



Global Product Certification  
EMC-EMF Safety Approvals

**EMC Technologies Pty Ltd**

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Seven Hills NSW 2147 Australia

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**[www.emctech.com.au](http://www.emctech.com.au)**

## APPENDIX H OF TEST REPORT T141013\_F

### GRAPHS OF EMI MEASUREMENT

**FCC ID:** 2ACXQ-MDR-4330AT  
**Manufacturer:** Sato Vicinity Pty Ltd  
**Test Sample:** Desk Top Reader 4330 Auto Tune  
**Model Number:** MDR-4330AT  
**Serial Number:** 9000626

**Date:** 27<sup>th</sup> November 2014

**APPENDIX H****GRAPHS OF EMI MEASUREMENT****CONDUCTED****Antenna Connected**

**Graph 1:** Active Line 0.145 to 30.5 MHz

**Graph 2:** Neutral Line 0.145 to 30.5 MHz

**Antenna Terminated**

**Graph 3:** Active Line 0.145 to 30.5 MHz

**Graph 4:** Neutral Line 0.145 to 30.5 MHz

**RADIATED EMI**

**Graph 5:** Magnetic Loop Parallel Emissions 9 kHz to 30 MHz

**Graph 6:** Magnetic Loop Perpendic. Emissions 9 kHz to 30 MHz

**Graph 7:** Carrier at 120V 13 MHz to 14 MHz

**Graph 8:** Carrier at 102V 13 MHz to 14 MHz

**Graph 9:** Carrier at 138V 13 MHz to 14 MHz

**Graph 10:** Vertical Antenna Polarisation 29 to 1000 MHz

**Graph 11:** Horizontal Antenna Polarisation 29 to 1000 MHz

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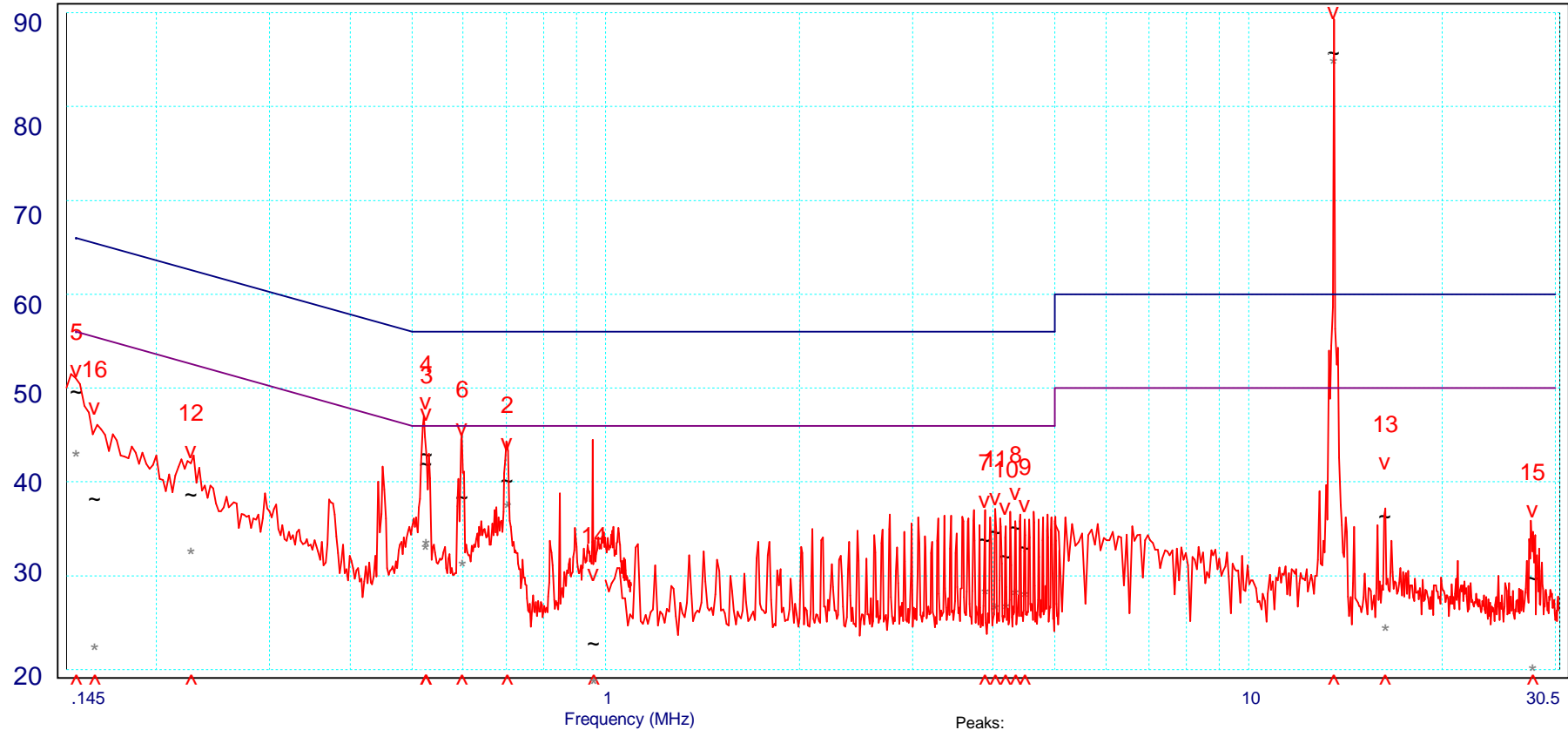
FCC Class B  
Conducted Emissions (dBuV)

Job No:T141013

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Test Date: 31/10/2014

1 GRAPH No. 1



Sato Vicinity Pty Ltd  
Desk Top Reader 4330 Auto Tune  
Model: MDR-4330AT Serial Number: 9000626 Part Number: 083-70-003  
Supply Voltage 120V 60Hz Antenna Connected

Limits:  
FCCN\_BQP FCC CLASS B QP CONDUCTED LIMITS (CISPR)  
FCCN\_BAV FCC CLASS B AV CONDUCTED LIMITS (CISPR)  
Legend:  
— Active Line

Ver 5.5 Build 160  
Room 2  
t:L0110116 c1:C0010815 c2:NONE p:NONE a:A3950815  
Site ID: Syd Room#2,3/87 Station Rd, Seven Hills, NSW  
Test Officer: Jason Cameron

Source:  
T141013Cl , 2 , 8

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia  
Phone +(612) 9624 2777 Fax+(612) 9838 4050

Peaks:

No	Freq (MHz)	Peak (dBuV)	QP Val (dBuV)	FCCN_BQP (dBuV)	dL1 (dB)	Av Val (dBuV)	FCCN_BAV (dBuV)	dL2 (dB)
1	13.56	89.5	85.3	60.0	25.3	83.7	50.0	33.7
2	0.703	43.6	39.7	56.0	-16.3	36.4	46.0	-9.6
3	0.525	46.7	42.5	56.0	-13.5	32.4	46.0	-13.6
4	0.525	48.0	41.5	56.0	-14.5	31.9	46.0	-14.1
5	0.150	51.4	49.2	66.0	-16.8	41.9	56.0	-14.1
6	0.598	45.2	38.0	56.0	-18.0	30.1	46.0	-15.9
7	3.890	37.5	33.4	56.0	-22.6	27.2	46.0	-18.8
8	4.339	38.3	34.7	56.0	-21.3	27.1	46.0	-18.9
9	4.489	37.0	32.6	56.0	-23.4	26.9	46.0	-19.1
10	4.188	36.7	31.7	56.0	-24.3	25.6	46.0	-20.4
11	4.038	37.8	34.3	56.0	-21.7	25.5	46.0	-20.5
12	0.226	42.8	38.2	62.6	-24.4	31.5	52.6	-21.1
13	16.31	41.6	36.0	60.0	-24.0	23.3	50.0	-26.7
14	0.957	29.7	22.3	56.0	-33.7	17.6	46.0	-28.4
15	27.66	36.5	29.3	60.0	-30.7	19.0	50.0	-31.0
16	0.160	47.4	37.8	65.5	-27.7	21.2	55.5	-34.3

# EMC Technologies Pty. Ltd. - Global Product Certification

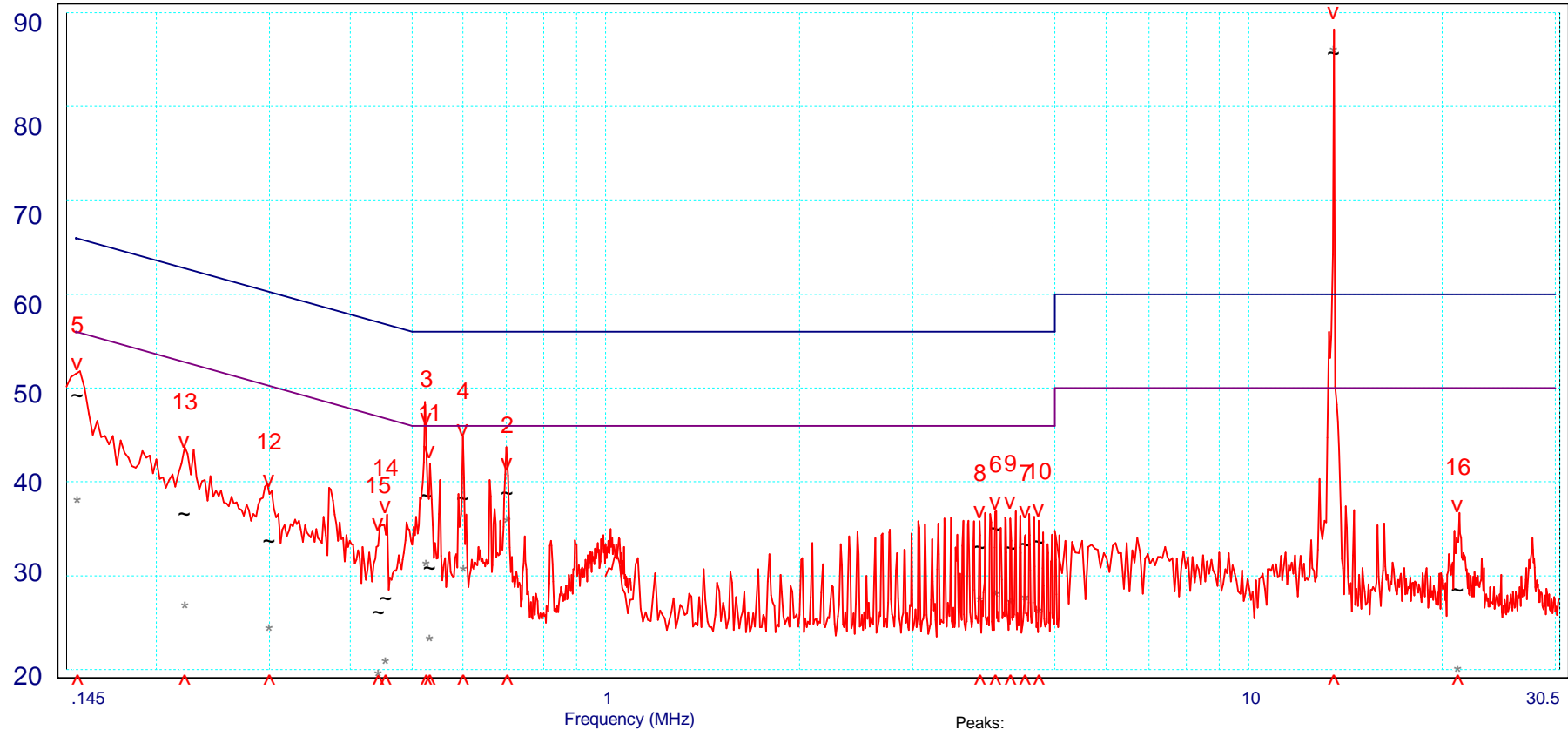
FCC Class B  
Conducted Emissions (dBuV)

Job No:T141013

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Test Date: 31/10/2014

1 GRAPH No. 2



Sato Vicinity Pty Ltd  
Desk Top Reader 4330 Auto Tune  
Model: MDR-4330AT Serial Number: 9000626 Part Number: 083-70-003  
Supply Voltage 120V 60Hz Antenna Connected

Limits: FCCN\_BQP FCC CLASS B QP CONDUCTED LIMITS (CISPR)  
FCCN\_BAV FCC CLASS B AV CONDUCTED LIMITS (CISPR)  
Legend: Neutral Line

Ver 5.5 Build 160  
Room 2  
t:L0110116 c1:C0010815 c2:NONE p:NONE a:A3950815  
Site ID: Syd Room#2,3/87 Station Rd, Seven Hills, NSW  
Test Officer: Jason Cameron

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia  
Phone +(612) 9624 2777 Fax+(612) 9838 4050

Peaks:

No	Freq (MHz)	Peak (dBuV)	QP Val (dBuV)	FCCN_BQP (dBuV)	dL1 (dB)	Av Val (dBuV)	FCCN_BAV (dBuV)	dL2 (dB)
1	13.56	89.6	85.3	60.0	25.3	85.0	50.0	35.0
2	0.702	41.5	38.4	56.0	-17.6	34.8	46.0	-11.2
3	0.526	46.4	38.2	56.0	-17.8	30.1	46.0	-15.9
4	0.600	45.1	37.9	56.0	-18.1	29.6	46.0	-16.4
5	0.151	52.2	48.8	66.0	-17.2	36.9	56.0	-19.1
6	4.042	37.3	34.6	56.0	-21.4	26.9	46.0	-19.1
7	4.494	36.4	32.9	56.0	-23.1	26.5	46.0	-19.5
8	3.822	36.4	32.7	56.0	-23.3	26.4	46.0	-19.6
9	4.265	37.4	32.5	56.0	-23.5	26.1	46.0	-19.9
10	4.716	36.6	33.2	56.0	-22.8	25.1	46.0	-20.9
11	0.532	42.8	30.5	56.0	-25.5	22.2	46.0	-23.8
12	0.299	39.7	33.3	60.3	-27.0	23.3	50.3	-27.0
13	0.221	43.9	36.2	62.8	-26.6	25.7	52.8	-27.1
14	0.454	36.9	27.2	56.8	-29.6	19.7	46.8	-27.1
15	0.443	35.1	25.7	57.0	-31.3	18.5	47.0	-28.5
16	21.14	37.0	28.1	60.0	-31.9	18.9	50.0	-31.1

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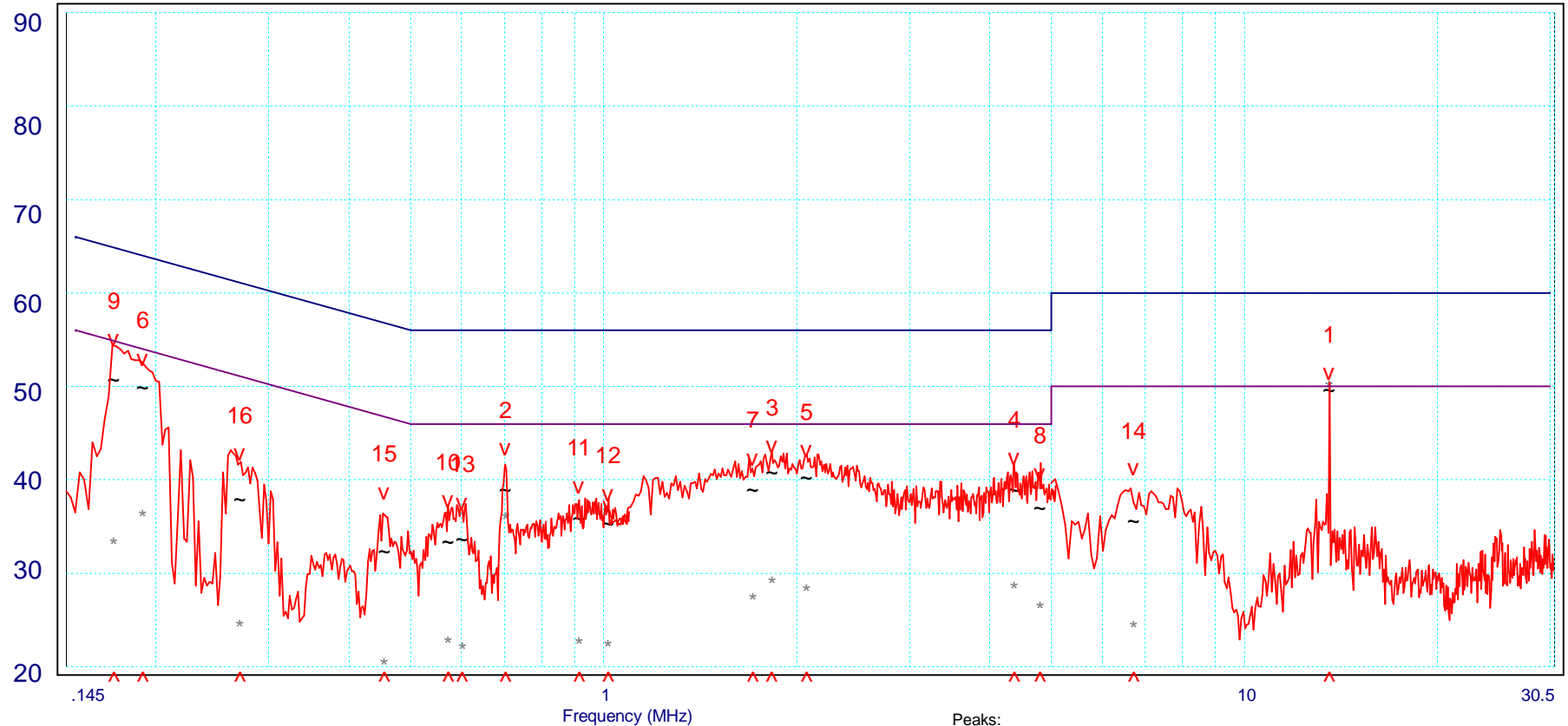
FCC Class B  
Conducted Emissions (dBuV)

Job No:T141013

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Test Date: 4/11/2014

GRAPH No. 3



Sato Vicinity Pty Ltd  
 Desk Top Reader 4330 Auto Tune  
 Model: MDR-4330AT Serial Number: 9000626 Part Number: 083-70-003  
 Supply Voltage 120V 60Hz Antenna Terminated to Load

Limits: FCCN\_BQP FCC CLASS B QP CONDUCTED LIMITS (CISPR)  
 FCCN\_BAV FCC CLASS B AV CONDUCTED LIMITS (CISPR)  
 Legend: Active Line

Ver 5.5 Build 160  
 Room 2  
 t:L0110116 c1:C0010815 c2:NONE p:NONE a:A3950815  
 Site ID: Syd Room#2,3/87 Station Rd, Seven Hills, NSW  
 Test Officer: Jason Cameron  
 Source: T141013C24 ,25 ,20

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia  
 Phone +(612) 9624 2777 Fax+(612) 9838 4050

No	Freq (MHz)	Peak (dBuV)	QP Val (dBuV)	FCCN_BQP (dBuV)	dL1 (dB)	Av Val (dBuV)	FCCN_BAV (dBuV)	dL2 (dB)
1	13.56	50.9	49.2	60.0	-10.8	49.1	50.0	-9
2	0.703	42.9	38.6	56.0	-17.4	35.0	46.0	-11.0
3	1.830	43.2	40.4	56.0	-15.6	28.1	46.0	-17.9
4	4.373	41.9	38.5	56.0	-17.5	27.6	46.0	-18.4
5	2.072	42.7	39.8	56.0	-16.2	27.3	46.0	-18.7
6	0.191	52.5	49.5	64.0	-14.5	35.3	54.0	-18.7
7	1.709	41.8	38.5	56.0	-17.5	26.3	46.0	-19.7
8	4.798	40.2	36.6	56.0	-19.4	25.4	46.0	-20.6
9	0.172	54.6	50.2	64.9	-14.7	32.3	54.9	-22.6
10	0.572	37.3	33.0	56.0	-23.0	21.7	46.0	-24.3
11	0.915	38.8	35.5	56.0	-20.5	21.6	46.0	-24.4
12	1.016	38.0	34.9	56.0	-21.1	21.3	46.0	-24.7
13	0.602	37.1	33.2	56.0	-22.8	21.1	46.0	-24.9
14	6.720	40.7	35.2	60.0	-24.8	23.4	50.0	-26.6
15	0.454	38.2	31.9	56.8	-24.9	19.4	46.8	-27.4
16	0.270	42.3	37.5	61.1	-23.6	23.5	51.1	-27.6

# EMC Technologies Pty. Ltd. - Global Product Certification

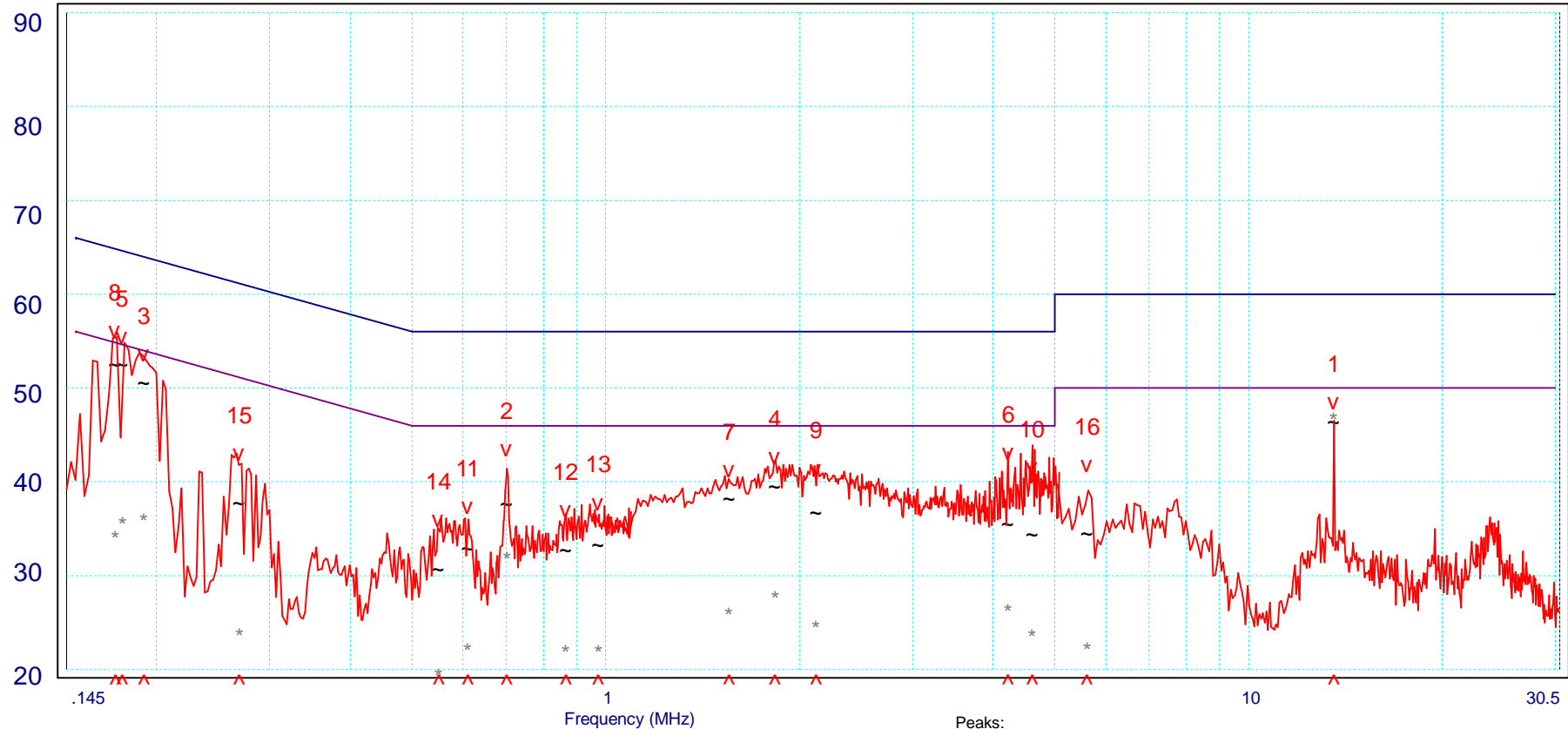
FCC Class B  
Conducted Emissions (dBuV)

Job No:T141013

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Test Date: 4/11/2014

GRAPH No. 4



Sato Vicinity Pty Ltd  
 Desk Top Reader 4330 Auto Tune  
 Model: MDR-4330AT Serial Number: 9000626 Part Number: 083-70-003  
 Supply Voltage 120V 60Hz Antenna Terminated to Load

Limits: FCCN\_BQP FCC CLASS B QP CONDUCTED LIMITS (CISPR)  
 FCCN\_BAV FCC CLASS B AV CONDUCTED LIMITS (CISPR)  
 Legend: Neutral Line

Ver 5.5 Build 160  
 Room 2  
 t:L0110116 c1:C0010815 c2:NONE p:NONE a:A3950815  
 Site ID: Syd Room#2,3/87 Station Rd, Seven Hills, NSW  
 Test Officer: Jason Cameron  
 Source: T141013C22 ,23 ,21

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia  
 Phone +(612) 9624 2777 Fax+(612) 9838 4050

No	Freq (MHz)	Peak (dBuV)	QP Val (dBuV)	FCCN_BQP (dBuV)	dL1 (dB)	Av Val (dBuV)	FCCN_BAV (dBuV)	dL2 (dB)
1	13.56	48.0	45.9	60.0	-14.1	45.8	50.0	-4.2
2	0.702	43.0	37.3	56.0	-18.7	31.0	46.0	-15.0
3	0.191	53.0	50.2	64.0	-13.8	35.1	54.0	-18.9
4	1.832	42.1	39.0	56.0	-17.0	26.8	46.0	-19.2
5	0.177	55.0	52.1	64.6	-12.5	34.7	54.6	-19.9
6	4.224	42.6	35.1	56.0	-20.9	25.4	46.0	-20.6
7	1.555	40.8	37.8	56.0	-18.2	25.0	46.0	-21.0
8	0.172	55.6	52.1	64.8	-12.7	33.2	54.8	-21.6
9	2.124	40.9	36.2	56.0	-19.8	23.7	46.0	-22.3
10	4.606	41.0	33.9	56.0	-22.1	22.7	46.0	-23.3
11	0.609	36.9	32.4	56.0	-23.6	21.2	46.0	-24.8
12	0.866	36.5	32.2	56.0	-23.8	21.1	46.0	-24.9
13	0.973	37.3	32.9	56.0	-23.1	21.1	46.0	-24.9
14	0.549	35.5	30.2	56.0	-25.8	18.6	46.0	-27.4
15	0.269	42.5	37.3	61.1	-23.8	22.9	51.1	-28.2
16	5.607	41.3	34.1	60.0	-25.9	21.4	50.0	-28.6

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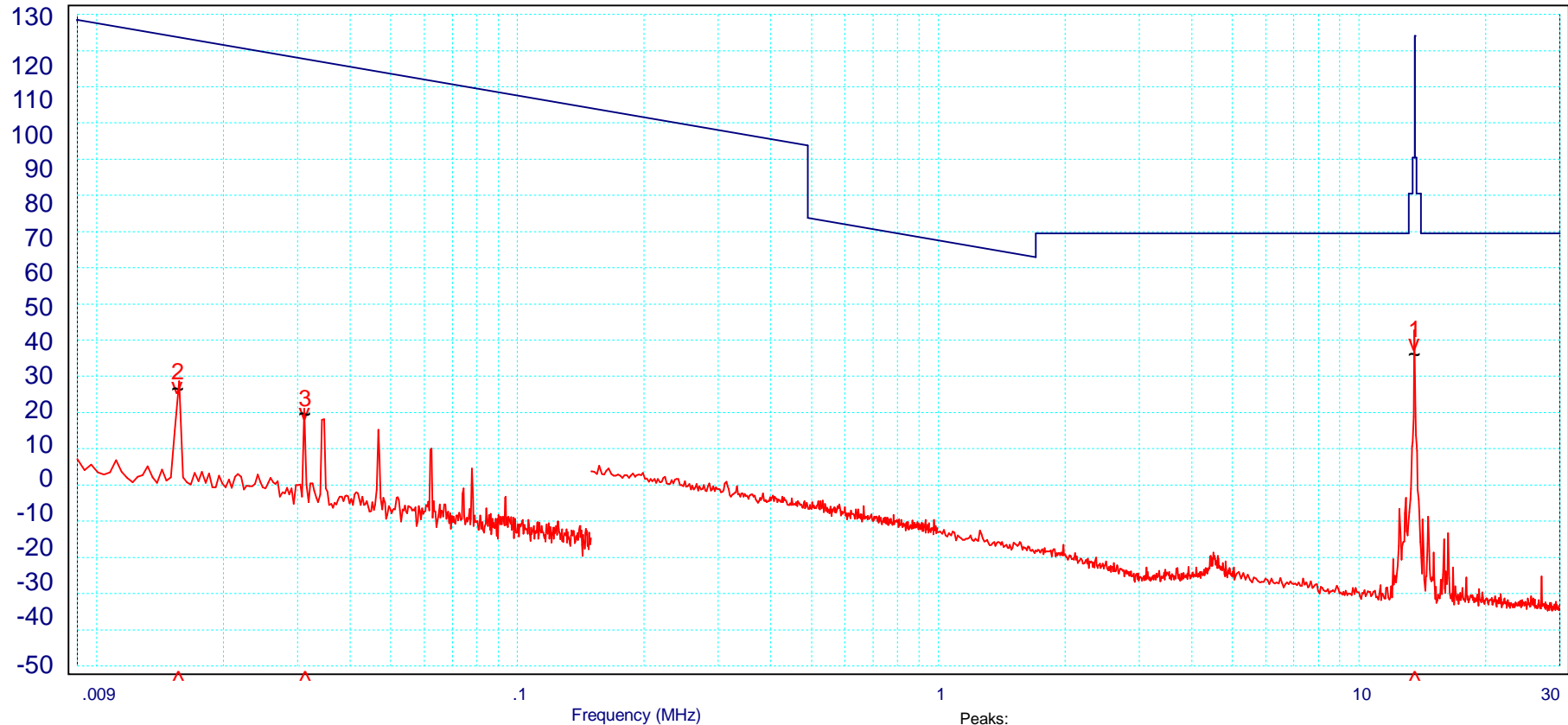
FCC Class B  
Radiated Emissions (dBuV/m)  
# = Ambient

Job No:T141013

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Test Date: 31/10/2014

GRAPH No. 5



Peaks:

No	Freq (MHz)	QP (dBuV/m)	QPLim (dBuV/m)	dQP (dB)	AV (dBuV/m)	AVLim (dBuV/m)	dAV (dB)
1	13.56	38.20	124.00	-85.80	.00	.00	.00
2	0.016	28.70	123.72	-95.02	.00	.00	.00
3	0.031	21.60	117.67	-96.07	.00	.00	.00

Sato Vicinity Pty Ltd  
Desk Top Reader 4330 Auto Tune  
Model: MDR-4330AT Serial Number: 9000626 Part Number: 083-70-003  
Supply Voltage 120V 60Hz

Limits:  
FCC-15225 FCC Part 15.225 3 Metre Limits 9kHz to 30MHz

Legend:  
— Parallel Emissions

Ver 5.5 Build 160  
Radiated setup for Rm 3 with Loop Antenna  
t:A0081115M c1:C0280815 c2:NONE p:NONE a:NONE  
Site ID: Syd Room#3,3/87 Station Rd, Seven Hills, NSW  
Test Officer: Jason Cameron

Source:  
T141013r1 , 2 , 3 , 8

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia  
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# EMC Technologies Pty. Ltd. - Global Product Certification

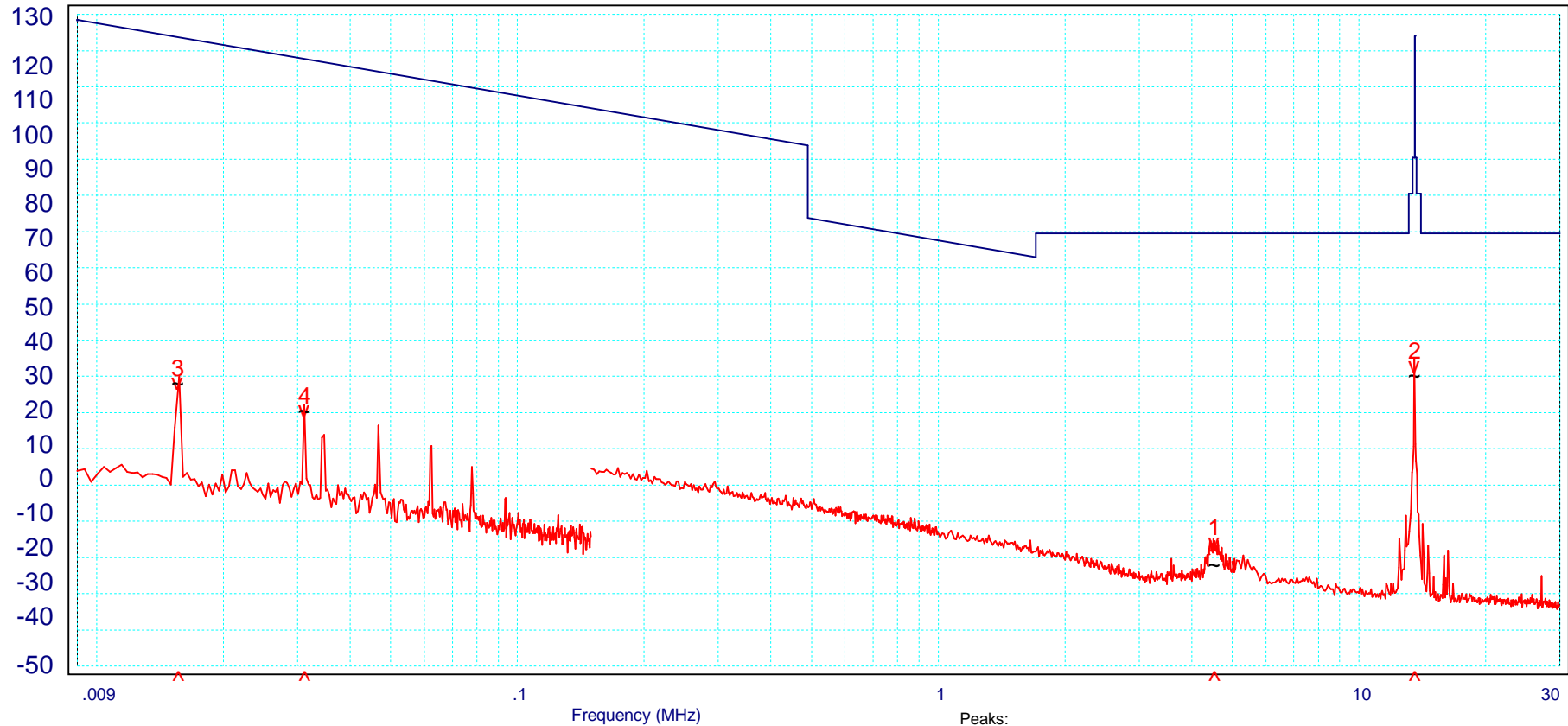
FCC Class B  
Radiated Emissions (dBuV/m)  
# = Ambient

Job No:T141013

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Test Date: 31/10/2014

GRAPH No. 6



Peaks:

No	Freq (MHz)	QP (dBuV/m)	QPLim (dBuV/m)	dQP (dB)	AV (dBuV/m)	AVLim (dBuV/m)	dAV (dB)
1	4.532	-20.00	69.54	-89.54	.00	.00	.00
2	13.56	32.20	124.00	-91.80	.00	.00	.00
3	0.016	30.00	123.72	-93.72	.00	.00	.00
4	0.031	22.40	117.70	-95.30	.00	.00	.00

Sato Vicinity Pty Ltd  
Desk Top Reader 4330 Auto Tune  
Model: MDR-4330AT Serial Number: 9000626 Part Number: 083-70-003  
Supply Voltage 120V 60Hz

Limits:  
FCC-15225 FCC Part 15.225 3 Metre Limits 9kHz to 30MHz

Legend:  
— Perpendicular Emissions

Ver 5.5 Build 160  
Radiated setup for Rm 3 with Loop Antenna  
t:A0081115M c1:C0280815 c2:NONE p:NONE a:NONE  
Site ID: Syd Room#3,3/87 Station Rd, Seven Hills, NSW  
Test Officer: Jason Cameron

Source:  
T141013r9 , 10 , 11 , 12

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia  
Phone +(612) 9624 2777 Fax+(612) 9838 4050



# EMC Technologies Pty. Ltd. - Global Product Certification

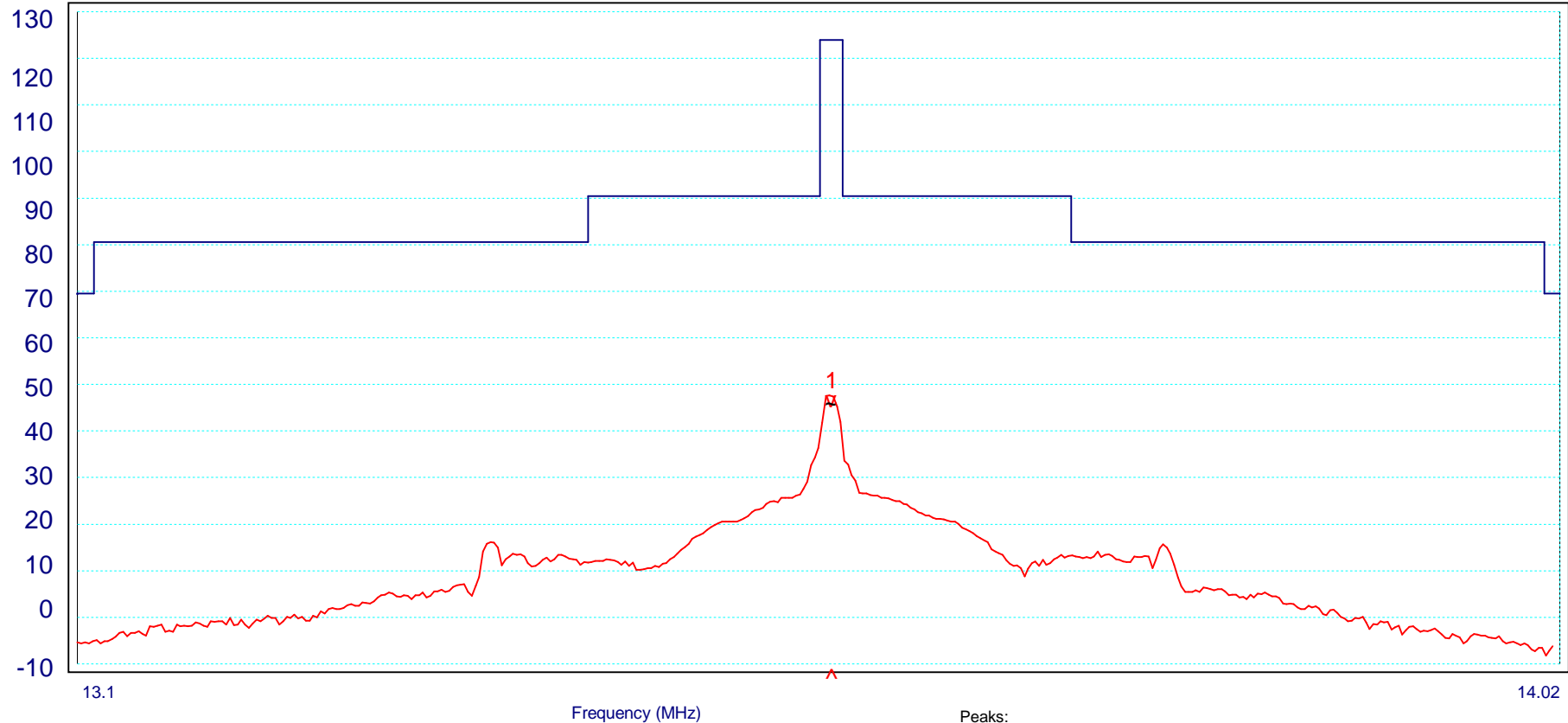
FCC Class B  
Radiated Emissions (dBuV/m)  
# = Ambient

Job No:T141013

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Test Date: 31/10/2014

GRAPH No. 7



Sato Vicinity Pty Ltd  
Desk Top Reader 4330 Auto Tune  
Model: MDR-4330AT S/N: 9000626  
Supply Voltage 120V 60Hz

Peaks:

No	Freq (MHz)	QP (dBuV/m)	QPLim (dBuV/m)	dQP (dB)	AV (dBuV/m)	AVLim (dBuV/m)	dAV (dB)
1	13.56	47.10	124.00	-76.90	.00	.00	.00

Limits: FCC-15225 FCC Part 15.225 3 Metre Limits 9kHz to 30MHz

Legend:  
— Parallel Emissions

Ver 5.5 Build 160  
Radiated setup for Rm 3 with Loop Antenna  
t:A0081115M c1:C0280815 c2:NONE p:NONE a:NONE  
Site ID: Syd Room#3,3/87 Station Rd, Seven Hills, NSW  
Test Officer: Jason Cameron

Source:  
T141013r5

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia  
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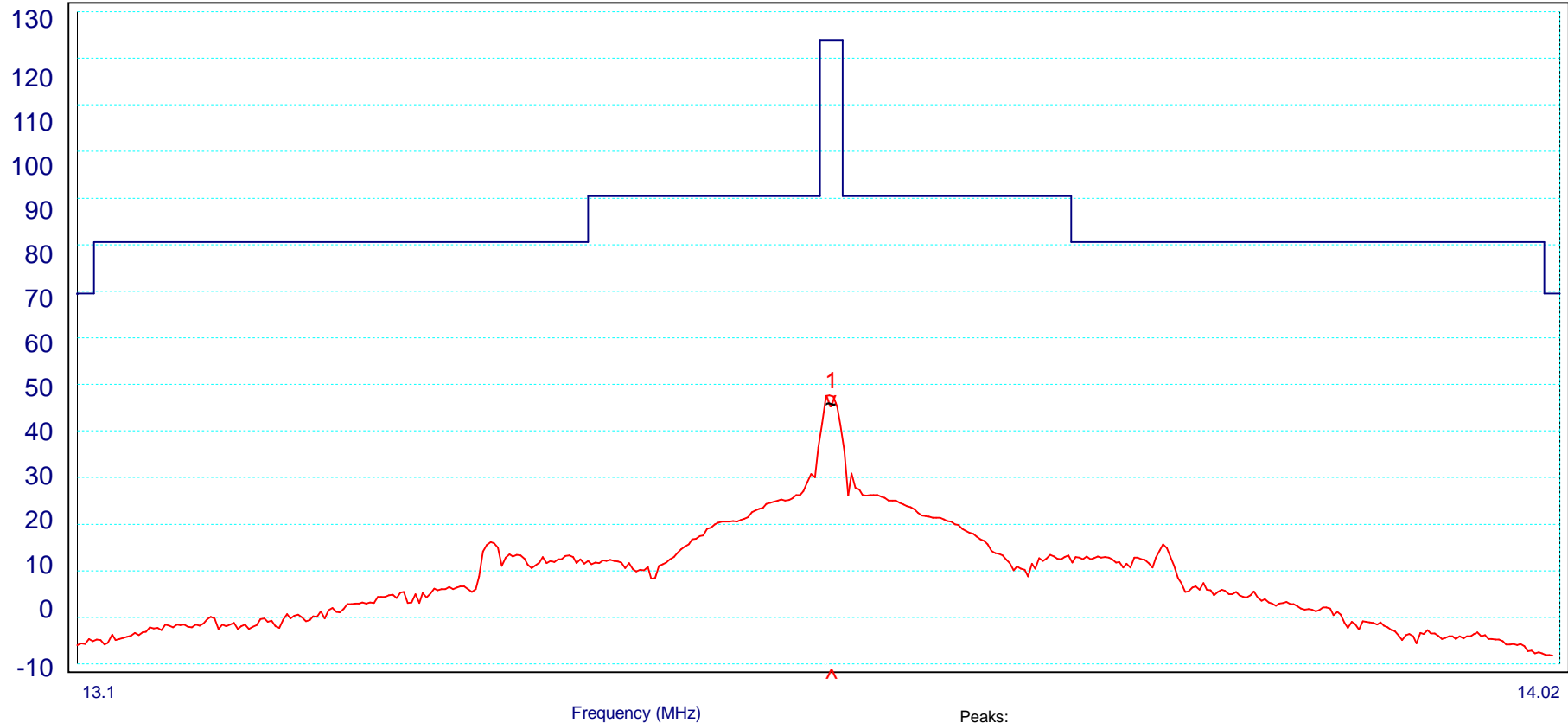
FCC Class B  
Radiated Emissions (dBuV/m)  
# = Ambient

Job No:T141013

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Test Date: 31/10/2014

GRAPH No. 8



Sato Vicinity Pty Ltd  
Desk Top Reader 4330 Auto Tune  
Model: MDR-4330AT Serial Number: 9000626 Part Number: 083-70-003  
Supply Voltage 102V 60Hz

Peaks:

No	Freq (MHz)	QP (dBuV/m)	QPLim (dBuV/m)	dQP (dB)	AV (dBuV/m)	AVLim (dBuV/m)	dAV (dB)
1	13.56	47.10	124.00	-76.90	.00	.00	.00

Limits: FCC-15225 FCC Part 15.225 3 Metre Limits 9kHz to 30MHz

Legend:  
— Parallel Emissions

Ver 5.5 Build 160  
Radiated setup for Rm 3 with Loop Antenna  
t:A0081115M c1:C0280815 c2:NONE p:NONE a:NONE  
Site ID: Syd Room#3,3/87 Station Rd, Seven Hills, NSW  
Test Officer: Jason Cameron

Source:  
T141013r6

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia  
Phone +(612) 9624 2777 Fax+(612) 9838 4050

# EMC Technologies Pty. Ltd. - Global Product Certification

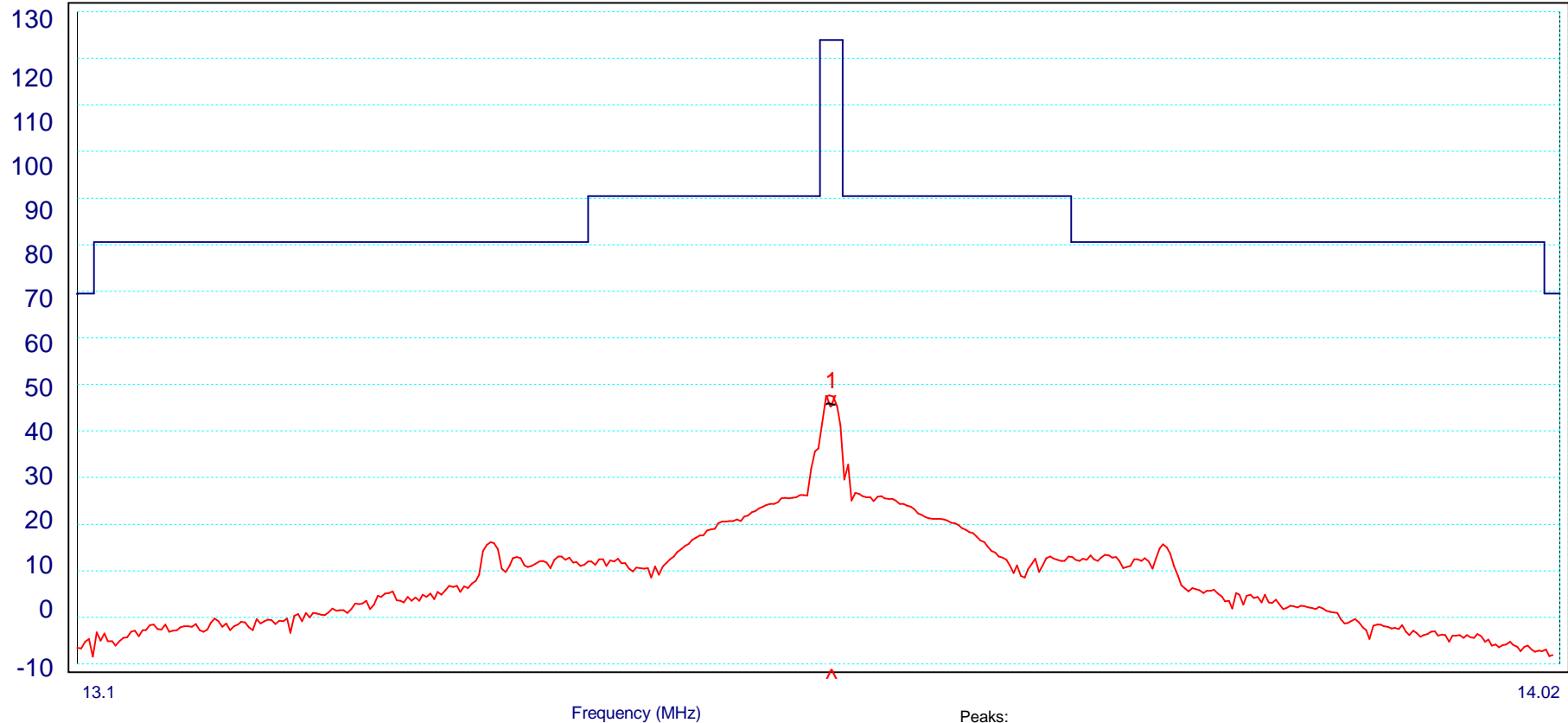
FCC Class B  
Radiated Emissions (dBuV/m)  
# = Ambient

Job No:T141013

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Test Date: 31/10/2014

GRAPH No. 9



Sato Vicinity Pty Ltd  
Desk Top Reader 4330 Auto Tune  
Model: MDR-4330AT Serial Number: 9000626 Part Number: 083-70-003  
Supply Voltage 138V 60Hz

Peaks:

No	Freq (MHz)	QP (dBuV/m)	QPLim (dBuV/m)	dQP (dB)	AV (dBuV/m)	AVLim (dBuV/m)	dAV (dB)
1	13.56	47.10	124.00	-76.90	.00	.00	.00

Limits: FCC-15225 FCC Part 15.225 3 Metre Limits 9kHz to 30MHz  
Legend: — Parallel Emissions

Ver 5.5 Build 160  
Radiated setup for Rm 3 with Loop Antenna  
t:A0081115M c1:C0280815 c2:NONE p:NONE a:NONE  
Site ID: Syd Room#3,3/87 Station Rd, Seven Hills, NSW  
Test Officer: Jason Cameron

Source: T141013r7

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia  
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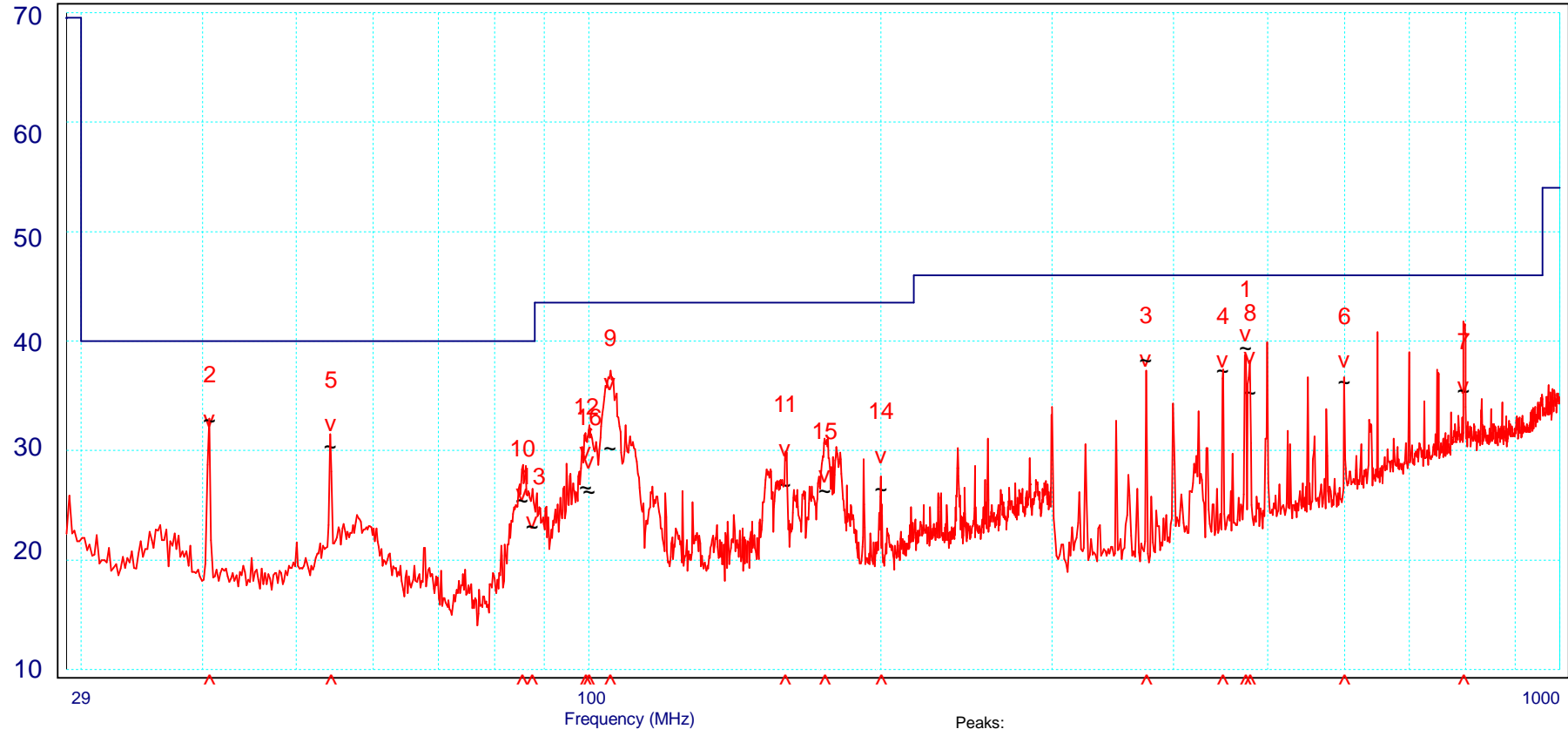
FCC Class B  
Radiated Emissions (dBuV/m)  
# = Ambient

Job No:T141013

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Test Date: 31/10/2014

GRAPH No. 10



Sato Vicinity Pty Ltd  
Desk Top Reader 4330 Auto Tune  
Model: MDR-4330AT Serial Number: 9000626 Part Number: 083-70-003  
Supply Voltage 120V 60Hz

Limits: FCC-B3      FCC CLASS B RAD 3M LIMITS  
Legend: — Vertical Emissions

Ver 5.5 Build 160  
Room 3  
t:A0030215 c1:C0280815 c2:NONE p:NONE a:NONE  
Site ID: Syd Room#3,3/87 Station Rd, Seven Hills, NSW  
Test Officer: Jason Cameron

Source: T141013r14 , 15 , 16 , 20 , 21

Peaks:

No	Freq (MHz)	Peak (dBuV/m)	QP Val	FCC-B3 (dBuV/m)	dL1 (dB)
1	475.00	40.0	38.7	46.0	-7.3
2	40.68	32.2	32.2	40.0	-7.8
3	374.99	37.6	37.6	46.0	-8.4
4	449.99	37.5	36.6	46.0	-9.4
5	54.24	31.7	29.7	40.0	-10.3
6	600.00	37.5	35.6	46.0	-10.4
7	796.09	35.2	34.9	46.0	-11.1
8	480.01	37.8	34.6	46.0	-11.4
9	105.24	35.5	29.6	43.5	-13.9
10	85.45	25.4	24.8	40.0	-15.2
11	159.28	29.5	26.2	43.5	-17.3
12	99.30	29.2	26.0	43.5	-17.5
13	87.48	22.8	22.4	40.0	-17.6
14	200.00	28.8	25.8	43.5	-17.7
15	175.02	27.0	25.7	43.5	-17.8
16	100.03	28.3	25.6	43.5	-17.9

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia  
Phone +(612) 9624 2777 Fax+(612) 9838 4050

# EMC Technologies Pty. Ltd. - Global Product Certification

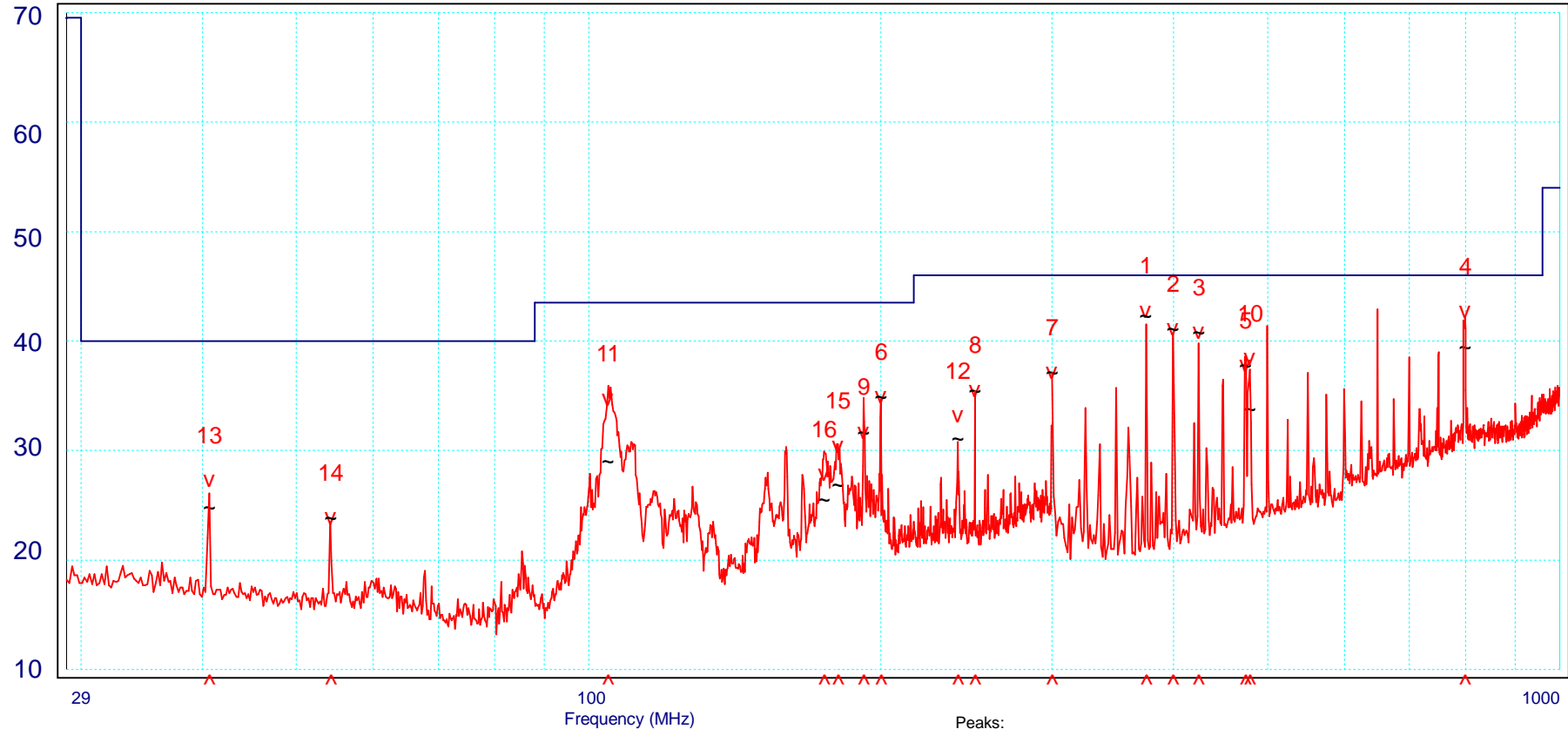
FCC Class B  
Radiated Emissions (dBuV/m)  
# = Ambient

Job No:T141013

p:\PCFT141013\_11.PCF

Test Date: 31/10/2014

GRAPH No. 11



Sato Vicinity Pty Ltd  
Desk Top Reader 4330 Auto Tune  
Model: MDR-4330AT Serial Number: 9000626 Part Number: 083-70-003  
Supply Voltage 120V 60Hz

Limits: FCC-B3 FCC CLASS B RAD 3M LIMITS  
Legend: Horizontal Emissions  
Ver 5.5 Build 160  
Room 3  
t:A0030215 c1:C0280815 c2:NONE p:NONE a:NONE  
Site ID: Syd Room#3,3/87 Station Rd, Seven Hills, NSW  
Test Officer: Jason Cameron  
Source: T141013r17, 18, 19, 22, 23

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Peaks:

No	Freq (MHz)	Peak (dBuV/m)	QP Val	FCC-B3 (dBuV/m)	dL1 (dB)
1	374.99	42.1	41.7	46.0	-4.3
2	399.99	40.4	40.4	46.0	-5.6
3	424.99	40.1	40.1	46.0	-5.9
4	799.10	42.1	38.8	46.0	-7.2
5	474.99	37.1	37.1	46.0	-8.9
6	199.99	34.3	34.3	43.5	-9.2
7	300.00	36.4	36.4	46.0	-9.6
8	250.00	34.9	34.9	46.0	-11.1
9	192.00	31.0	31.0	43.5	-12.5
10	479.96	37.7	33.2	46.0	-12.8
11	104.65	34.0	28.4	43.5	-15.1
12	240.00	32.5	30.4	46.0	-15.6
13	40.68	26.6	24.1	40.0	-15.9
14	54.25	23.2	23.2	40.0	-16.8
15	180.64	29.8	26.2	43.5	-17.3
16	174.79	27.2	24.9	43.5	-18.6