPA Band V | E2 | 826.40 | 4132 | V | 22.48 | 3.97 | -4.22 | 22.23 | 38.45 |
| | | | | H | 21.41 | 3.97 | -4.22 | 21.15 | 38.45 |
| | | 836.60 | 4183 | V | 23.10 | 3.99 | -4.24 | 22.86 | 38.45 |
| | | | | H | 21.14 | 4.00 | -4.24 | 20.90 | 38.45 |
| | | 846.60 | 4233 | V | 22.46 | 4.02 | -4.24 | 22.24 | 38.45 |
| | | | | H | 20.95 | 4.02 | -4.24 | 20.74 | 38.45 |

$$\text{EIRP} = 22.86 \text{ dBm} = 193.197 \text{ mW}$$

$$\begin{aligned} \text{Power Density} &= \text{EIRP} \times \text{Duty Cycle} / (4 \pi R^2) \\ &= 193.197 \times 1 / (4 \pi \times 20^2) = 0.0384 \text{ mW/cm}^2 \end{aligned}$$

where Duty Cycle is 1 for HSUPA band V mode and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$\text{MPE limit} = 836.6 / 1500 = 0.56 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore VM2CG in PCS band is compliant with the FCC rules on RF exposure.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Operation in cellular band (824 – 849 MHz) (Second Antenna)

The EIRP of VM2CG in cellular band is 24.81dBm max at CDMA2000 Cellular mode. The resulted power density at a distance of 20 cm can be deducted as follows:

| EUT | | | | Measurement | | | | | |
|--------------------|------|-----------------------|------|--------------|-------------|--------------|------------|--------------|-------|
| Operation Band | Pol. | Fundamental Frequency | CH | Antenna Pol. | S.G. Output | Antenna Gain | Cable Loss | EIRP | Limit |
| | | MHz | | V/H | dBm | dBi | dB | dBm | dBm |
| CDMA 2000 Cellular | E2 | 824.70 | 1013 | V | 21.04 | 3.97 | -2.80 | 22.20 | 38.45 |
| | | | | H | 23.16 | 3.96 | -2.80 | 24.32 | 38.45 |
| | | 836.52 | 384 | V | 21.76 | 4.00 | -2.82 | 22.94 | 38.45 |
| | | | | H | 23.63 | 4.00 | -2.82 | 24.81 | 38.45 |
| | | 848.31 | 777 | V | 20.59 | 4.03 | -2.84 | 21.78 | 38.45 |
| | | | | H | 23.54 | 4.02 | -2.84 | 24.72 | 38.45 |

$$\text{EIRP} = 24.81\text{dBm} = 302.691 \text{ mW}$$

$$\begin{aligned} \text{Power Density} &= \text{ERP} \times \text{Duty Cycle} / (4 \pi R^2) \\ &= 302.691 \times 1 / (4 \times \pi \times 20^2) = 0.0602 \text{ mW/cm}^2 \end{aligned}$$

where Duty Cycle is 1 for CDMA operation and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$\text{MPE limit} = 836.52 / 1500 = 0.56 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore VM2CG in cellular band is compliant with the FCC rules on RF exposure.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Operation in PCS band (1850 – 1910 MHz) (Second Antenna)

The EIRP of VM2CG in cellular band is 26.60dBm max at CDMA2000 PCS mode. The resulted power density at a distance of 20 cm can be deducted as follows:

| EUT | | | | Measurement | | | | | |
|----------------|------|-----------------------|------|--------------|-------------|--------------|------------|--------------|-------|
| Operation Band | Pol. | Fundamental Frequency | CH | Antenna Pol. | S.G. Output | Antenna Gain | Cable Loss | EIRP | Limit |
| | | MHz | | V/H | dBm | dBi | dB | dBm | dBm |
| CDMA 2000 PCS | E2 | 1851.25 | 25 | V | 24.76 | 4.17 | -4.29 | 24.64 | 33.00 |
| | | | | H | 26.39 | 4.51 | -4.29 | 26.60 | 33.00 |
| | | 1880.00 | 600 | V | 26.10 | 4.13 | -4.33 | 25.90 | 33.00 |
| | | | | H | 24.01 | 4.44 | -4.33 | 24.12 | 33.00 |
| | | 1908.75 | 1175 | V | 25.72 | 4.10 | -4.37 | 25.45 | 33.00 |
| | | | | H | 23.90 | 4.37 | -4.37 | 23.90 | 33.00 |

$$\text{EIRP} = 26.60 \text{ dBm} = 457.088 \text{ mW}$$

$$\begin{aligned} \text{Power Density} &= \text{EIRP} \times \text{Duty Cycle} / (4 \pi R^2) \\ &= 457.088 \times 1 / (4 \pi \times 20^2) = 0.0909 \text{ mW/cm}^2 \end{aligned}$$

where Duty Cycle is 1 for CDMA2000 operation and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$\text{MPE limit} = 1.0 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore VM2CG in cellular band is compliant with the FCC rules on RF exposure.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.