DIGITAL EMC CO., LTD.

683-3, Yubang-Dong, Yongin-Si, Kyunggi-Do, Korea. 449-080
Tel: +82-31-321-2664 Fax: +82-31-321-1664
http://www.digitalemc.com

CERTIFICATION OF COMPLIANCE

Telian Corporation
5th FL. Namjeun bldg, 53-3 Haan-Dong, Kwangmyung-Si,
Kyunggi-Do, Korea, 423-060

Dates of Tests: August. 8 ~ 11, 2005
Test Report S/N: DR50110508Q
Test Site : DIGITAL EMC CO., LTD.

FCC ID **NPQRFM2000**

APPLICANT **Telian Corporation**

FCC Classification	:	**Part 15 Low Power Communication Device Transmitter**
Device name	:	**900MHz Transmitter**
Manufacturer	:	**Telian Corporation**
FCC ID	:	**NPQRFM2000**
Model name	:	**RFM2000**
Add Model name	:	**FCS-8900 / FGD-8900 / Avvio 8000 / Avvio 9000**
Test Device Serial number	:	**Identical prototype**
FCC Rule Part(s)	:	**FCC Part 15.249; ANSI C-63.4-2003**
Frequency Range	:	**918 ~ 921MHz**
Max. Output power	:	**-13dBm**
Data of issue	:	**August 25, 2005**

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

NVLAP LAB CODE 200559-0

TABLE OF CONTENTS

1. General information

This report contains the result of tests performed by:

DIGITAL EMC CO., LTD.
Address : 683-3, Yubang-Dong, Yongin-Si, Kyunggi-Do, Korea. 449-080
http://www.digitalemc.com E-mail : demc@unitel.co.kr
Tel: +82-31-321-2664 Fax: +82-31-321-1664

Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the "General requirements for the competents of calibration and testing laboratory".
This laboratory is accredited by NVLAP for NVLAP Lab. Code : 200559-0.

Test operator: engineer

Data	Name	Signature
AUGUST 25, 2005	Won-Jung LEE	

Report Reviewed By: manager

Data	Name	Signature
AUGUST 25, 2005	Harvey Sung	

Ordering party:

Company name	:	TELIAN CORPORATION
Address	:	5th FL. Namjeun bldg, 53-3 Haan-Dong, Kwangmyung-Si
Zip code	:	423-060
City/town	:	Kyunggi-Do
Country	:	KOREA
Date of order	:	August 02, 2005

2. Information about test item

NPQRFM2000

2.1 Equipment information

Equipment model name	RFM2000
Add Equipment model name	FCS-8900 / FGD-8900 / Avvio 8000 / Avvio 9000
Type of equipment	900MHz Transmitter
Frequency band	918 ~ 921MHz TX
Type of Modulation	FSK
Channel Spacing	200 kHz
Type of antenna	Line Antenna
AC/DC Adaptor	Output: 5Vdc, 500mA

2.2 Tested frequency

Frequency	TX
Low frequency	918 MHz
High frequency	921 MHz

2.3 Tested environment

Temperature	:	15 ~ 35 (°C)
Relative humidity content	:	20 ~ 75 %
Air pressure	:	86 ~ 103 kPa
Details of power supply	:	120 VAC, 60Hz 220 VAC, 50Hz (Adaptor: POD-41050500)

2.4 Ancillary Equipment

Equipment	Model No.	Serial No.	Manufacturer
1. AC/DC Adaptor	RGD-4105500	N/A	Ron Ger Electric
2. AC/DC Adaptor	POD-41050500	N/A	Ron Ger Electric
3. AC/DC Adaptor	PWS-050500AM	N/A	Ron Ger Electric
4. AC/DC Adaptor	3A-031WU05	N/A	ENG
5. AC/DC Adaptor	RGD41060500	N/A	Ron Ger Electric
GSM Phone	FGD-8900	N/A	Telian Corp.

2.5 EMI Suppression Device(s)/Modifications

EMI suppression device(s) added and/or modifications made during testing -> none

3. Test Report

3.1 Summary of tests

FCC Part Section(s)	Parameter	Limit	Test Condition	Status (note 1)
I. Transmit mode(Tx)				
15.249 (a)	Field Strength Limits	Refer to the FCC 15.249(a)	Radiated	C
15.205 / 15.209	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	< FCC 15.209 limits	Radiated	C
15.207	AC Conducted Emissions	< FCC 15.207 limits	Line Conducted	C

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

The sample was tested according to the following specification:

FCC Parts 15.249; ANSI C-63.4-2003

3.2 Transmitter requirements

3.2.1 AC Conducted Emissions

Procedure:

The conducted emissions are measured in the shielded room with a spectrum analyzer in peak hold. While the measurement, EUT had its hopping function disabled at the middle channels in line with Section 15.31(m). Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation and Exerciser operation. The highest emissions relative to the limit are listed.

Measurement Data: Complies

- No other emissions were detected at a level greater than 10dB below limit.
- Refer to the next page.

Minimum Standard: FCC Part 15.207(a)/EN 55022

Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 ~ 0.5	66 to 56 *	56 to 46 *
0.5 ~ 5	56	46
5 ~ 30	60	50

* Decreases with the logarithm of the frequency

Measurement Setup

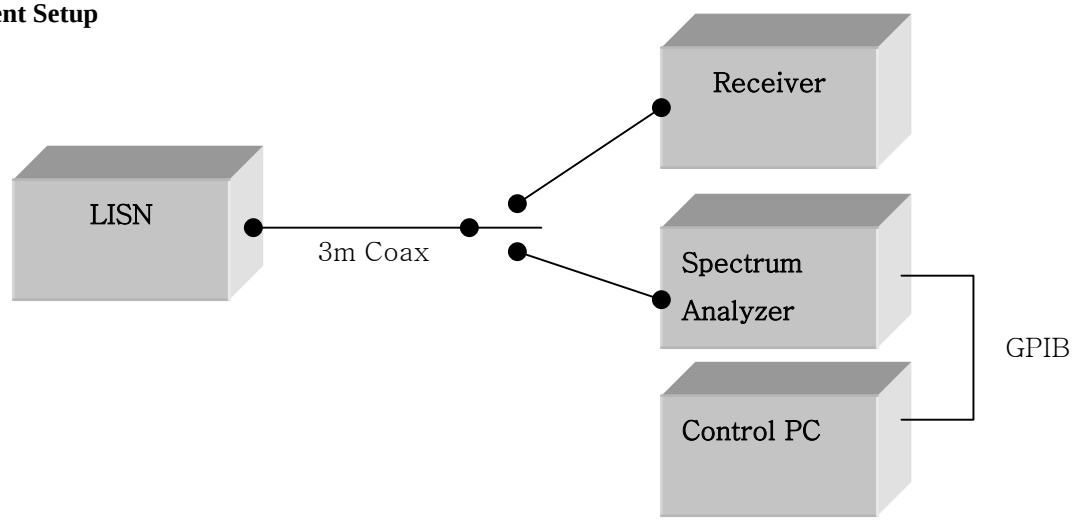
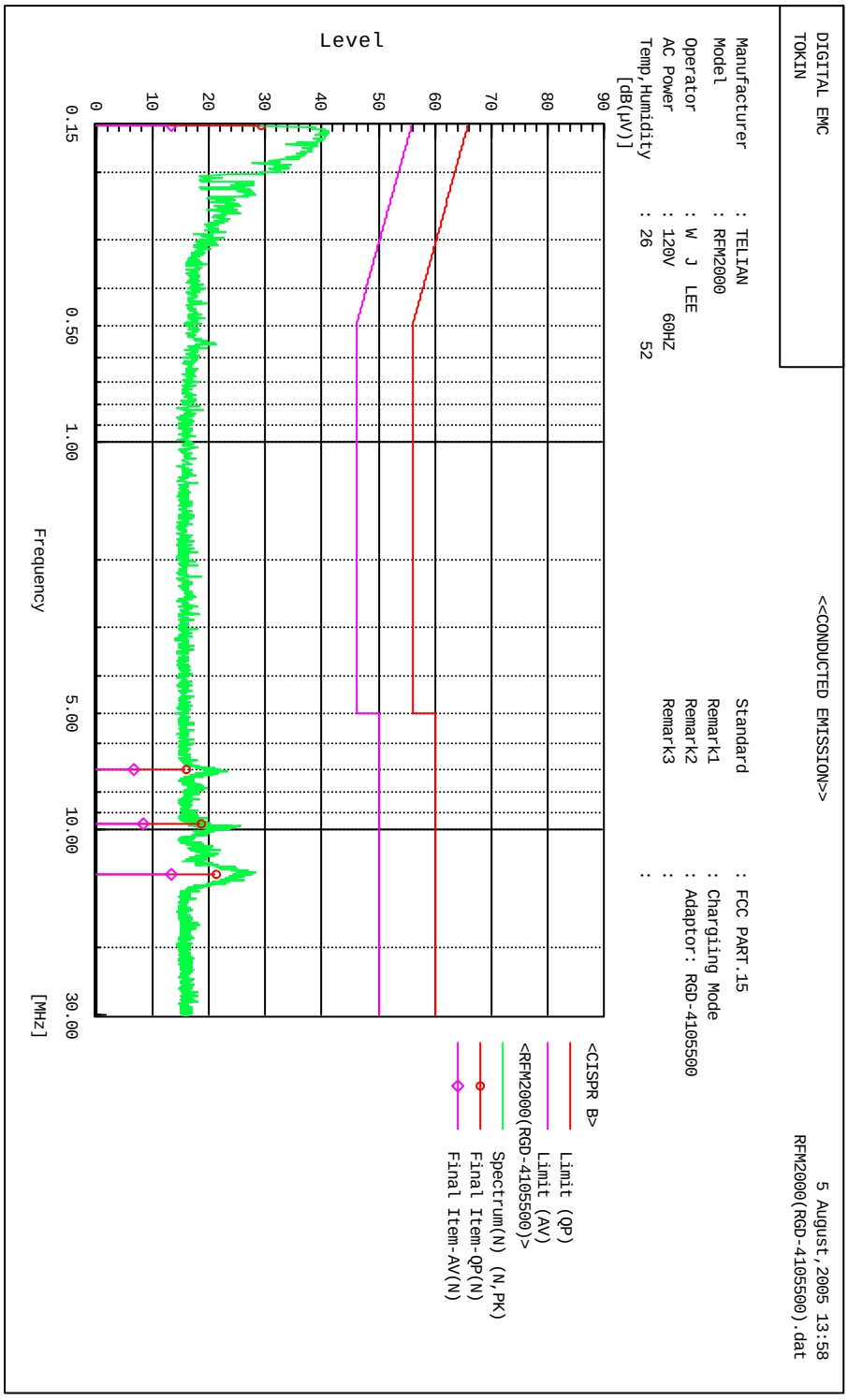
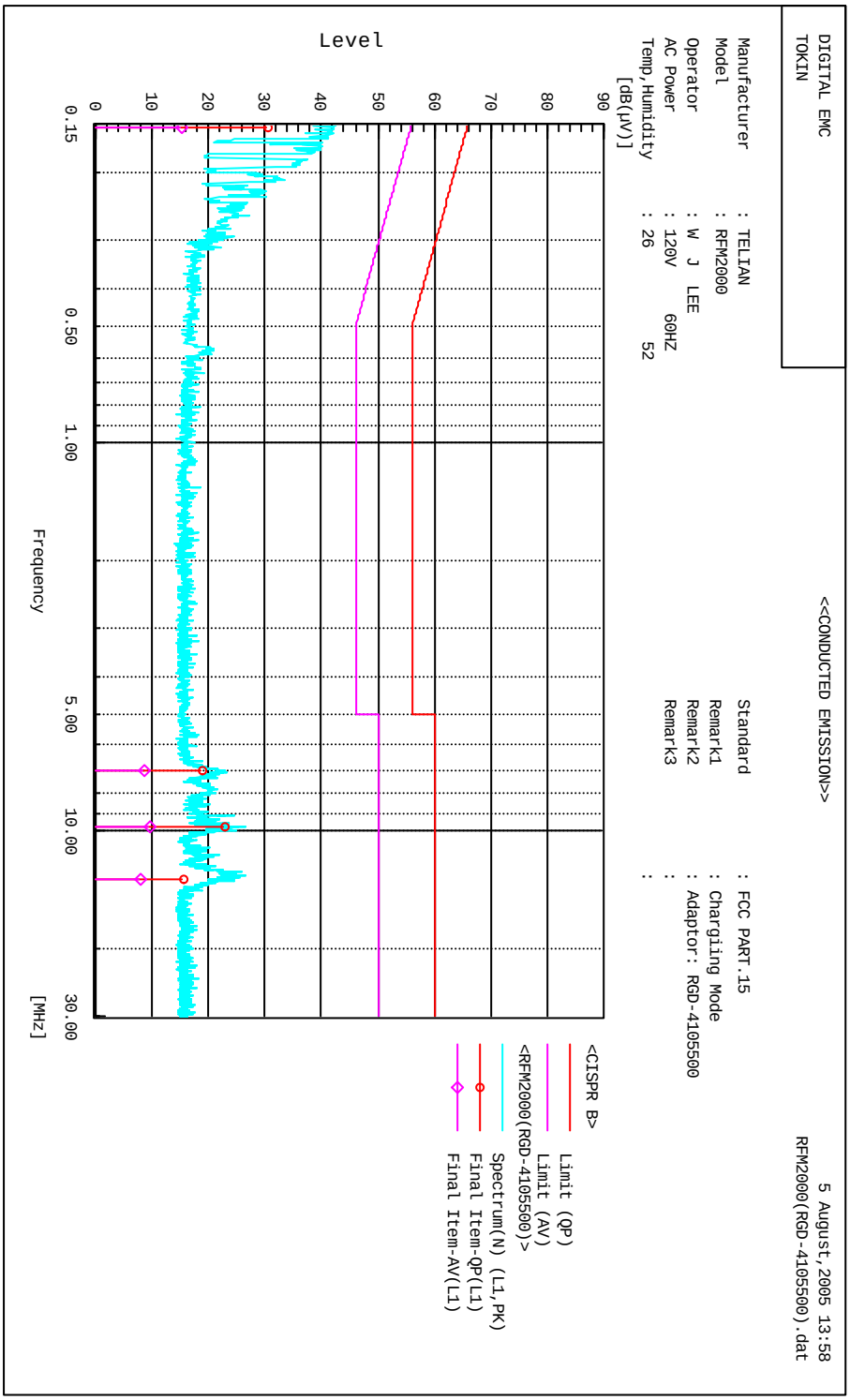


Figure 2: Measurement setup for AC Conducted Emission

NPQRFM2000 / Adaptor : RGD-4105500 / Line



NPQRFM2000 / Adaptor : RGD-4105500 / Neutral



********** DIGITAL EMC **********

<<CONDUCTED EMISSION>>

5 August,2005 13:58

RFM2000(RGD-4105500).dat

Standard : FCC PART.15
Manufacturer : TELIAN
Model : RFM2000
Operator : W J LEE
AC Power : 120V 60HZ
Temp,Humidity : 26 52
Remark1 : Chargiing Mode
Remark2 : Adaptor: RGD-4105500
Remark3 :
:

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Final Result

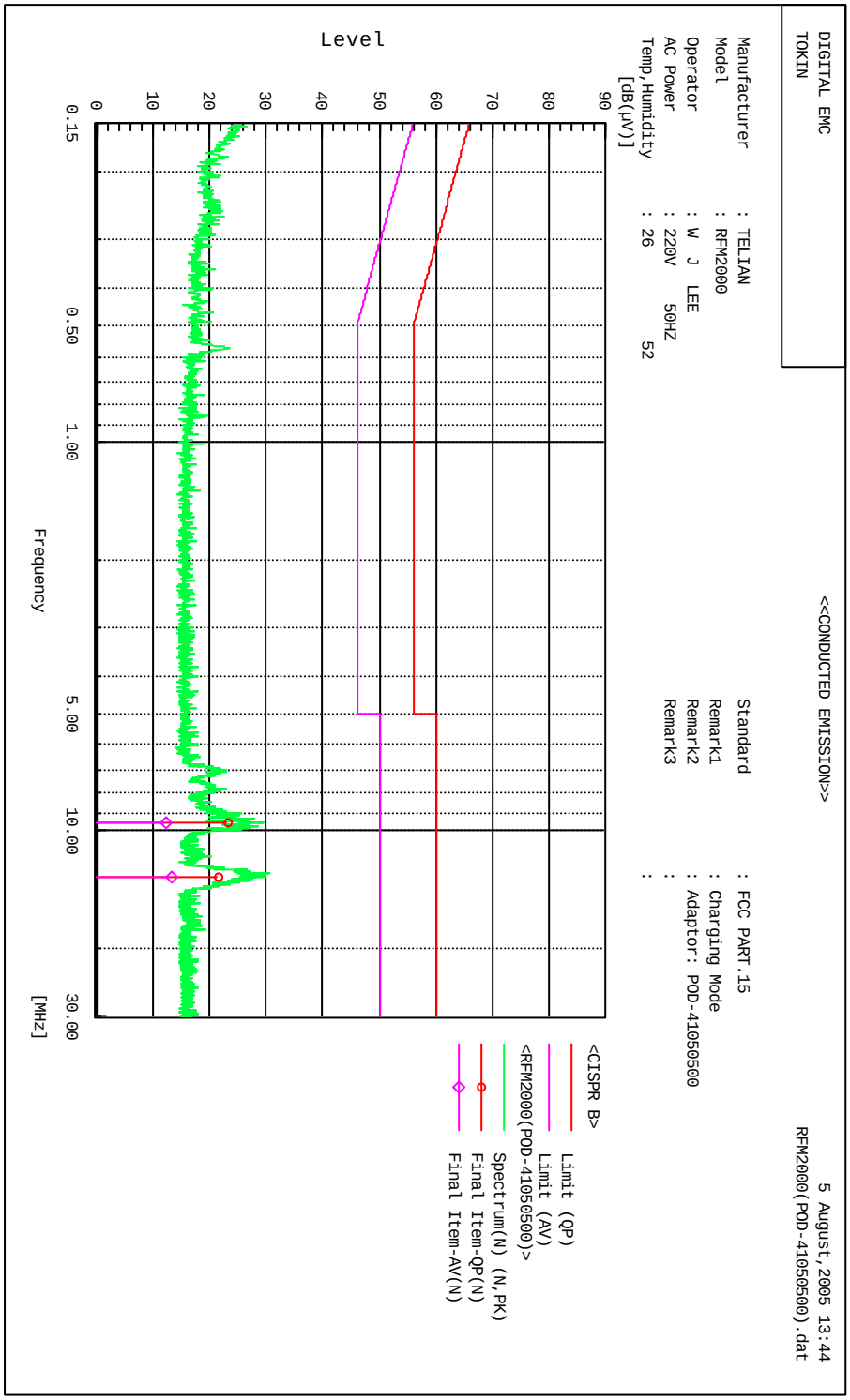
--- N Phase ---

No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading AV [dB(μV)]	c.f [dB]	Result QP [dB(μV)]	Result AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]	Remark
1	0.152	28.5	12.6	0.6	29.1	13.2	65.9	55.9	36.8	42.7	
2	13.020	20.3	12.3	0.9	21.2	13.2	60.0	50.0	38.8	36.8	
3	9.681	17.7	7.4	0.9	18.6	8.3	60.0	50.0	41.4	41.7	
4	6.994	15.3	5.9	0.8	16.1	6.7	60.0	50.0	43.9	43.3	

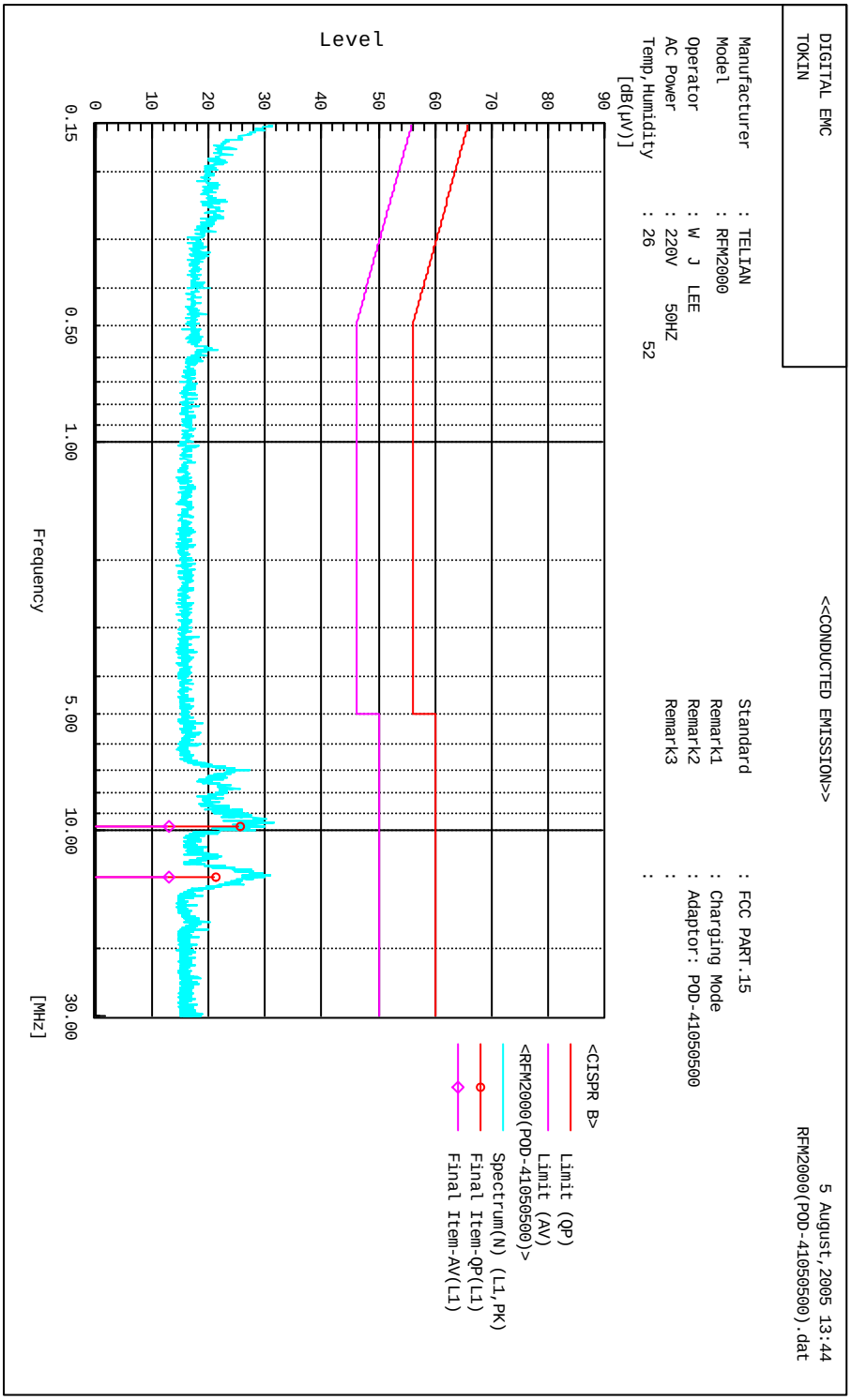
--- L1 Phase ---

No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading AV [dB(μV)]	c.f [dB]	Result QP [dB(μV)]	Result AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]	Remark
1	7.001	18.1	7.9	0.8	18.9	8.7	60.0	50.0	41.1	41.3	
2	13.259	14.9	7.2	0.8	15.7	8.0	60.0	50.0	44.3	42.0	
3	9.720	22.1	8.8	0.9	23.0	9.7	60.0	50.0	37.0	40.3	
4	0.153	30.0	14.8	0.6	30.6	15.4	65.8	55.8	35.2	40.4	

NPQRFM2000 / Adaptor : POD-41050500 / Line



NPQRFM2000 / Adaptor : POD-41050500 / Neutral

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********************************************** DIGITAL EMC **********************************************
                                    <<CONDUCTED EMISSION>>

                                                                    5 August,2005 13:44
                                                    RFM2000(POD-41050500).dat

Standard        : FCC PART.15
Manufacturer    : TELIAN
Model           : RFM2000

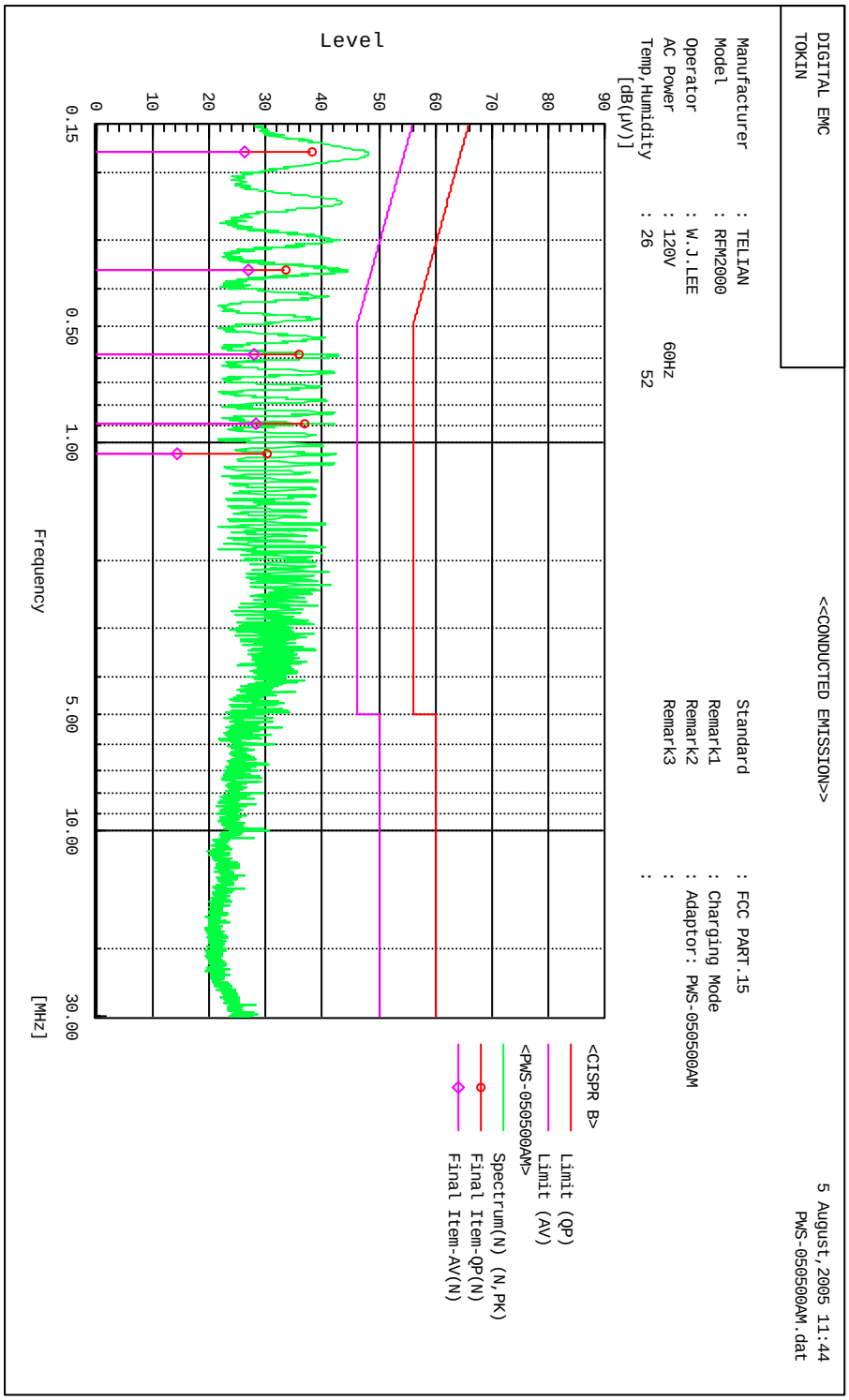
Operator        : W J LEE
AC Power        : 220V   50HZ
Temp,Humidity   : 26       52
Remark1         : Charging Mode
Remark2         : Adaptor: POD-41050500
Remark3         :
                :
**********************************************************************************************************

Final Result

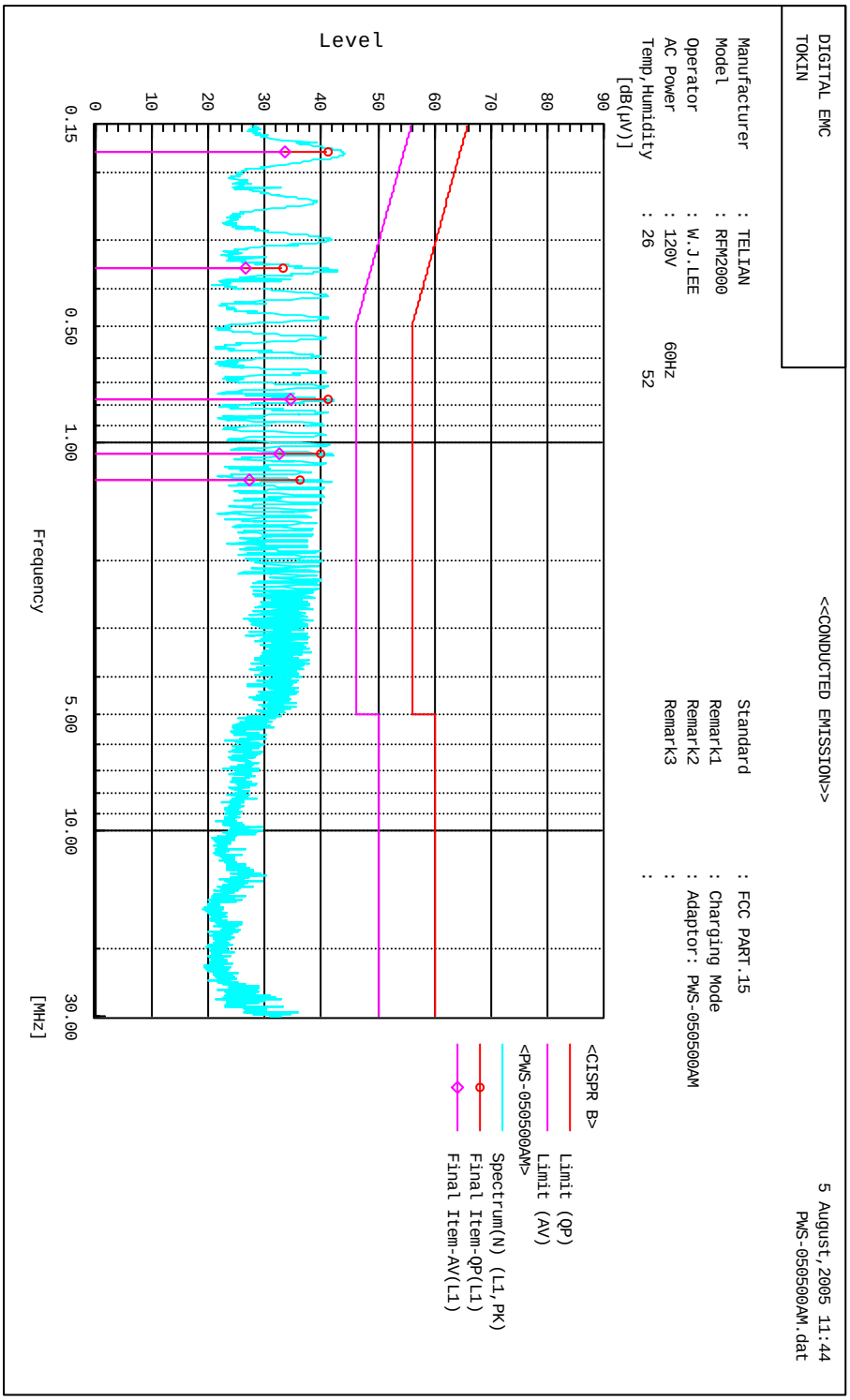
--- N Phase ---
No.  Frequency  Reading  Reading  c.f   Result   Result   Limit   Limit   Margin  Margin  Remark
                  QP       AV                     AV       QP      AV      QP      AV
         [MHz]  [dB(µV)] [dB(µV)] [dB]  [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB]    [dB]
   1    13.110    20.8     12.5    0.9     21.7     13.4     60.0    50.0    38.3    36.6
   2     9.505    22.5     11.3    0.9     23.4     12.2     60.0    50.0    36.6    37.8

--- L1 Phase ---
No.  Frequency  Reading  Reading  c.f   Result   Result   Limit   Limit   Margin  Margin  Remark
                  QP       AV                     AV       QP      AV      QP      AV
         [MHz]  [dB(µV)] [dB(µV)] [dB]  [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB]    [dB]
   1    13.153    20.5     12.2    0.8     21.3     13.0     60.0    50.0    38.7    37.0
   2     9.720    24.6     12.2    0.9     25.5     13.1     60.0    50.0    34.5    36.9
```


NPQRFM2000 / Adaptor : PWS-050500AM / Line



NPQRFM2000 / Adaptor : PWS-050500AM / Neutral



********** DIGITAL EMC **********

<<CONDUCTED EMISSION>>

5 August,2005 11:44

PWS-050500AM.dat

Standard : FCC PART.15
Manufacturer : TELIAN
Model : RFM2000
Operator : W.J.LEE
AC Power : 120V 60Hz
Temp,Humidity : 26 52
Remark1 : Charging Mode
Remark2 : Adaptor: PWS-050500AM
Remark3 :
:

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Final Result

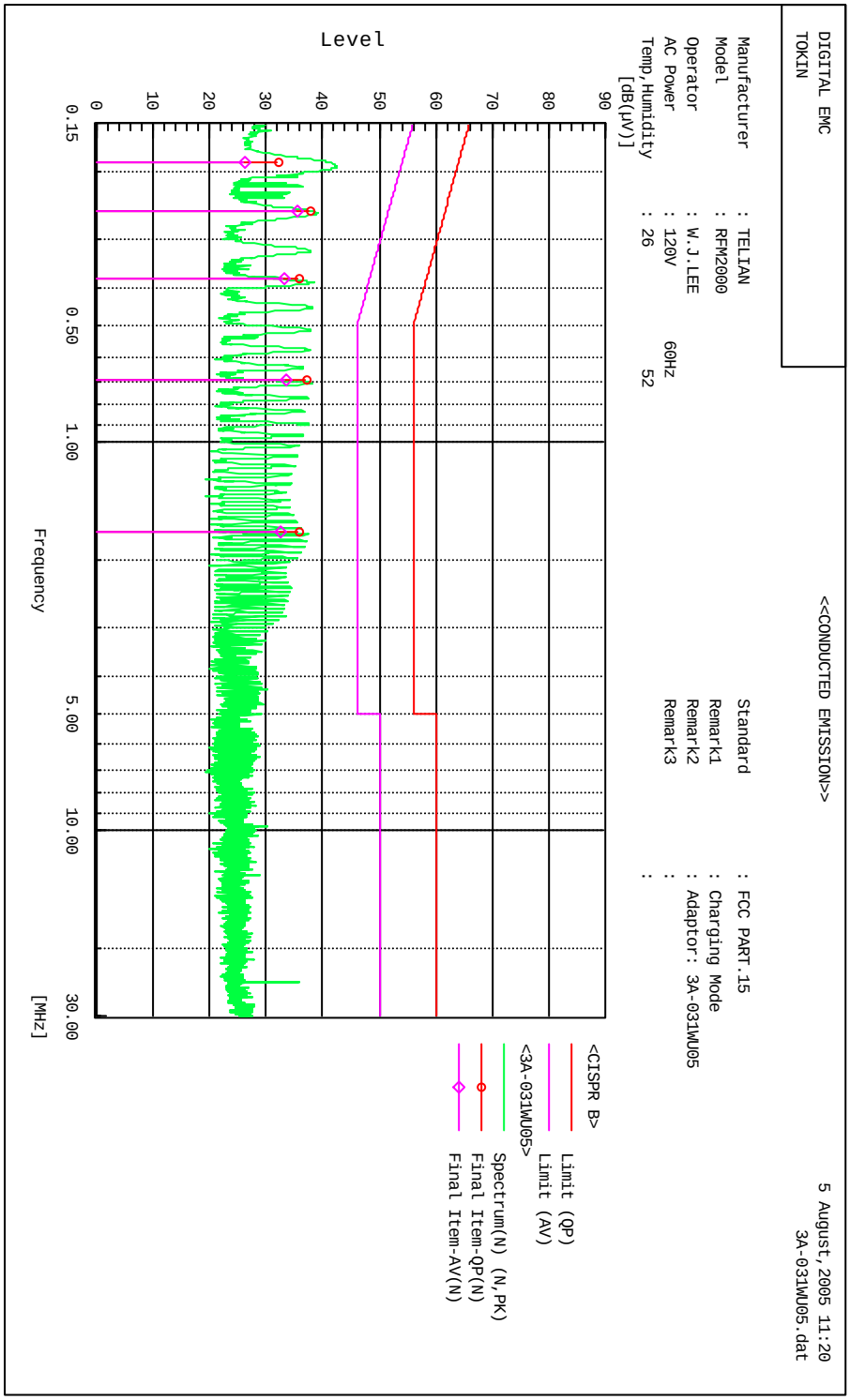
--- N Phase ---

No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Remark
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]	
1	0.178	36.8	25.0	1.4	38.2	26.4	64.6	54.6	26.4	28.2	
2	0.356	33.1	26.3	0.5	33.6	26.8	58.8	48.8	25.2	22.0	
3	0.593	35.5	27.6	0.3	35.8	27.9	56.0	46.0	20.2	18.1	
4	0.889	36.6	28.0	0.2	36.8	28.2	56.0	46.0	19.2	17.8	
5	1.068	30.1	14.2	0.2	30.3	14.4	56.0	46.0	25.7	31.6	

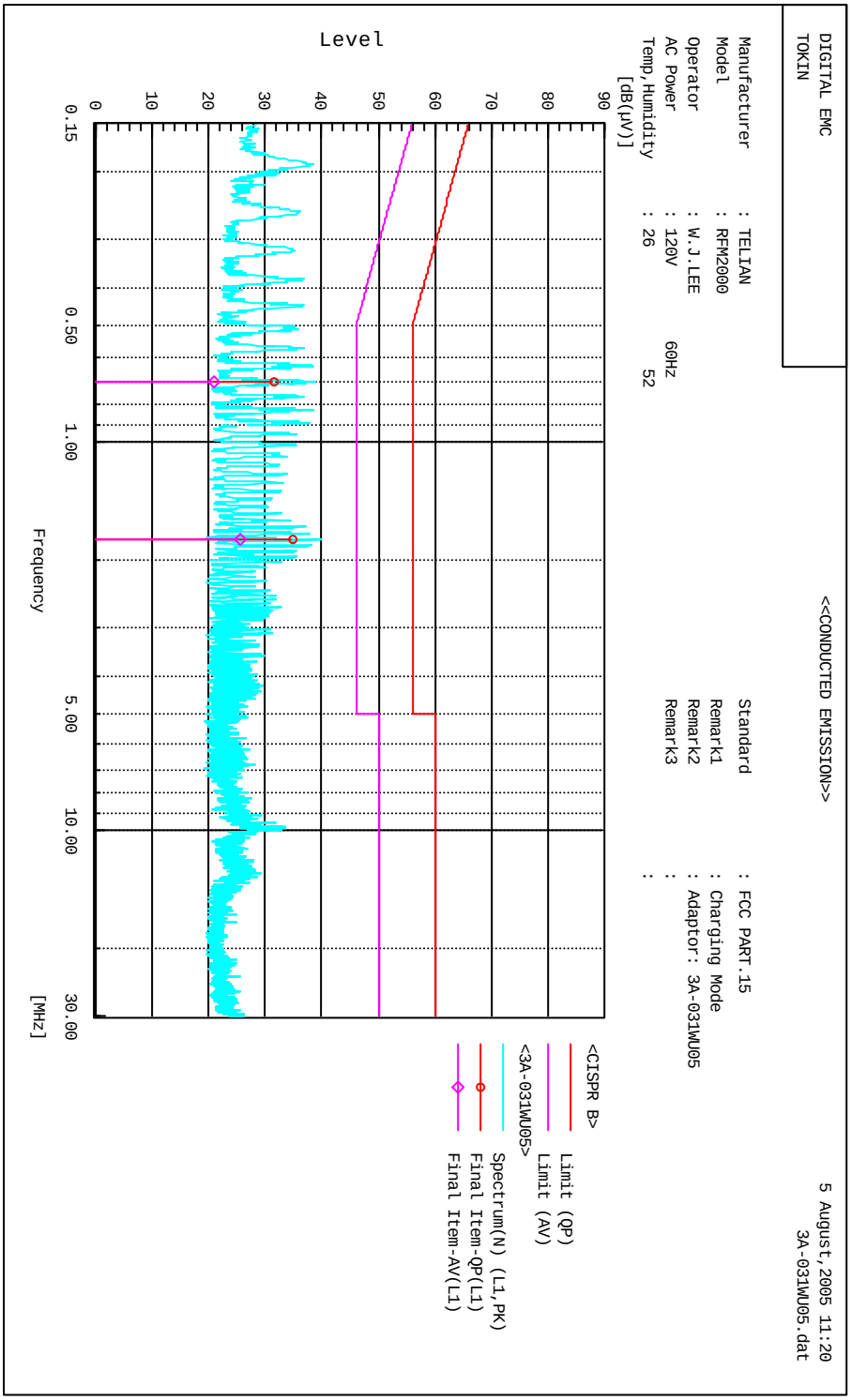
--- L1 Phase ---

No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Remark
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]	
1	0.177	39.8	32.3	1.3	41.1	33.6	64.6	54.6	23.5	21.0	
2	0.355	32.6	26.1	0.6	33.2	26.7	58.8	48.8	25.6	22.1	
3	0.770	40.9	34.2	0.3	41.2	34.5	56.0	46.0	14.8	11.5	
4	1.067	39.4	32.1	0.3	39.7	32.4	56.0	46.0	16.3	13.6	
5	1.245	36.0	27.0	0.3	36.3	27.3	56.0	46.0	19.7	18.7	

NPQRFM2000 / Adaptor : 3A-031WU05 / Line



NPQRFM2000 / Adaptor : 3A-031WU05 / Neutral

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********************************************************************** DIGITAL EMC **********************************************************************
                                        <<CONDUCTED EMISSION>>

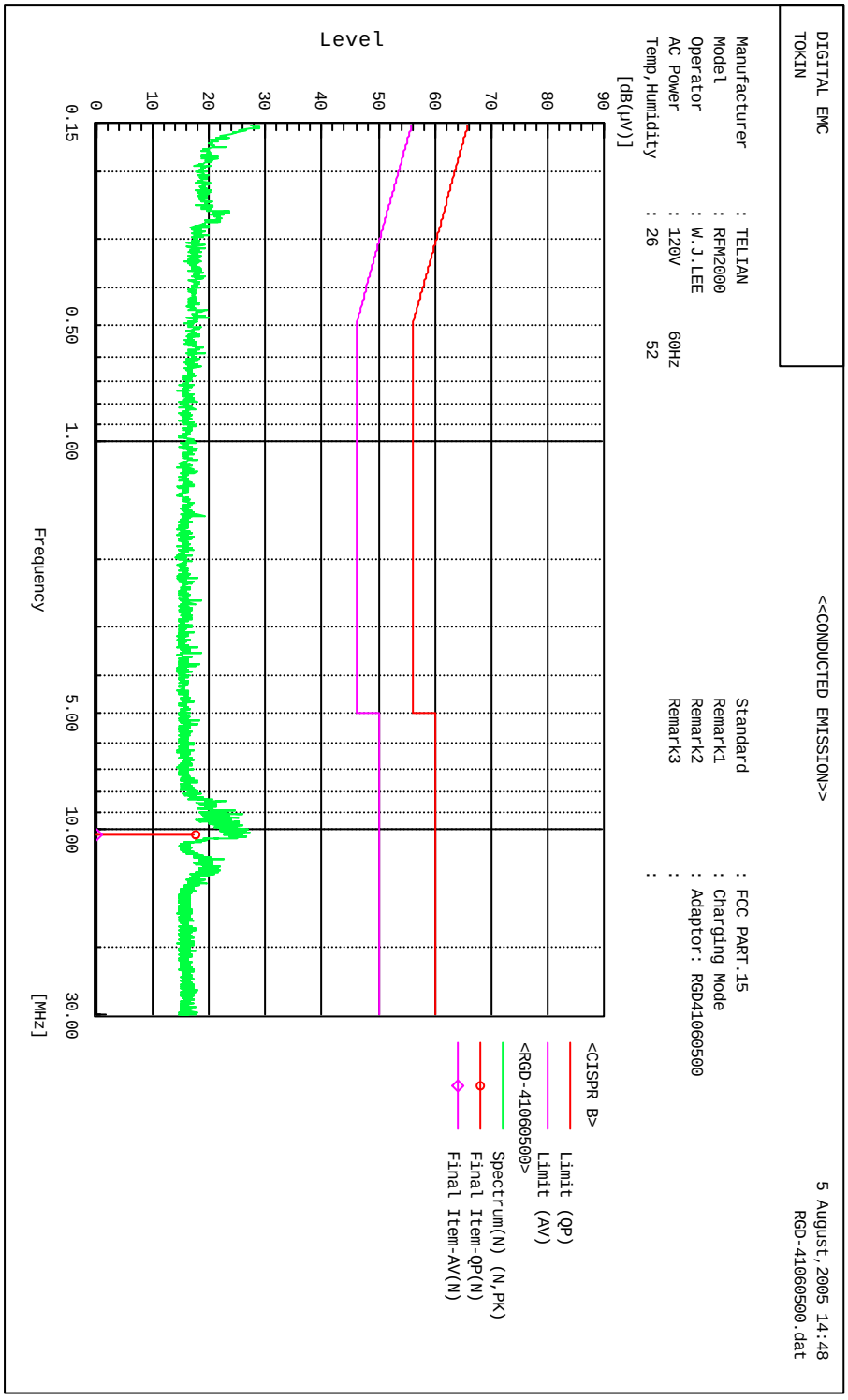
                                                                                                                5 August,2005 11:20
                                                                                                                3A-031WU05.dat

Standard        : FCC PART.15
Manufacturer    : TELIAN
Model           : RFM2000
Operator        : W.J.LEE
AC Power        : 120V          60Hz
Temp,Humidity   : 26                52
Remark1         : Charging Mode
Remark2         : Adaptor: 3A-031WU05
Remark3         :
                :
**********************************************************************************************************************************************************
Final Result

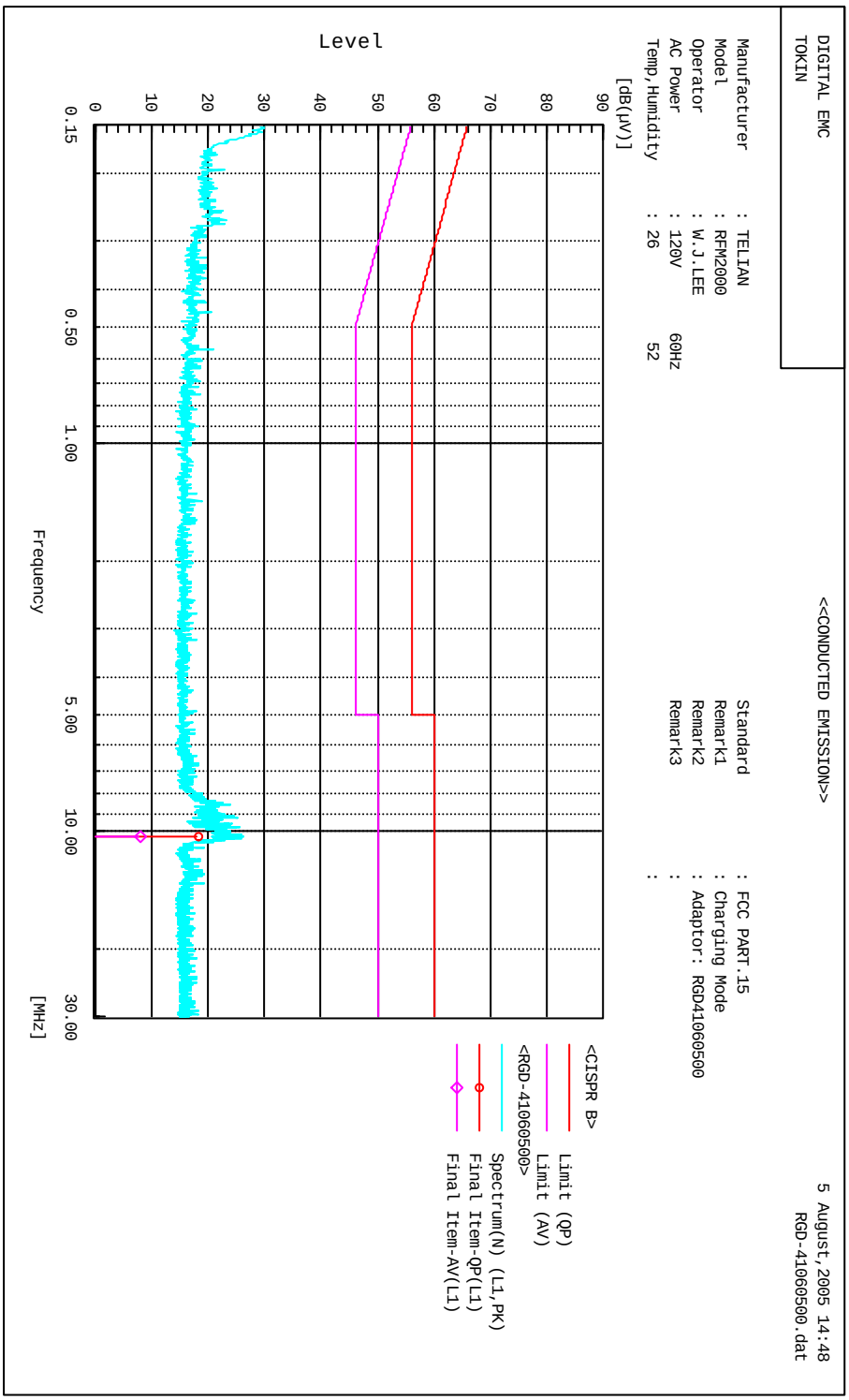
--- N Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
                   QP       AV        QP      AV      QP     AV      QP      AV
       [MHz]  [dB(µV)] [dB(µV)] [dB]  [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB]  [dB]
  1    0.189    31.0     25.1    1.2    32.2    26.3    64.1   54.1    31.9    27.8
  2    0.252    37.0     34.7    0.9    37.9    35.6    61.7   51.7    23.8    16.1
  3    1.701    35.8     32.2    0.2    36.0    32.4    56.0   46.0    20.0    13.6
  4    0.378    35.5     32.8    0.4    35.9    33.2    58.3   48.3    22.4    15.1
  5    0.692    37.0     33.4    0.3    37.3    33.7    56.0   46.0    18.7    12.3

--- L1 Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
                   QP       AV        QP      AV      QP     AV      QP      AV
       [MHz]  [dB(µV)] [dB(µV)] [dB]  [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB]  [dB]
  1    1.769    34.6     25.3    0.2    34.8    25.5    56.0   46.0    21.2    20.5
  2    0.694    31.4     20.5    0.3    31.7    20.8    56.0   46.0    24.3    25.2
```


NPQRFM2000 / Adaptor : RGD41060500 / Line



NPQRFM2000 / Adaptor : RGD41060500 / Neutral

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********************************************** DIGITAL EMC  **********************************************
                                    <<CONDUCTED EMISSION>>

                                                                    5 August,2005 14:48
                                                                    RGD-41060500.dat

Standard          : FCC PART.15
Manufacturer      : TELIAN
Model             : RFM2000
Operator          : W.J.LEE
AC Power          : 120V      60Hz
Temp,Humidity     : 26          52
Remark1           : Charging Mode
Remark2           : Adaptor: RGD41060500
Remark3           :
                  :
**********************************************************************************************************

Final Result

--- N Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
                   QP       AV          QP      AV      QP     AV      QP      AV
       [MHz]  [dB(µV)] [dB(µV)] [dB] [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB]  [dB]
  1   10.296    16.6      0.0   0.9    17.5     0.0     60.0    50.0    42.5   0.0

--- L1 Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
                   QP       AV          QP      AV      QP     AV      QP      AV
       [MHz]  [dB(µV)] [dB(µV)] [dB] [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB]  [dB]
  1   10.285    17.4      7.2   0.9    18.3     8.1     60.0    50.0    41.7   41.9
```


3.2.2 Radiated Emission

Procedure:

The EUT was placed on a 0.8m high wooden table inside a shielded enclosure. An antenna was placed near the EUT and measurements of frequencies and amplitudes of field strengths were recorded for reference during final measurements. For final radiated testing, measurements were performed in OATS. Measurements were performed with the EUT oriented in 3 orthogonal axis and rotated 360 degrees to determine worst-case orientation for maximum emissions.

The spectrum analyzer is set to:

Center frequency = the worst channel

Frequency Range = 30 MHz ~ 10th harmonic.

RBW = 120 kHz (30MHz ~ 1 GHz) VBW ≥ RBW

= 1 MHz (1 GHz ~ 10th harmonic)

Distance = 3m Detector function = peak

Trace = max hold Sweep = auto

Measurement Data: **Complies**

- No other emissions were detected at a level greater than 10dB below limit.
- Refer to the next page.

Fundamental / Harmonics emission: FCC Part 15.249(a)

Frequency (MHz)	Limit @ 3m	
	Fundamental (mV/m)	Harmonics (uV/m)
902 - 928	50	500

General Standard: FCC Part 15.209(a)

Frequency (MHz)	Limit (uV/m) @ 3m
30 ~ 88	100 **
88 ~ 216	150 **
216 ~ 960	200 **
Above 960	500

** Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88MHz, 174-216MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

Fundamental Measurement Data(worst case):

Frequency (MHz)	Pol	QP Reading (dBuV)	T.F (dBuV/m)	QP Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
918	H	49.81	-0.27	49.54	94	44.46
918	V	54.08	-0.27	53.81	94	40.19
921	H	50.21	-0.23	49.98	94	44.02
921	V	54.11	-0.23	53.88	94	40.12

Harmonic and other emission Measurement Data(worst case): Fundamental Frequency = 918MHz

Frequency (MHz)	Pol	Reading (dBuV)	T.F (dBuV/m)	Result PK (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1836	H	48.31	-3.43	44.88	54	9.12
1836	V	48.47	-3.43	45.04	54	8.96
2754	H	49.07	0.74	49.81	54	4.19
2754	V	48.37	0.74	49.11	54	4.89
-	-	-	-	-	-	-

Harmonic and other emission Measurement Data(worst case): Fundamental Frequency = 921MHz

Frequency (MHz)	Pol	Reading (dBuV)	T.F (dBuV/m)	Result QP (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1842	H	49.37	-3.25	46.13	54	7.88
1842	V	47.19	-3.25	43.95	54	10.06
2763	H	48.11	0.91	49.02	54	4.98
2763	V	46.93	0.91	47.84	54	6.16
-	-	-	-	-	-	-

Note.

1. No other emissions were detected at a level greater than 10dB below limit.
2. Sample Calculation.

   Margin = Limit – Result / Result = Reading + T.F / T.F = AF + CL - AG

   Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain

APPENDIX

TEST EQUIPMENT USED FOR TESTS

	Type	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	S/N
01	Spectrum Analyzer	Agilent	E4404B	19/11/05	30601-01-6025569
02	Spectrum Analyzer	H.P	8563E	25/09/05	3551A04634
03	Power Meter	H.P	EPM-442A	04/07/06	GB37170413
04	Power Sensor	H.P	8481A	05/07/06	3318A96332
05	Frequency Counter	H.P	5342A	07/10/05	2119A04450
06	Multfunction Synthesizer	H.P	8904A	07/10/05	3633A08404
07	Signal Generator	Rohde Schwarz	SMR20	17/05/06	101251
08	Signal Generator	H.P	E4421A	05/07/06	US37230529
09	Audio Analyzer	H.P	8903B	07/07/06	3011A0944B
10	Modulation Analyzer	H.P	8901B	05/07/06	3028A03029
11	Oscilloscope	LeCroy	9314A	10/10/05	93144390
12	CDMA Mobile Station Test Set	H.P	8924C	07/10/05	US35360688
13	Power Splitter	WEINSCHEL	1593	07/10/05	332
14	BAND Reject Filter	Wainwright	WRCG824	07/10/05	SN1
15	BAND Reject Filter	Wainwright	WRCG1750	07/10/05	SN2
16	AC Power supply	DAEKWANG	5KVA	18/04/06	N/A
17	DC Power Supply	H.P	6622A	18/04/06	465487
18	Attenuator (30dB)	H.P	8498A	07/10/05	50101
19	Attenuator (10dB)	WEINSCHEL	23-10-34	07/10/05	BP4387
20	HORN ANT	EMCO	3115	06/03/07	6419
21	HORN ANT	EMCO	3115	04/25/07	21097
22	HORN ANT	A.H.Systems	SAS-574	09/11/06	154
23	HORN ANT	A.H.Systems	SAS-574	09/11/06	155
24	Dipole Antenna	Schwarzbeck	VHA9103	29/10/05	2116
25	Dipole Antenna	Schwarzbeck	VHA9103	29/10/05	2117
26	Dipole Antenna	Schwarzbeck	UHA9105	29/10/05	2261

	Type	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	S/N
27	Dipole Antenna	Schwarzbeck	UHA9105	29/10/05	2262
28	RFI/FIELD Iintensity Meter	Kyorits	KNM-504D	07/07/06	SN-161-4
29	Frequency Converter	Kyorits	KCV-604C	07/07/06	4-230-3
30	TEMP & HUMIDITY Chamber	JISCO	J-RHC2	13/09/06	021031
31	Log Periodic Antenna	Schwarzbeck	UHALP9108A1	29/10/05	1098
32	Biconical Antenna	Schwarzbeck	VHA9103	29/10/05	VHA91031946
33	Digital Multimeter	H.P	34401A	18/04/06	3146A13475
34	Attenuator (10dB)	WEINSCHEL	23-10-34	07/10/05	BP4386
35	High-Pass Filter	ANRITSU	MP526	12/05/06	M27756
36	Attenuator (3dB)	Agilent	8491B	15/09/05	58177
37	Amplifier (25dB)	Agilent	8447D	18/04/06	2944A10144
38	Position Controller	TOKIN	5901T	N/A	14173
39	Driver	TOKIN	5902T2	N/A	14174
40	Spectrum Analyzer	H.P	8591E	18/04/06	3649A05889
41	RFI/FIELD Intensity Meter	Kyorits	KNW-2402	04/07/06	4N-170-3
42	LISN	Kyorits	KNW-407	11/08/06	8-317-8
43	LISN	Kyorits	KNW-242	11/08/06	8-654-15
44	CVCF	NF Electronic	4400	N/A	344536 4420064
45	Software	ToYo EMI	EP5/RE	N/A	Ver 2.0.800
46	Software	ToYo EMI	EP5/CE	N/A	Ver 2.0.801
47	Software	AUDIX	e3	N/A	Ver 3.0
48	Software	Agilent	Benchlink	N/A	A.01.09 021211

