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ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 22 SUBPART H and PART 24 SUBPART E **REQUIREMENT**

OF

Product Name: GSM 850/1900 mobile phone

Brand Name: Alcatel

Model Name: VLE5

Market Name: OT-E252a

FCC ID: **RAD020**

Report No.: ER/2005/50021-02

Issue Date: Aug 26, 2005

FCC Rule Part: 2 & 24E& 22H

Prepared for **TCL & Alcatel Mobile Phones**

30/F, Times Square, 500 Zhangyang Rd.,

Shanghai 200122, P.R. China

Prepared by SGS Taiwan Ltd.

No. 134, Wu Kung Rd., Wuku Industrial Zone,

Taipei County, Taiwan.

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VERIFICATION OF COMPLIANCE

TCL & Alcatel Mobile Phones **Applicant:**

30/F, Times Square, 500 Zhangyang Rd., Shanghai 200122, P.R. China

GSM 850/1900 mobile phone **Equipment Under Test:**

FCC ID Number: RAD020 Brand Name: Alcatel **Model No.:** VLE5

Market Name: OT-E252a

Model Difference: N/A

File Number: ER/2005/50021-02

Date of test: Jul 05, $2005 \sim \text{Aug } 22$, 2005

Date of EUT Received: Jul 05, 2005

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA/EIA-603-1-1998 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rule FCC PART 22 subpart H and FCC PART 24 subpart E.

The test results of this report relate only to the tested sample identified in this report.

11 1 11

Test By:	Henk Huang	Date	Aug. 26, 2005	
Prepared By:	Henk Huang Gigi yeh	Date	Aug. 26, 2005	
Approved By	Gigi Yeh Tinlet Su Vincent Su	Date	Aug. 26, 2005	



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Version

Version No.	Date
00	Aug. 24, 2005
01	Aug. 26, 2005
02	Aug 30, 2005



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1. GENERAL INFORMATION

Product Description 1.1

Product	GSM 850/1900 mobile phone				
Model Name	VLE5	VLE5			
Market Name	OT-E252a				
Model Difference:	N/A				
Trade Name	Alcatel				
Frequency Range and	TX: 824.2 MHz – 848.8 MHz	33 dBm			
Power	TX: 1850.2MHz –1909.8MHz	30 dBm			
Type of Emission	300KGXW				
Power Supply	Four 5V DC by AC/DC Adapters model number: 3DS09371AGAA,(supplier: Astec and Leader Electronics) model number: 3DS 09371AAA (supplier: Astec and Leader Electronics) One 5Vdc Car Charge Model number: 3DS 07848AAAA (supplier: Primax)				

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: RAD020 filing to comply with Section Part 22 subpart H and Part 24 subpart E of the FCC CFR 47 Rules.

1.3 **Test Methodology**

Both conducted and radiated testing were performed according to the procedures document on chapter 13 of ANSI C63.4 (2003) and FCC CFR 47.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057.



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1.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located on the address of SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 1993 and CISPR 22/EN 55022 requirements. Site No. 1(3 &10 meters) Registration Number: 94644, Anechoic chamber (3 meters) Registration Number: 573967

1.5 Special Accessories

Not available for this EUT intended for grant.

1.6 Equipment Modifications

Not available for this EUT intended for grant.



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2. SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The EUT (Transmitter) was operated in the engineering mode to fix the Tx frequency which was for the purpose of the measurements.

2.3 **Test Procedure**

2.3.1 Conducted Emissions

The EUT is placed on a turn table which is 0.8 m above ground plane. According to the requirements in Section 7 and 13 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and Average detector mode.

2.3.2 Radiated Emissions

The EUT is placed on a turn table which is 1.0 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 8 and 13 of ANSI C63.4-2003.



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2.4 Configuration of Tested System

Fig. 2-1 ConFig. 2-1 Configuration of Tested System

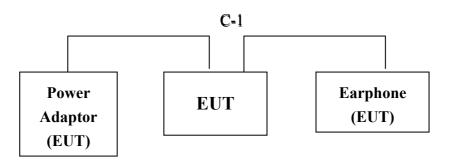


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	FCC ID	Series No.	Data Cable	Power Cord
1.	N/A						



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3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§2.1046(a)		
§22.913(a)	RF Power Output	Compliant
§24.232(a)		
§2.1046(a)		
§22.913(a)	ERP/ EIRP measurement	Compliant
§24.232(a)		
§2.1049(h)	99% Occupied Bandwidth	Compliant
§2.1051	Out of Band Emissions at Antenna	
§22.917(a)	Terminals and	Compliant
§24.238(a)	Band Edge	
§2.1053		
§22.917(a)	Field Strength of Spurious Radiation	Compliant
§24.238(a)		
§2.1055(a)(1)(b)	Frequency Stability vs. Temperature	Compliant
§2.1055(d)(1)(2)	Frequency Stability vs. Voltage	Compliant
§15.107;§15.207	AC Power Line Conducted Emission	Compliant

DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

EUT staying in continuous transmitting mode. Channel Low, Mid and High for each type and band with rated data rate are chosen for full testing.

The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for both GSM and GPRS with all power adaptors. The worst-case E1 mode with power adaptor model number: 3DS09371AGAA, Suppler : Leader for channel Low, Mid and High at GSM mode was reported.



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RF POWER OUTPUT MEASUREMENT

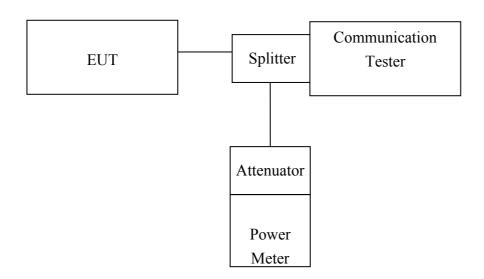
5.1 Standard Applicable

According to FCC §2.1046.

FCC 22.913(a) Mobile station are limited to 7W.

FCC 24.232(b) Mobile station are limited to 2W.

5.2 **Test Set-up:**



Note: Measurement setup for testing on Antenna connector

5.3 **Measurement Procedure**

The transmitter output was connected to a calibrated attenuator, the other end of which was connected to a power meter. Transmitter output was read off the power meter in dBm. The power output at the transmitter antenna port was determined by adding the value of the attenuator to the power meter reading.

5.4 Measurement Equipment Used:

Conducted Emission Test Site							
EQUIPMENT MFR MODEL SERIAL LAST CAL DU							
TYPE		NUMBER	NUMBER	CAL.			
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2005	03/28/2006		
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2005	06/29/2006		



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Spectrum Analyzer	R&S	FSP 40	100034	11/09/2004	11/10/2005
Power Sensor	Anritsu	MA2490A	31431	06/28/2005	06/29/2006
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2005	06/29/2006
Temperature Chamber	TERCHY	MHG-120LF	911009	11/11/2004	11/12/2005
Low Loss Cable	HUBER+SUHNE R	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circult	BW-S10W5	N/A	10/07/2004	10/06/2005
Attenuator	Mini-Circult	BW-S6W5	N/A	10/07/2004	10/06/2005
Splitter	Mini-Circult	ZFSC-2-10G	N/A	10/07/2004	10/06/2005
Signal Generator	R&S	SMR40	100210	11/09/2004	11/10/2005
Diode Detector	Agilent	8471E	MY4224	N/A	N/A
AC Power Supply	APW-105N	887592	All Power	N/A	N/A



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5.5 Measurement Result

EUT Mode	Frequency (MHz)	СН	CMU200 Reading (dBm)	Offset (dB)	Average Power (dBm)
GSM 850	824.20	128	9.22	23.30	32.52
	836.60	190	9.12	23.30	32.42
	848.80	251	8.67	23.30	31.97

EUT Mode	Frequency (MHz)	СН	CMU200 Reading (dBm)	Offset (dB)	Average Power (dBm)
PCS 1900	1850.20	512	5.16	24.82	29.98
	1880.00	661	5.14	24.82	29.96
	1909.80	810	5.10	24.82	29.92



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6. ERP, EIRP MEASUREMENT

Standard Applicable 6.1

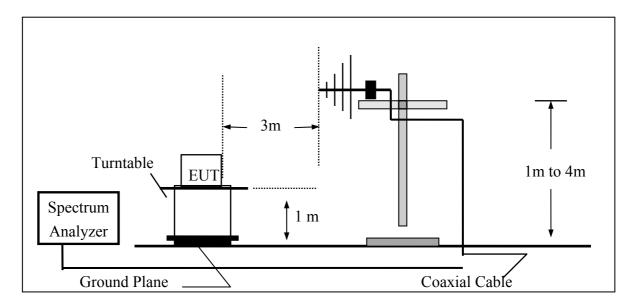
According to FCC §2.1046

FCC 22.913(a) Mobile station are limited to 7W ERP.

FCC 24.232(b) Mobile station are limited to 2W EIRP.

6.2 Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz

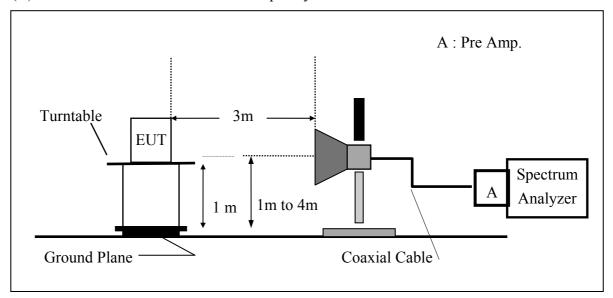




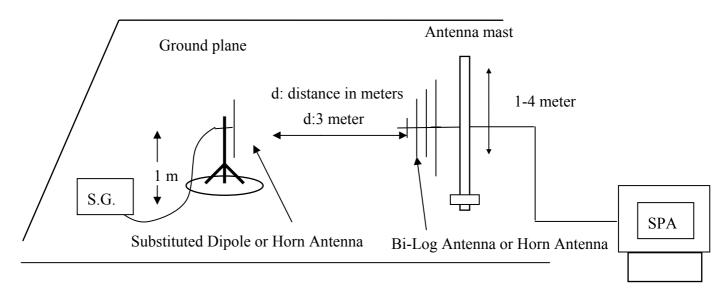
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(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



(C) Substituted Method Test Set-UP





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6.3 **Measurement Procedure**

The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.

During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.

ERP in frequency band 824.2 –848.80.8MHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:

EIRP in frequency band 1850.2 –1909.8MHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:

ERP = S.G. output (dBm) + Antenna Gain (dBd) - Cable Loss (dB)

EIRP = S.G. output (dBm) + Antenna Gain (dBi) - Cable Loss (dB)



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6.4 Measurement Equipment Used:

EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
Spectrum Analyzer	R&S	FSP 40	100034	05/27/2005	05/26/2006
Spectrum Analyzer	Agilent	E7405A	US41160416	08/27/2004	08/26/2005
Bilog Antenna	SCHWAZBECK	VULB9163	152	06/03/2005	06/02/2006
Horn antenna	Schwarzbeck	BBHA 9120D	309/320	08/16/2004	08/15/2005
Pre-Amplifier	HP	8447D	2944A09469	07/19/2005	07/18/2006
Pre-Amplifier	HP	8494B	3008A00578	02/26/2005	02/25/2006
Signal Generator	R&S	SMR40	100210	02/09/2005	02/10/2006
Turn Table	HD	DT420	N/A	N.C.R	N.C.R
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R
Controller	HD	HD100	N/A	N.C.R	N.C.R
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-10M	10m	10/09/2004	10/08/2005
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	10/09/2004	10/08/2005
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-0.5M	0.5m	10/09/2004	10/08/2005
Site NSA	SGS	966 chamber	N/A	11/17/2004	11/16/2005
Site NSA	SGS	10m Open-Site	N/A	10/02/2004	10/01/2005
Attenuator	Mini-Circult	BW-S10W5	N/A	10/07/2004	10/06/2005
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2004	10/13/2005
Dipole Antenna	Schwarzbeck	VHAP	908/909	06/10/2005	06/11/2006
Dipole Antenna	Schwarzbeck	UHAP	891/892	06/10/2005	06/11/2006
Horn antenna	Schwarzbeck	BBHA 9120D	N/A	08/16/2004	08/15/2005



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6.5 Measurement Result

EUT Mode	Frequency (MHz)	СН	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
				V	123.27	35.95	-7.87	3.64	24.43	38.45
			Н	Н	126.63	40.98	-7.87	3.64	27.46	38.45
		1.0	E1	V	127.07	39.75	-7.87	3.64	28.23	38.45
	824.20	128	EI	Н	125.43	37.78	-7.87	3.64	26.26	38.45
			Е2	V	118.34	31.01	-7.87	3.64	19.50	38.45
			E2	Н	126.87	26.77	-7.87	5.84	13.06	38.45
	836.50) 190		V	122.96	35.93	-7.88	3.70	24.36	38.45
			Н	Н	126.72	41.39	-7.88	3.70	26.81	38.45
			E1	V	126.93	39.90	-7.88	3.70	28.33	38.45
GSM 850				Н	125.77	38.43	-7.88	3.70	26.86	38.45
			E2	V	117.46	30.43	-7.88	3.70	18.86	38.45
				Н	126.72	39.38	-7.88	3.70	27.81	38.45
				V	123.54	36.80	-7.88	3.75	25.18	38.45
			Н	Н	126.29	41.27	-7.88	3.75	27.64	38.45
	040.00	0.40.00	F.1	V	127.47	40.73	-7.88	3.75	29.10	38.45
	848.80	251	E1	Н	126.51	39.49	-7.88	3.75	27.86	38.45
			Е2	V	117.28	30.54	-7.88	3.75	18.91	38.45
		E2	Н	126.94	39.92	-7.88	3.75	28.29	38.45	

Remark:

The RBW, VBW of SPA for frequency (1)

Below 1GHz was RBW=100 KHz, VBW=300KHz,

Above 1GHz was RBW= 1MHz, VBW= 3MHz



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EUT Mode	Frequency (MHz)	СН	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
				V	123.19	16.23	9.90	5.41	20.72	33.00
			Н	Н	127.55	20.66	9.90	5.41	25.15	33.00
	1050 20		E1	V	129.90	22.94	9.90	5.41	27.43	33.00
	1850.20	512	EI	Н	124.96	18.07	9.90	5.41	22.56	33.00
			БЭ	V V	126.12	19.16	9.90	5.41	23.65	33.00
			E2 H	Н	129.15	22.26	9.90	5.84	26.32	33.00
		661	Н	, V	124.60	17.65	9.99	5.46	22.18	33.00
			п	Н	127.88	21.01	9.99	5.46	25.54	33.00
D.G. 1000	1880.00		E1	V	130.26	23.31	9.99	5.46	27.84	33.00
PCS 1900				Н	125.76	18.89	9.99	5.46	23.42	33.00
			E2	V	127.44	20.49	9.99	5.46	25.02	33.00
				Н	129.76	23.39	9.99	5.46	27.42	33.00
			7.7	V	123.25	16.31	10.08	5.51	20.88	33.00
			Н	Н	128.29	21.44	10.08	5.51	26.00	33.00
	1000.80	010	Б1	V	129.73	22.79	10.08	5.51	27.36	33.00
	1909.80 8		E1	Н	126.86	20.01	10.08	5.51	24.57	33.00
			F2	V	126.16	19.22	10.08	5.51	23.79	33.00
			E2	Н	128.39	24.54	10.08	5.51	26.10	33.00

Remark:

The RBW, VBW of SPA for frequency (1)

Below 1GHz was RBW=100 KHz, VBW=300KHz,

Above 1GHz was RBW= 1MHz, VBW= 3MHz



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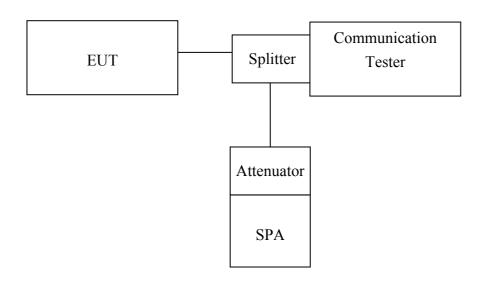
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7. OCCUPIED BANDWIDTH MEASUREMENT

7.1 Standard Applicable

According to §FCC 2.1049.

7.2 Test Set-up:



Note: Measurement setup for testing on Antenna connector

7.3 **Measurement Procedure**

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW (10/30KHz) was set to about 1% of emission BW, VBW= 3 times RBW(30/100KHz), -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

7.4 Measurement Equipment Used:

Conducted Emission Test Site								
EQUIPMENT	MFR	MODEL SERIAL		LAST	CAL DUE.			
TYPE		NUMBER	NUMBER	CAL.				
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2005	03/28/2006			
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2005	06/29/2006			
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2004	11/10/2005			



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Power Sensor	Anritsu	MA2490A	31431	06/28/2005	06/29/2006
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2005	06/29/2006
Temperature Chamber	TERCHY	MHG-120LF	911009	11/11/2004	11/12/2005
Low Loss Cable	HUBER+SUHNE R	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circult	BW-S10W5	N/A	10/07/2004	10/06/2005
Attenuator	Mini-Circult	BW-S6W5	N/A	10/07/2004	10/06/2005
Splitter	Mini-Circult	ZFSC-2-10G	N/A	10/07/2004	10/06/2005
Signal Generator	R&S	SMR40	100210	11/09/2004	11/10/2005
Diode Detector	Agilent	8471E	MY4224	N/A	N/A
AC Power Supply	APW-105N	887592	All Power	N/A	N/A



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7.5 Measurement Result:.

EUT Mode	Frequency (MHz)	СН	Bandwidth (MHz)	
	824.20	128	0.2430	
GSM 850	836.60	190	0.23855	
	848.80	251	0.23822	

EUT Mode	Frequency (MHz)	СН	Bandwidth (MHz)
	1850.20	512	0.23643
PCS 1900	1880.00	661	0.23690
	1909.80	810	0.23854



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Figure 7-1: GSM Channel Low

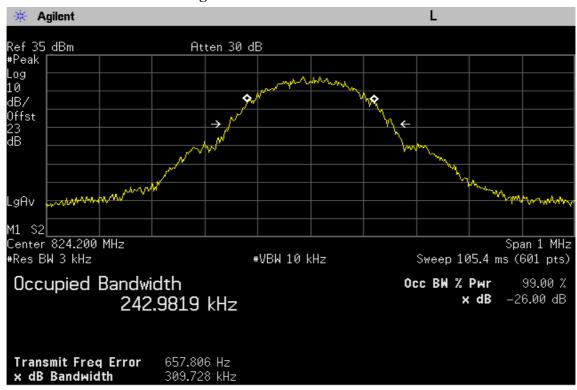
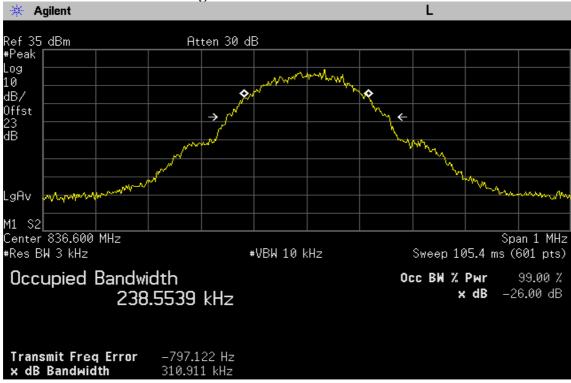


Figure 7-2 GSM Channel Mid

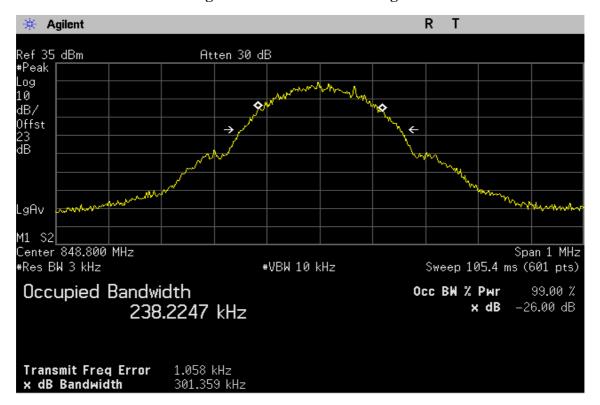




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Figure 7-3: GSM Channel High

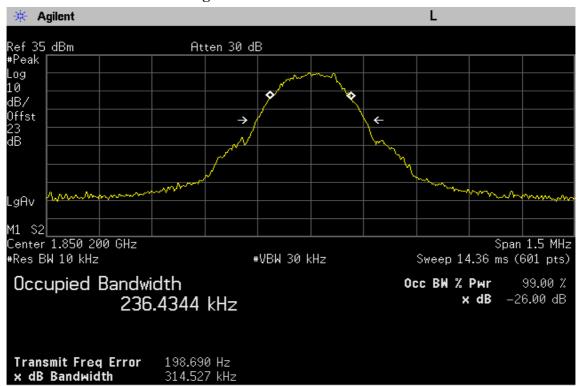




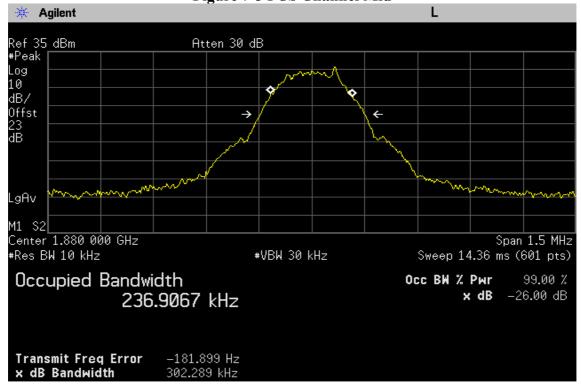
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Figure 7-4: PCS Channel Low





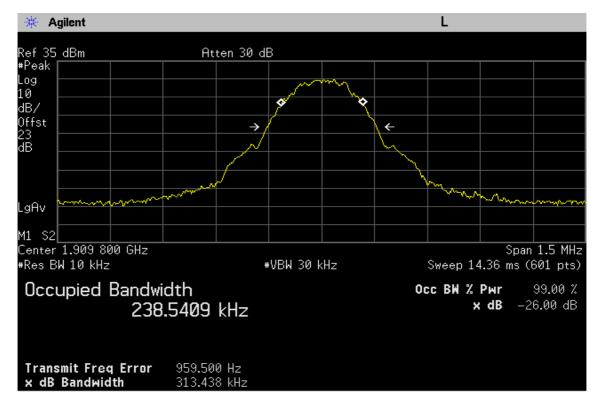




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Figure 7-6: PCS Channel High





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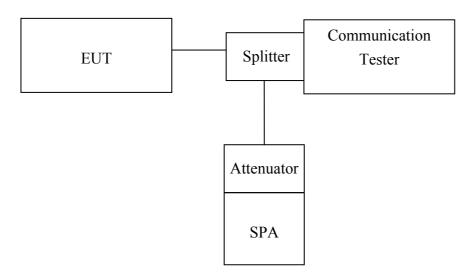
OUT OF BAND EMISSION AT ANTENNA TERMINALS

8.1 **Standard Applicable**

According to FCC §2.1051.

FCC §22.917(a),§24.238(a), the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specified in the instruction manual and/ or alignment procedure, shall not be less than 43 + 10 log (mean output power in watts) dBc below the mean power output outside a license's frequency block (-13dBm)

8.2 **Test SET-UP**



Note: Measurement setup for testing on Antenna connector

8.3 **Measurement Procedure**

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.

For the out of band: Set the RBW, VBW = 1MHz, Start=30MHz, Stop= 10th harmonic. Limit = -13dBm

Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions. Limit. -13dBm.



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8.4 Measurement Equipment Used:

Conducted Emission Test Site								
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.			
TYPE		NUMBER	NUMBER	CAL.				
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2005	03/28/2006			
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2005	06/29/2006			
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2004	11/10/2005			
Power Sensor	Anritsu	MA2490A	31431	06/28/2005	06/29/2006			
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2005	06/29/2006			
Temperature Chamber	TERCHY	MHG-120LF	911009	11/11/2004	11/12/2005			
Low Loss Cable	HUBER+SUHNE R	SUCOFLEX 104PEA	N/A	N/A	N/A			
Attenuator	Mini-Circult	BW-S10W5	N/A	10/07/2004	10/06/2005			
Attenuator	Mini-Circult	BW-S6W5	N/A	10/07/2004	10/06/2005			
Splitter	Mini-Circult	ZFSC-2-10G	N/A	10/07/2004	10/06/2005			
Signal Generator	R&S	SMR40	100210	11/09/2004	11/10/2005			
Diode Detector	Agilent	8471E	MY4224	N/A	N/A			
AC Power Supply	APW-105N	887592	All Power	N/A	N/A			



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8.5 **Measurement Result**

Figure 8-1: Out of Band emission at antenna terminals—GSM Channel Lowest

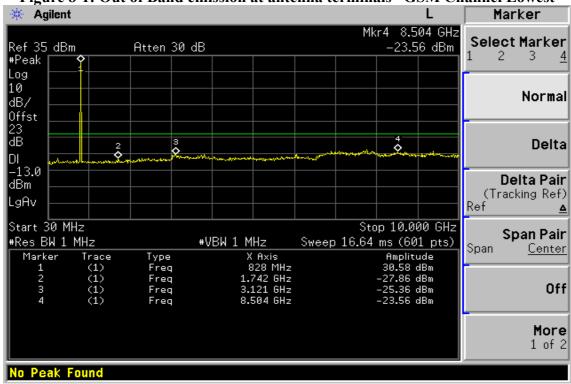


Figure 8-2: Out of Band emission at antenna terminals –GSM Channel Mid

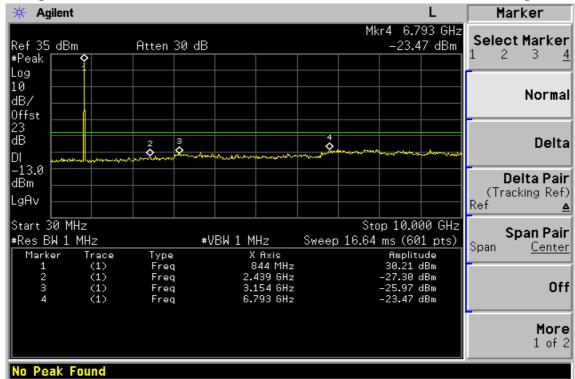




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Figure 8-3: Out of Band emission at antenna terminals-GSM Channel Highest





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Figure 8-4: Bad edge emission at antenna terminals – GSM Channel Lowest

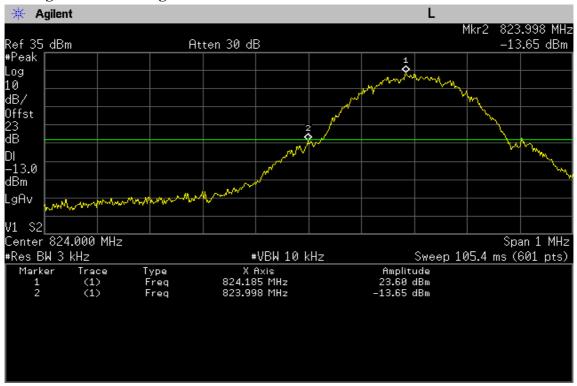
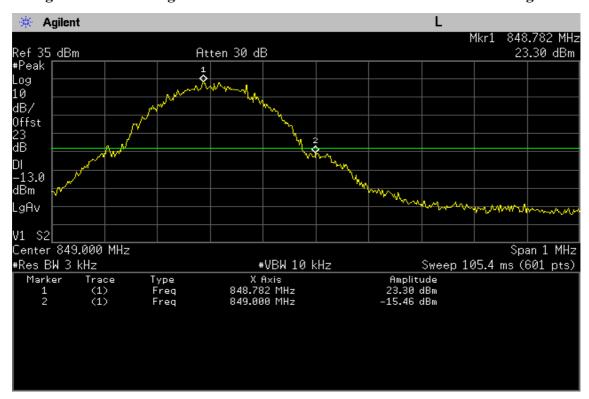


Figure 8-5: Band edge emission at antenna terminals – GSM Channel Highest





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Figure 8-6: Out of Band emission at antenna terminals- PCS Channel Lowest

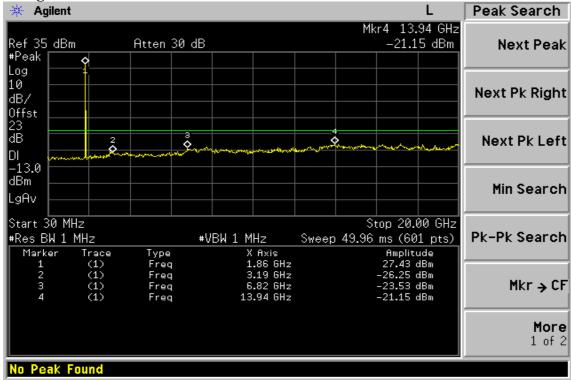
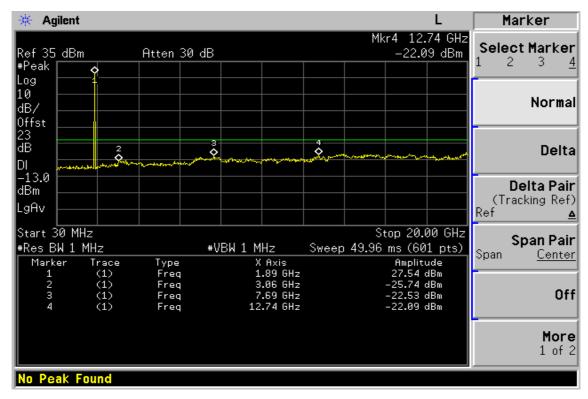


Figure 8-7: Out of Band emission at antenna terminals –PCS Channel Mid

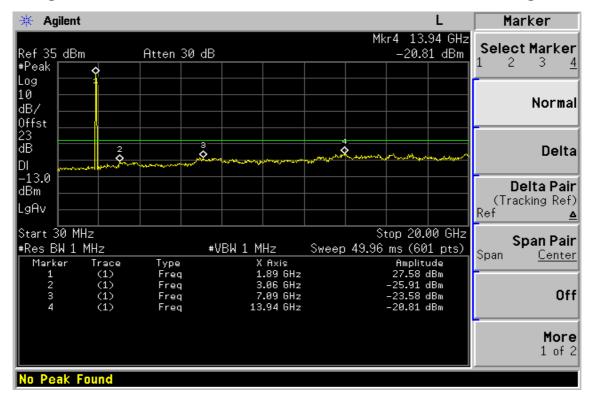




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Figure 8-8: Out of Band emission at antenna terminals-PCS Channel Highest





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Figure 8-9: Bad edge emission at antenna terminals – PCS Channel Lowest

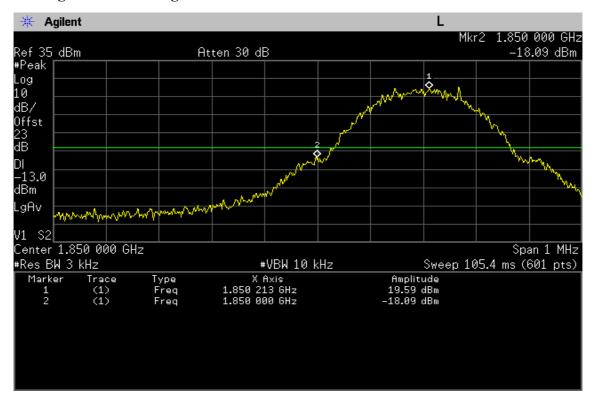
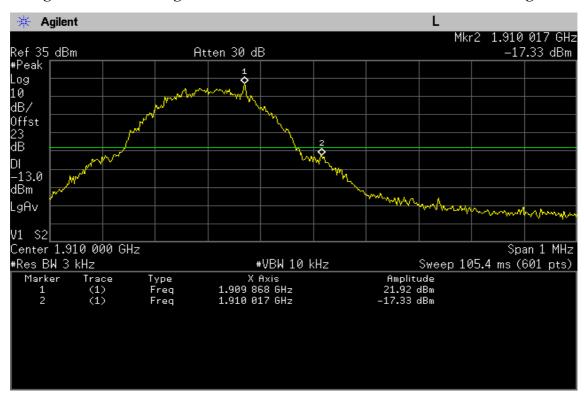


Figure 8-10: Band edge emission at antenna terminals – PCS Channel Highest





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9. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

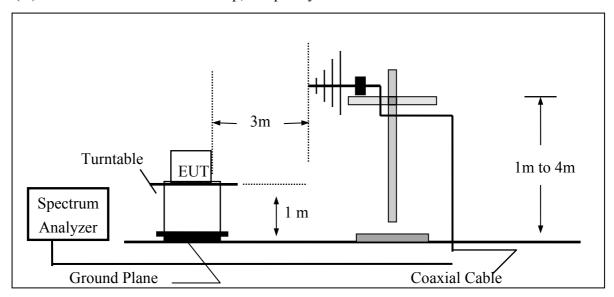
9.1 **Standard Applicable**

According to FCC §2.1053,

FCC §22.917(a),§24.238(a), the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specified in the instruction manual and/ or alignment procedure, shall not be less than 43 + 10 log (mean output power in watts) dBc below the mean power output outside a license's frequency block (-13dBm)

9.2 **EUT Setup (Block Diagram of Configuration)**

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz

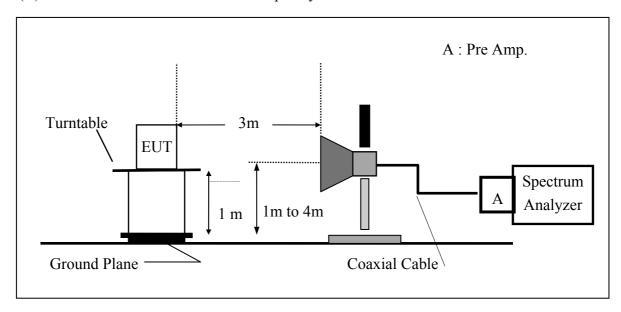




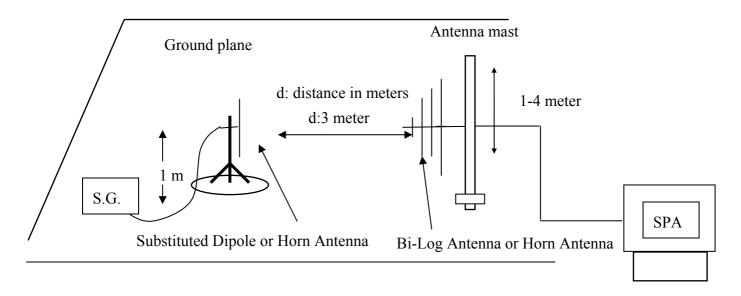
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(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



(C) Substituted Method Test Set-UP





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9.3 **Measurement Procedure**

The EUT was placed on a non-conductive, The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission were identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

ERP = S.G. output (dBm) + Antenna Gain(dBd) - Cable Loss <math>(dB)

EIRP = S.G. output (dBm) + Antenna Gain(dBi) – Cable Loss (dB)



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9.4 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	R&S	FSP 40	100034	05/27/2005	05/26/2006
Spectrum Analyzer	Agilent	E7405A	US41160416	08/27/2004	08/26/2005
Bilog Antenna	SCHWAZBECK	VULB9163	152	06/03/2005	06/02/2006
Horn antenna	Schwarzbeck	BBHA 9120D	309/320	08/16/2004	08/15/2005
Pre-Amplifier	НР	8447D	2944A09469	07/19/2005	07/18/2006
Pre-Amplifier	НР	8494B	3008A00578	02/26/2005	02/25/2006
Signal Generator	R&S	SMR40	100210	02/09/2005	02/10/2006
Turn Table	HD	DT420	N/A	N.C.R	N.C.R
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R
Controller	HD	HD100	N/A	N.C.R	N.C.R
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-10M	10m	10/09/2004	10/08/2005
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	10/09/2004	10/08/2005
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-0.5M	0.5m	10/09/2004	10/08/2005
Site NSA	SGS	966 chamber	N/A	11/17/2004	11/16/2005
Site NSA	SGS	10m Open-Site	N/A	10/02/2004	10/01/2005
Attenuator	Mini-Circult	BW-S10W5	N/A	10/07/2004	10/06/2005
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2004	10/13/2005
Dipole Antenna	Schwarzbeck	VHAP	908/909	06/10/2005	06/11/2006
Dipole Antenna	Schwarzbeck	UHAP	891/892	06/10/2005	06/11/2006
Horn antenna	Schwarzbeck	BBHA 9120D	N/A	08/16/2004	08/15/2005

9.5 **Measurement Result**

Refer to attach tabular data sheets.



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Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode : TX CH Low E1 Mode Test Date: Jul.20, 2005

Fundamental Frequency : 824.20 MHz Test By: Henk **Temperature** Pol: Ver / Hor : 25°C

Adaptor Model: 3DS09371AGAA Humidity : 65%

> Supplier: Leader

Freq.	SPA. Reading	Ant.Pol.	S.G Output	Antenna Gain	Cable Loss	ERP/ EIRP	Limit	Safe Margin
(MHz)	(dBuV)	H/V	(dBm)	(dB/dBi)	(dB)	(dBm)	(dBm)	(dBm)
75.59	49.78	V	-61.74	-1.85	1.05	-64.65	-13.00	-51.65
824.00	81.29	V	-6.04	-7.87	3.64	-17.56	-13.00	-4.56
1645.00	58.11	V	-48.93	9.28	5.05	-44.70	-13.00	-31.70
2462.50	54.03	V	-50.10	10.08	6.28	-46.30	-13.00	-33.30
3295.00	37.74	V	-64.84	12.16	7.25	-59.93	-13.00	-46.93
4945.62		V					-13.00	
5769.89		V					-13.00	
6594.16		V					-13.00	
7418.43		V					-13.00	
8242.70		V					-13.00	
32.91	45.67	Н	-59.33	-5.98	0.71	-66.02	-13.00	-53.02
824.00	84.10	Н	-3.56	-7.87	3.64	-15.08	-13.00	-2.08
1645.00	58.53	Н	-48.48	9.28	5.05	-44.25	-13.00	-31.25
2462.00	48.02	Н	-56.10	10.08	6.28	-52.30	-13.00	-39.30
4945.62		Н					-13.00	
5769.89		Н					-13.00	
6594.16		Н					-13.00	
7418.43		Н					-13.00	
8242.70 Remark:		Н					-13.00	

Remark:

- 1 The emission behaviour belongs to narrowband spurious emission.
- Remark"---" means that the emission level is too low to be measured
- The result basic equation calculation is as follows:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dBd/dBi) Cable loss (dB)



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Radiated Spurious Emission Measurement Result: GSM 850 Mode

: TX CH Mid E1 Mode Operation Mode Test Date: Jul.20, 2005

Fundamental Frequency: 836.60 MHz Test By: Henk Temperature : 25℃ Pol: Ver / Hor

Humidity : 65% Adaptor Model: 3DS09371AGAA

> Supplier: Leader

Freq.	SPA. Reading	Ant.Pol.	S.G Output	Antenna Gain	Cable Loss	ERP/ EIRP	Limit	Safe Margin
(MHz)	(dBuV)	H/V	(dBm)	(dB/dBi)	(dB)	(dBm)	(dBm)	(dBm)
39.70	44.62	V	-57.27	-2.79	0.78	-60.84	-13.00	-47.84
1652.50	64.17	V	-42.87	9.30	5.06	-38.63	-13.00	-25.63
2492.50	51.55	V	-52.40	10.06	6.32	-48.65	-13.00	-35.65
3332.50	37.73	V	-64.84	12.24	7.28	-59.87	-13.00	-46.87
5019.12		V					-13.00	
5855.64		V					-13.00	
6692.16		V					-13.00	
7528.68		V					-13.00	
8365.20		V					-13.00	
39.70	45.53	Н	-57.36	-2.79	0.78	-60.94	-13.00	-47.94
1652.50	63.42	Н	-43.59	9.30	5.06	-39.35	-13.00	-26.35
2492.50	45.38	Н	-58.56	10.06	6.32	-54.82	-13.00	-41.82
3331.50	39.19	Н	-63.14	12.24	7.28	-58.18	-13.00	-45.18
5855.64		Н					-13.00	
6692.16		Н					-13.00	
7528.68		Н					-13.00	
8365.20		Н					-13.00	

Remark:

- 1 The emission behaviour belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dBd/dBi) Cable loss (dB)



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Radiated Spurious Emission Measurement Result: GSM 850 Mode

: TX CH High E1 Mode Operation Mode Test Date: Jul.20, 2005

Fundamental Frequency: 848.80 MHz Test By: Henk **Temperature** : 25°C Pol: Ver / Hor

Humidity : 65% Adaptor Model: 3DS09371AGAA

> Supplier: Leader

Freq.	SPA. Reading	Ant.Pol.	S.G Output	Antenna Gain	Cable Loss	ERP/ EIRP	Limit	Safe Margin
(MHz)	(dBuV)	H/V	(dBm)	(dB/dBi)	(dB)	(dBm)	(dBm)	(dBm)
39.70	44.87	V	-57.02	-2.79	0.78	-60.59	-13.00	-47.59
849.00	82.34	V	-4.39	-7.88	3.75	-16.02	-13.00	-3.02
1982.50	70.24	V	-36.67	10.30	5.64	-32.01	-13.00	-19.01
2545.00	54.28	V	-49.51	10.19	6.40	-45.72	-13.00	-32.72
3392.50	39.11	V	-63.43	12.38	7.33	-58.39	-13.00	-45.39
5942.09		V					-13.00	
6790.96		V					-13.00	
7639.83		V					-13.00	
8488.70		V					-13.00	
	<u> </u>	Ī		1			1	
31.94	45.86	Н	-59.44	-6.43	0.70	-66.57	-13.00	-53.57
849.00	79.86	Н	-7.16	-7.88	3.75	-18.78	-13.00	-5.78
1682.50	63.58	Н	-43.41	9.39	5.11	-39.13	-13.00	-26.13
2545.00	46.73	Н	-57.05	10.19	6.40	-53.26	-13.00	-40.26
3392.50	39.19	Н	-63.10	12.38	7.33	-58.05	-13.00	-45.05
5942.09		Н					-13.00	
6790.96		Н					-13.00	
7639.83		Н					-13.00	
8488.70		Н					-13.00	

Remark:

- The emission behaviour belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dBd/dBi) Cable loss (dB)



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Radiated Spurious Emission Measurement Result: PCS 1900 Mode

: TX CH Low E1 Mode Operation Mode Test Date Jul.20, 2005

Fundamental Frequency: 1850.20MHz Test By: Henk Temperature : 25℃ Pol: Ver / Hor

Humidity : 65% Adaptor Model: 3DS09371AGAA

> Supplier: Leader

						Supplier.	1	1001
Freq.	SPA. Reading	Ant.Pol.	S.G Output	Antenna Gain	Cable Loss	ERP/ EIRP	Limit	Safe Margin
(MHz)	(dBuV)	H/V	(dBm)	(dB/dBi)	(dB)	(dBm)	(dBm)	(dBm)
31.94	51.37	V	-52.77	-6.43	0.70	-59.90	-13.00	-46.90
1850.00	80.72	V	-26.24	9.90	5.41	-21.75	-13.00	-8.75
3695.50	47.61	V	-53.99	12.61	7.72	-49.10	-13.00	-36.10
5550.60		V					-13.00	
7400.80		V					-13.00	
9251.00		V					-13.00	
11101.20		V					-13.00	
12951.40		V					-13.00	
14801.60		V					-13.00	
16651.80		V					-13.00	
18502.00		V					-13.00	
31.94	47.00	Н	-58.30	-6.43	0.70	-65.43	-13.00	-52.43
1645.00	58.53	Н	-48.48	9.28	5.05	-44.25	-13.00	-31.25
3692.50	47.61	Н	-53.78	12.61	7.71	-48.89	-13.00	-35.89
5550.60		Н					-13.00	
7400.80		Н					-13.00	
9251.00		Н					-13.00	
11101.20		Н					-13.00	
12951.40		Н					-13.00	
14801.60		Н					-13.00	
16651.80		Н					-13.00	
18502.00		Н					-13.00	

Remark:

- 1 The emission behaviour belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dBd/dBi) Cable loss (dB)



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Radiated Spurious Emission Measurement Result: PCS 1900 Mode

: TX CH Mid E1 Mode Operation Mode Test Date Jul.20, 2005

Fundamental Frequency: 1880MHz Test By Henk Temperature Pol Ver / Hor : 25°C

Adaptor Model: 3DS09371AGAA Humidity : 65%

> Supplier: Leader

Freq.	SPA. Reading	Ant.Pol.	S.G Output	Antenna Gain	Cable Loss	ERP/ EIRP	Limit	Safe Margin
(MHz)	(dBuV)	H/V	(dBm)	(dB/dBi)	(dB)	(dBm)	(dBm)	(dBm)
39.70	44.84	V	-57.05	-2.79	0.78	-60.62	-13.00	-47.62
3692.50	47.61	V	-54.00	12.61	7.71	-49.11	-13.00	-36.11
5640.00		V					-13.00	
7520.00		V					-13.00	
9400.00		V					-13.00	
11280.00		V					-13.00	
13160.00		V					-13.00	
15040.00		V					-13.00	
16920.00		V					-13.00	
18800.00		V					-13.00	
31.94	47.39	Н	-57.91	-6.43	0.70	-65.04	-13.00	-52.04
3692.50	42.49	Н	-58.90	12.61	7.71	-54.01	-13.00	-41.01
7520.00		Н					-13.00	
9400.00		Н					-13.00	
11280.00		Н					-13.00	
13160.00		Н					-13.00	
15040.00		Н					-13.00	
16920.00		Н					-13.00	
18800.00		Н					-13.00	

Remark:

- 1 The emission behaviour belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dBd/dBi) Cable loss (dB)



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Radiated Spurious Emission Measurement Result: PCS 1900 Mode

: TX CH High E1 Mode Operation Mode **Test Date** Jul.20, 2005

Fundamental Frequency: 1909.8 MHz Test By Henk **Temperature** Pol Ver / Hor : 25°C

3DS09371AGAA Humidity : 65% Adaptor Model:

> Supplier: Leader

Freq.	SPA. Reading	Ant.Pol.	S.G Output	Antenna Gain	Cable Loss	ERP/ EIRP	Limit	Safe Margin
(MHz)	(dBuV)	H/V	(dBm)	(dB/dBi)	(dB)	(dBm)	(dBm)	(dBm)
30.00	46.95	V	-57.75	-7.34	0.69	-65.78	-13.00	-52.78
1910.00	83.49	V	-23.45	10.08	5.51	-18.88	-13.00	-5.88
3812.50	46.33	V	-54.73	12.60	7.90	-50.03	-13.00	-37.03
5725.00	35.85	V	-58.87	13.49	9.78	-55.15	-13.00	-42.15
7639.20		V					-13.00	
9549.00		V					-13.00	
11458.80		V					-13.00	
13368.60		V					-13.00	
15278.40		V					-13.00	
17188.20		V					-13.00	
19098.00		V					-13.00	
31.94	46.63	Н	-58.67	-6.43	0.70	-65.80	-13.00	-52.80
1910.00	77.88	Н	-28.97	10.08	5.51	-24.41	-13.00	-11.41
3812.50	47.02	Н	-53.87	12.60	7.90	-49.17	-13.00	-36.17
7639.20		Н					-13.00	
9549.00		Н					-13.00	
11458.80		Н					-13.00	
13368.60		Н					-13.00	
15278.40		Н					-13.00	
17188.20		Н					-13.00	
19098.00		Н					-13.00	

Remark:

- 1 The emission behaviour belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dBd/dBi) Cable loss (dB)



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10. FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

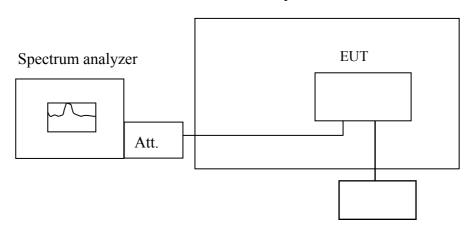
10.1 Standard Applicable

According to FCC §2.1055(a)(1)(b).

Frequency Tolerance: 2.5 ppm

10.2 Test Set-up:

Temperature Chamber



Variable Power Supply

Note: Measurement setup for testing on Antenna connector

10.3 Measurement Procedure

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30° C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.



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10.4 Measurement Equipment Used:

	Conducto	ed Emission T	est Site		
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2005	03/28/2006
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2005	06/29/2006
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2004	11/10/2005
Power Sensor	Anritsu	MA2490A	31431	06/28/2005	06/29/2006
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2005	06/29/2006
Temperature Chamber	TERCHY	MHG-120LF	911009	11/11/2004	11/12/2005
Low Loss Cable	HUBER+SUHNE R	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circult	BW-S10W5	N/A	10/07/2004	10/06/2005
Attenuator	Mini-Circult	BW-S6W5	N/A	10/07/2004	10/06/2005
Splitter	Mini-Circult	ZFSC-2-10G	N/A	10/07/2004	10/06/2005
Signal Generator	R&S	SMR40	100210	11/09/2004	11/10/2005
Diode Detector	Agilent	8471E	MY4224	N/A	N/A
AC Power Supply	APW-105N	887592	All Power	N/A	N/A



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10.5 Measurement Result

Re	ference Frequency:	GSM Mid Chann	el 836.6 MHz @ 25	5°C
	Limit	: +/- 2.5 ppm = 20	91 Hz	
Power Supply	Environment	Frequency	Dolto (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)
3.7	-30	836.59946	110.00	2091
3.7	-20	836.59973	-160.00	2091
3.7	-10	836.59950	70.00	2091
3.7	0	836.59965	-80.00	2091
3.7	10	836.59958	-10.00	2091
3.7	20	836.59957	0.00	2091
3.7	30	836.59983	-260.00	2091
3.7	40	836.59978	-210.00	2091
3.7	50	836.59981	-240.00	2091

Re	eference Frequency	: PCS Mid Channe	el 1880 MHz @ 25	5℃
	Limit	+/-2.5 ppm = 47	00 Hz	
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)	Della (112)	Lillit (112)
3.7	-30	1879.99854	-170.00	4700
3.7	-20	1879.99847	-100.00	4700
3.7	-10	1879.99863	-260.00	4700
3.7	0	1879.99856	-190.00	4700
3.7	10	1879.99830	70.00	4700
3.7	20	1879.99837	0.00	4700
3.7	30	1879.99820	170.00	4700
3.7	40	1879.99842	-50.00	4700
3.7	50	1879.99793	440.00	4700

Note: The battery is rated 3.7V dc.



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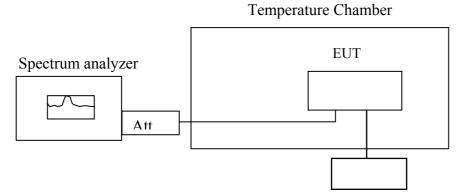
11. FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

11.1 Standard Applicable

According to FCC $\S2.1055(d)(1)(2)$

Frequency Tolerance: 2.5 ppm

11.2 Test Set-up:



Variable DC Power Supply

Note: Measurement setup for testing on Antenna connector

11.3 Measurement Procedure

Set chamber temperature to 25°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specified extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.

11.4 Measurement Equipment Used:

Conducted Emission Test Site								
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.			
TYPE		NUMBER	NUMBER	CAL.				
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2005	03/28/2006			
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2005	06/29/2006			
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2004	11/10/2005			



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Power Sensor	Anritsu	MA2490A	31431	06/28/2005	06/29/2006
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2005	06/29/2006
Temperature Chamber	TERCHY	MHG-120LF	911009	11/11/2004	11/12/2005
Low Loss Cable	HUBER+SUHNE R	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circult	BW-S10W5	N/A	10/07/2004	10/06/2005
Attenuator	Mini-Circult	BW-S6W5	N/A	10/07/2004	10/06/2005
Splitter	Mini-Circult	ZFSC-2-10G	N/A	10/07/2004	10/06/2005
Signal Generator	R&S	SMR40	100210	11/09/2004	11/10/2005
Diode Detector	Agilent	8471E	MY4224	N/A	N/A
AC Power Supply	APW-105N	887592	All Power	N/A	N/A



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11.5 Measurement Result

Reference Frequency: GSM Mid Channel 836.6 MHz @ 25°C							
Limit: +/- 2.5 ppm = 2091 Hz							
Power Supply Environment Frequency Delta (II-)							
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)			
3.70	3.70 25.00		0.00	2091.00			
3.15	25.00	836.59946	340.00	2091.00			
4.26	25.00	836.59973	70.00	2091.00			
2.9	25.00	026 50050	200.00	2001.00			
(End Point)	25.00	836.59950	300.00	2091.00			

Reference Frequency: PCS Mid Channel 1880 MHz @ 25°C								
	Limit: +/- 2.5 ppm = 4700 Hz							
Power Supply Environment Frequency Delta (Hz) Limit (Hz)								
Vdc	Temperature ($^{\circ}$ C)	(MHz)	Limit (Hz)					
3.7	3.7 25 1879		0.00	4700				
3.145	25	1879.99854	-170.00	4700				
4.255	25	1879.99847	-100.00	4700				
2.9	25	1070 000/2	260.00	4700				
(Endpoint)	25	1879.99863	-260.00	4700				

Note: The battery is rated 3.7V dc.



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12. AC POWER LINE CONDUCTED EMISSION TEST

12.1 Standard Applicable

According to §15.207. The emission value for frequency within 150KHz to 30MHz shall not exceed criteria of below chart.

Frequency range	Limits dB(uV)			
MHz	Quasi-peak	Average		
0.15 to 0.50	66 to 56	56 to 46		
0.50 to 5	56	46		
5 to 30	60	50		

Note

12.2 EUT Setup

- 1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.4-2001.
- 2. The EUT was plug-in DC power adaptort and was placed on the center of the back edge on the test table. The peripherals like earphone was placed on the side of the EUT. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
- 3. The Power adaptor was connected with 110Vac/60Hz power source.

12.3 Measurement Procedure

- 1. The EUT was placed on a table which is 0.8m above ground plane.
- 2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 3. Repeat above procedures until all frequency measured were complete.

^{1.} The lower limit shall apply at the transition frequencies

^{2.} The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.



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12.4 Measurement Equipment Used:

Conducted Emission Test Site									
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.				
TYPE		NUMBER	NUMBER	CAL.					
EMC Analyzer	НР	8594EM	3624A00203	09/02/2004	09/03/2005				
EMI Test Receiver	R&S	ESCS30	828985/004	06/09/2005	06/10/2006				
Transient Limiter	HP	11947A	3107A02062	09/02/2005	09/03/2006				
LISN	Rolf-Heine	NNB-2/16Z	99012	12/31/2004	12/30/2005				
LISN	Rolf-Heine	NNB-2/16Z	99013	12/24/2004	12/23/2005				
Coaxial Cables	N/A	No. 3, 4	N/A	12/24/2004	12/23/2005				

12.5 Measurement Result

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.



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AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode : Normal Operating(GSM 850) Test Date May 26, 2005

Fundamental Frequency: N/A Test By Willis

Temperature Pol Line/Neutral : 25°C Humidity : 65% Adaptor Model 3DS09371AGAA

Test Voltage Supplier: :110Vac Leader

FREQ	Q.P.	AVG	Q.P.	AVG	Q.P.	AVG	NOTE
MHz	Raw	Raw	Limit	Limit	Margin	Margin	
	dBuV	dBuV	dBuV	dBuV	dB	dB	
0.33	49.59	43.11	59.45	49.45	-9.86	-6.34	L1
0.37	48.74	43.70	58.50	48.50	-9.76	-4.80	L1
0.41	50.65	46.06	57.65	47.65	-7.00	-1.59	L1
0.60	45.01	36.21	56.00	46.00	-10.99	-9.79	L1
3.72	46.42	43.23	56.00	46.00	-9.58	-2.77	L1
5.87	48.99	42.38	60.00	50.00	-11.01	-7.62	L1
	-		-		-	-	
0.16	54.77	50.32	65.46	55.46	-10.69	-5.14	L2
0.29	48.04		60.52	50.52	-12.48		L2
0.33	47.97	42.19	59.45	49.45	-11.48	-7.26	L2
0.42	52.89	43.76	57.45	47.45	-4.56	-3.69	L2
3.22	46.31	42.28	56.00	46.00	-9.69	-3.72	L2
5.87	49.09	42.87	60.00	50.00	-10.91	-7.13	L2

Remark:

- (1) Measuring frequencies from 0.15 MHz to 30MHz •
- (2) The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Qusia-Peak detector and Average detector.
- (3) "---" denotes the emission level was or more than 2dB below the Average limit, so no re-check anymore.
- (4) The IF bandwidth of SPA between 0.15MHz to 30MHz was 10KHz; The IF bandwidth of Test Receiver between 0.15MHz to 30MHz was 9KHz;
- (5) L1 = Line One (Hot side) / L2 = Line Two (Neutral side)

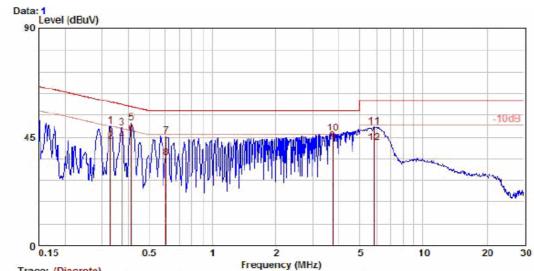


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Conducted Emission Test Plot (3DS 09371AGAA supplier: Leader)



Trace: (Discrete)

Condition :FCC 15.207-COND-QP NNB-2/16Z(99012) LINE Applicant: :Alcatel

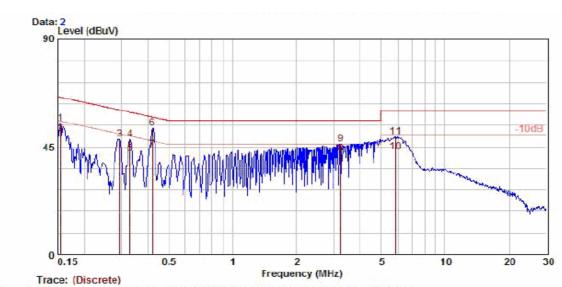
:ER/2005/50012 Project No.:

EUT Description:: GSM 850/1900 mobile phone

EUT Model: : OT-E252a

Test Mode: :Operation GSM850

Temp./Humid. :25/65 Operator: :willis Operator:



Condition :FCC 15.207-COND-QP NNB-2/16Z(99012) NEUTRAL

Applicant: :Alcatel
Project No.: :ER/2005/50012

EUT Description::GSM 850/1900 mobile phone

EUT Model: : OT-E252a

:Operation GSM850 Test Mode:

Temp./Humid. :25/65 Operator: :willis



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AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode : Normal Operating(GSM 1900) Test Date May 26, 2005

Fundamental Frequency: N/A Test By Willis

Temperature Pol Line/Neutral : 25℃ Humidity : 65% Adaptor Model 3DS09371AGAA

Test Voltage :110Vac Supplier: Leader

FREQ	Q.P.	AVG	Q.P.	AVG	Q.P.	AVG	NOTE
MHz	Raw	Raw	Limit	Limit	Margin	Margin	
	dBuV	dBuV	dBuV	dBuV	dB	dB	
0.29	47.73	42.10	60.52	50.52	-12.79	-8.42	L1
0.33	45.93	40.35	59.45	49.45	-13.52	-9.10	L1
0.42	47.56	41.42	57.45	47.45	-9.89	-6.03	L1
2.07	45.29	39.30	56.00	46.00	-10.71	-6.70	L1
3.22	46.47	41.57	56.00	46.00	-9.53	-4.43	L1
5.99	48.95	44.14	60.00	50.00	-11.05	-5.86	L1
	-				-	-	
0.29	48.74	46.14	60.52	50.52	-11.78	-4.38	L2
0.33	50.15	38.68	59.45	49.45	-9.30	-10.77	L2
0.37	48.74	41.64	58.50	48.50	-9.76	-6.86	L2
0.41	51.34	38.58	57.65	47.65	-6.31	-9.07	L2
0.60	45.24	40.12	56.00	46.00	-10.76	-5.88	L2
3.22	45.40	41.40	56.00	46.00	-10.60	-4.60	L2

Remark:

- (1) Measuring frequencies from 0.15 MHz to 30MHz •
- (2) The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Qusia-Peak detector and Average detector.
- (3) "---" denotes the emission level was or more than 2dB below the Average limit, so no re-check anymore.
- (4) The IF bandwidth of SPA between 0.15MHz to 30MHz was 10KHz; The IF bandwidth of Test Receiver between 0.15MHz to 30MHz was 9KHz;
- (5) L1 = Line One (Hot side) / L2 = Line Two (Neutral side)

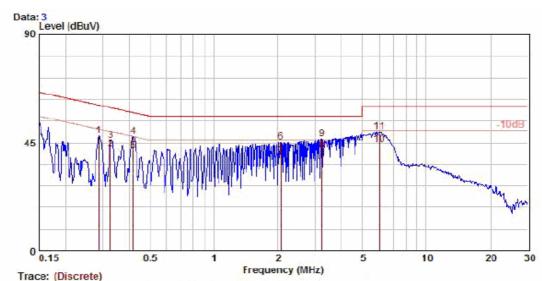


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Conducted Emission Test Plot (3DS09371AGAA supplier: Leader)



Condition :FCC 15.207-COND-QP NNB-2/16Z(99012) LINE

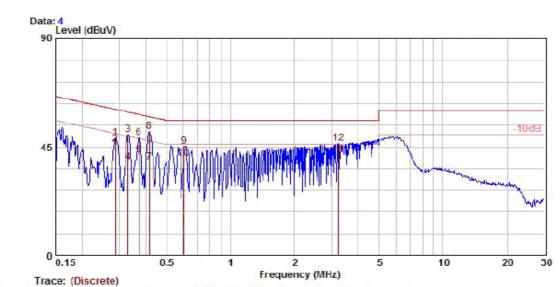
Applicant: :Alcatel
Project No.: :ER/2005/50012

EUT Description:: GSM 850/1900 mobile phone

EUT Model: : OT-E252a

Test Mode: :Operation GSM1900

Temp./Humid. :25/65 Operator: :willis



Condition :FCC 15.207-COND-QP NNB-2/16Z(99012) NEUTRAL

Applicant: :Alcatel
Project No.: :ER/2005/50012

EUT Description:: GSM 850/1900 mobile phone

EUT Model: : OT-E252a

Test Mode: :Operation GSM1900

Temp./Humid. :25/65 Operator: :willis



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AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode : Normal Operating Test Date Jul 20, 2005

Fundamental Frequency: N/A Test By Henk

Temperature Pol Line/Neutral : 25℃ Humidity : 65% Adaptor Model 3DS09371AGAA

Test Voltage :110Vac Supplier: Astec

FREQ	Q.P.	AVG	Q.P.	AVG	Q.P.	AVG	NOTE
MHz	Raw	Raw	Limit	Limit	Margin	Margin	
	dBuV	dBuV	dBuV	dBuV	dB	dB	
0.33	43.70		59.46	49.46	-15.76		L1
0.41	46.00	42.00	57.61	47.61	-11.61	-5.61	L1
0.62	39.10		56.00	46.00	-16.90		L1
2.52	39.00		56.00	46.00	-17.00		L1
3.01	41.20		56.00	46.00	-14.80		L1
6.20	42.20		60.00	50.00	-17.80		L1
0.29	40.70		60.62	50.62	-19.92		L2
2.30	40.10		56.00	46.00	-15.90		L2
2.95	40.60		56.00	46.00	-15.40		L2
3.49	41.00		56.00	46.00	-15.00		L2
4.93	41.90		56.00	46.00	-14.10		L2
5.99	43.80		60.00	50.00	-16.20		L2

Remark:

- (1) Measuring frequencies from 0.15 MHz to 30MHz •
- (2) The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Qusia-Peak detector and Average detector.
- (3) "---" denotes the emission level was or more than 2dB below the Average limit, so no re-check anymore.
- (4) The IF bandwidth of SPA between 0.15MHz to 30MHz was 10KHz; The IF bandwidth of Test Receiver between 0.15MHz to 30MHz was 9KHz;
- (5) L1 = Line One (Hot side) / L2 = Line Two (Neutral side)

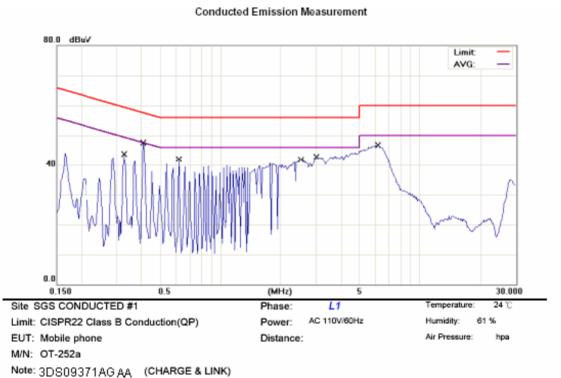


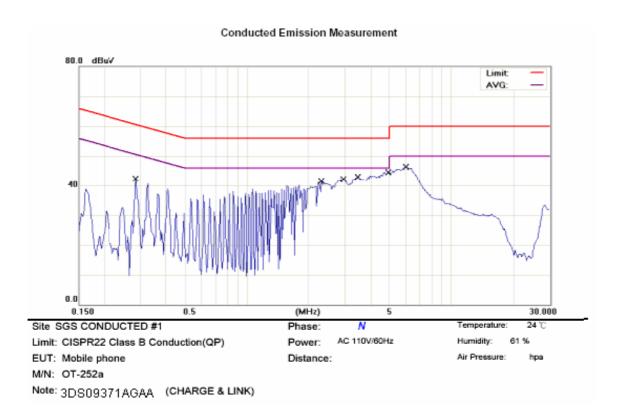
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Conducted Emission Test Plot (3DS09371AGAA supplier: Astec)







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AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode : Normal Operating Test Date Jul 20, 2005

Fundamental Frequency: N/A Test By Henk

Temperature Pol Line/Neutral : 25℃ Humidity : 65% Adaptor Model 3DS09371AAAA

Test Voltage :230Vac Supplier: Astec

FREQ	Q.P.	AVG	Q.P.	AVG	Q.P.	AVG	NOTE
MHz	Raw	Raw	Limit	Limit	Margin	Margin	
	dBuV	dBuV	dBuV	dBuV	dB	dB	
0.24	49.20		62.10	52.10	-12.90		L1
0.29	48.20		60.62	50.62	-12.42		L1
0.44	48.90	33.70	57.15	47.15	-8.25	-13.45	L1
0.58	48.90	32.30	56.00	46.00	-7.10	-13.70	L1
0.73	49.30	31.60	56.00	46.00	-6.70	-14.40	L1
0.99	53.20	41.20	56.00	46.00	-2.80	-4.80	L1
0.38	49.60	32.10	58.18	48.18	-8.58	-16.08	L2
0.45	49.80	37.80	56.93	46.93	-7.13	-9.13	L2
0.52	42.30		56.00	46.00	-13.70		L2
0.60	35.60		56.00	46.00	-20.40		L2
0.74	48.80	31.20	56.00	46.00	-7.20	-14.80	L2
0.94	54.20	37.20	56.00	46.00	-1.80	-8.80	L2

Remark:

- (1) Measuring frequencies from 0.15 MHz to 30MHz •
- (2) The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Qusia-Peak detector and Average detector.
- (3) "---" denotes the emission level was or more than 2dB below the Average limit, so no re-check anymore.
- (4) The IF bandwidth of SPA between 0.15MHz to 30MHz was 10KHz; The IF bandwidth of Test Receiver between 0.15MHz to 30MHz was 9KHz;
- (5) L1 = Line One (Hot side) / L2 = Line Two (Neutral side)

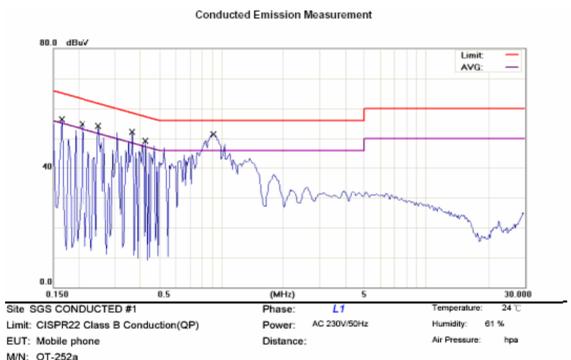


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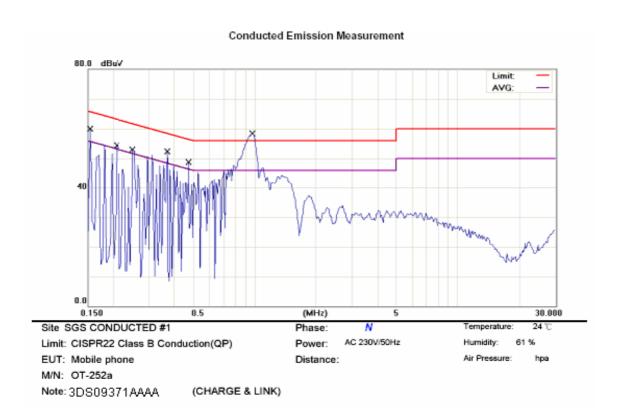
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Conducted Emission Test Plot (3DS09371AAAA Supplier: Astec)



M/N: OT-252a

Note: 3DS09371AAAA (CHARGE & LINK)





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AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode : Normal Operating Test Date Jul 20, 2005

Fundamental Frequency: N/A Test By Henk

Temperature Pol Line/Neutral : 25℃ Humidity : 65% Adaptor Model 3DS09371AAAA

Test Voltage :230Vac Supplier: Leader

FREQ	Q.P.	AVG	Q.P.	AVG	Q.P.	AVG	NOTE
MHz	Raw	Raw	Limit	Limit	Margin	Margin	
	dBuV	dBuV	dBuV	dBuV	dB	dB	
0.16	46.80	40.15	65.58	55.58	-18.78	-15.43	L1
0.20	41.70	45.70	63.58	53.58	-21.88	-7.88	L1
0.37	45.50		58.44	48.44	-12.94		L1
0.62	41.30		56.00	46.00	-14.70		L1
2.94	44.40	42.70	56.00	46.00	-11.60	-3.30	L1
4.77	44.10	40.30	56.00	46.00	-11.90	-5.70	L1
0.15	48.10		65.79	55.79	-17.69		L2
0.18	46.30	-	64.43	54.43	-18.13		L2
0.36	43.60		58.62	48.62	-15.02		L2
2.79	43.70		56.00	46.00	-12.30		L2
3.74	42.90		56.00	46.00	-13.10		L2
4.15	43.70		56.00	46.00	-12.30		L2

Remark:

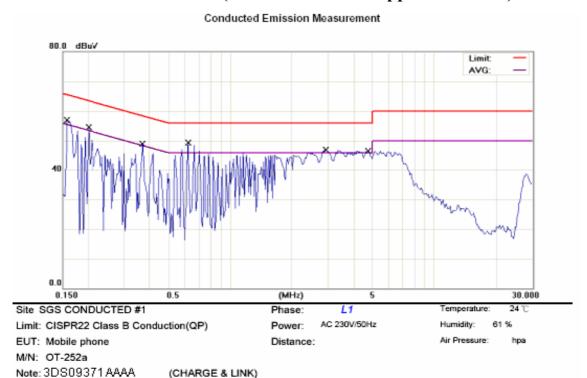
- (1) Measuring frequencies from 0.15 MHz to 30MHz •
- (2) The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Qusia-Peak detector and Average detector.
- (3) "---" denotes the emission level was or more than 2dB below the Average limit, so no re-check anymore.
- (4) The IF bandwidth of SPA between 0.15MHz to 30MHz was 10KHz; The IF bandwidth of Test Receiver between 0.15MHz to 30MHz was 9KHz;
- (5) L1 = Line One (Hot side) / L2 = Line Two (Neutral side)



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Conducted Emission Test Plot (3DS09371AAAA Supplier : Leader)



Conducted Emission Measurement 80.0 dBuV Limit AVG: 0.150 (MHz) 30.000 Site SGS CONDUCTED #1 Phase: Limit: CISPR22 Class B Conduction(QP) Power: AC 230V/50Hz Humidity: EUT: Mobile phone Air Pressure: Distance: M/N: OT-252a (CHARGE & LINK) Note: 3DS09371 AAAA



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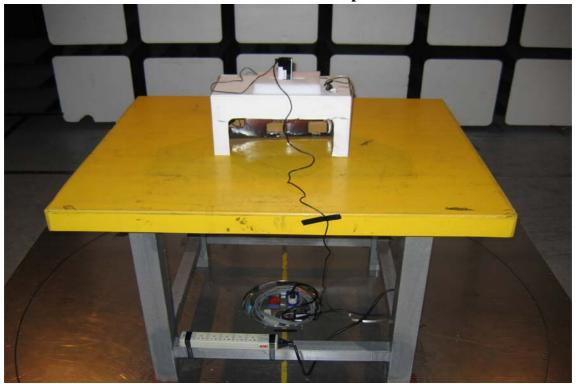
APPENDIX 1 PHOTOGRPHS OF SET UP



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Radiated Emission Set up Photos





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Conducted Emission Set Up Photos





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APPENDIX 2 PHOTOGRPHS OF EUT



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All of EUT



Front View of EUT





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Back View of EUT



Left View of EUT





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Top View of EUT



Bottom View of EUT





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Battery



Adaptor-3DS09371AGAA Supplier: Leader Electronics





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Adaptor-3DS09371AGAA Supplier: Astec



Adaptor-3DS09371AAAA Supplier: Astec





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Adaptor-3DS09371AAAA Supplier: Leader Electronics



Adaptor-3DS07848AAAA Supplier : Primax





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Open View of EUT



Internal of EUT --- 1





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Internal of EUT --- 2

