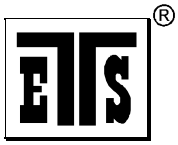

ELECTRONIC TECHNOLOGY SYSTEMS
DR. GENZ GMBH

TEST - REPORT

FCC RULES PARTS 22 and 24

FCC ID: QQXEB-G60U

Test report no.:

G6D203010016-T-47

FCC

ELECTRONIC TECHNOLOGY SYSTEMS
DR. GENZ GMBH
STORKOWER STRASSE 38C, D-15526 REICHENWALDE B. BERLIN
PHONE +49-33631-888 00
FAX +49-33631-888 66

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1 General Information

1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.
The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.
Furthermore, there is no guarantee that a test sample which has passed all the relevant tests conforms to a specification.
Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.
The existence of the tests nevertheless provides the confidence that the test sample posseses the qualities as maintained and that is performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.5.
The test report may only be reproduced or published in full.
Reproduction or publication of extractes from the report requires the prior written approval of the ELECTRONIC TECHNOLOGY SYSTEMS DR. GENZ GMBH.

Tester:

14.03.2003		F. Schulz	
Date	ETS-Lab.	Name	Signature

Technical responsibility for area of testing:

14.03.2003		Dr. Genz	
Date	ETS	Name	Signature

1.2 Testing laboratory

1.2.1 Location

ELECTRONIC TECHNOLOGY SYSTEM DR. GENZ GMBH (ETS)
Storkower Straße 38c
D-15526 Reichenwalde b. Berlin
Germany
Telefon : +49 33631 888 00
Telefax : +49 33631 888 66

1.2.2 Details of accreditation status

ACCREDITED TESTING LABORATORY
DAR-REGISTRATION NUMBER: TTI-P-G 126/96

ACCREDITED COMPETENT BODY
DAR-REGISTRATION NUMBER: BPT-ZE-026/96

FCC FILED TEST LABORATORY REG. NO. 96970

BLUETOOTH QUALIFICATION TEST FACILITY (BQTF)
ACCREDITED BY: BLUETOOTH QUALIFICATION REVIEW BOARD (BQRF)

INDUSTRY CANADA FILED TEST LABORATORY REG. NO. IC 3470

A2LA ACCREDITED Certificate Number: 1983-01

1.3 Details of approval holder

Name	: Compal Communications Inc.
Street	: 7F, 319, Sec. 4, Pa-Teh Road
Town	: Taipei (105)
Country	: Taiwan, R.O.C.
Telephone	: +886-2-2528-8198
Fax	: +886-2-2748-7547
Contact	: Ms. Cinthy Kuo
Telephone	: +886-2-2528-8198

1.4 Application details

Date of receipt of application : 10.02.2003
Date of receipt of test item : 10.02.2003
Date of test : 10.02.2003 – 07.03.2003

1.5 Test item

Description of test item : GPRS Dual-Band (GSM850/PCS1900) Handset Phase II+

Type identification : EB-G60U

Serial number : Test model without serial number.

Photos : See annex

Technical data

Frequency range Tx – GSM 850 : 824.2 – 848.80 MHz
Frequency range Tx – PCS : 1850.2 – 1909.8 MHz
Frequency range Rx : 869.2 – 893.8 MHz
Frequency range Rx : 1930.2 – 1989.8 MHz
Antenna transmitter : integral (internal antenna)
Antenna Gain : 1 dBi
Power supply : 3,8 V DC
Operating mode : duplex
Type of modulation : GMSK (GSM modulation)
Emission : GXW

Manufacturer:
(if applicable)

Name :
Street :
Town :
Country :

1.6 Test standards

Technical standard : FCC Parts 22, 24, 2, 15

Additional information : Because of using the GSM 850 as an alternative technology in 850 MHz band, not all test cases of FCC Part 22 are required.

2 Technical test

2.1 Summary of test results

No deviations from the technical specification(s) were ascertained in the course of the tests performed. ☒

or

The deviations as specified in 2.5 were ascertained in the course of the tests performed. ☐

2.2 Test environment

Temperature : 23°C

Relative humidity content : 20 ... 75 %

Air pressure : 86 ... 103 kPa

2.3 Test equipment utilized

No.	Measurement device:	Type:	Manufacturer:
ETS 0001	Test receiver	ESHS 10	Rohde&Schwarz
ETS 0002	Test receiver	ESVP	Rohde&Schwarz
ETS 0003	Test receiver	ESVS 10	Rohde&Schwarz
ETS 0004	Spektrum- and Network-Analyzer	FSMS 26	Rohde&Schwarz
ETS 0005	Test receiver	SMV 11	MEB
ETS 0006	Test receiver system	SME 12	MEB
ETS 0007	Spectrum analyzer	PSA-65A	Avcom
ETS 0008	Antenna	Loop antenna	Siemens
ETS 0009	Antenna	Loop antenna	MEB
ETS 0010	Antenna	Loop antenna	MEB
ETS 0011	Antenna	van Veen/ Frame	ETS
ETS 0012	Antenna	HK 116	Rohde&Schwarz
ETS 0013	Antenna	HL 223	Rohde&Schwarz
ETS 0014	Antenna	HL 025	Rohde&Schwarz
ETS 0015	Antenna	HL 025	Rohde&Schwarz
ETS 0016	Antenna	VHAP	Schwarzbeck
ETS 0017	Antenna	VHAP	Schwarzbeck
ETS 0018	Horn antenna	BBHA 9120 D	Schwarzbeck
ETS 0019	Horn antenna	BBHA 9120D	Schwarzbeck
ETS 0020	Antenna	DP 21	MEB
ETS 0021	Antenna	DP 3	MEB
ETS 0022	Antenna	SAS-200/ 521	A.H. Systeme / USA
ETS 0023	Antenna	DP 1	MEB
ETS 0024	Antenna mast	AF 2	MEB
ETS 0025	Antenna mast	AF 2	MEB
ETS 0026	Tripod		Heinrich Deisel
ETS 0027	Tripod		Heinrich Deisel
ETS 0028	Tripod	STA 2	C. Lorenz AG
ETS 0029	Tripod		Berlebach
ETS 0030	Turn table	TT 1	ETS
ETS 0031	Turn table	DS 412	Heinrich Deisel
ETS 0032	Controller	HD 050	Heinrich Deisel
ETS 0033	RF generator	SMG	Rohde&Schwarz
ETS 0034	RF generator/ Amplifier	SMLR	Rohde&Schwarz
ETS 0035	RF generator/ Amplifier	SMLM	Rohde&Schwarz
ETS 0036	RF amplifier	10W 1000AM2	Amplifier Research
ETS 0037	RF amplifier	50W 1000	Amplifier Research
ETS 0038	RF amplifier	150L	Amplifier Research
ETS 0039	Absorbing clamp	MDS 21	Rohde&Schwarz
ETS 0040	Artifical mains	ESH3-Z5	Rohde&Schwarz
ETS 0041	Artifical mains	ESH3-Z4	Rohde&Schwarz
ETS 0042	Artifical mains	ESH3-Z6	Rohde&Schwarz
ETS 0043	Artifical mains	NNB 11	MEB
ETS 0044	Artifical mains	NNB 111	MEB
ETS 0045	Stripe line	IEC 801-3	ETS
ETS 0046	Power supply	LTS 006	RFT

No.	Measurement device:	Type:	Manufacturer:
ETS 0047	Power supply	TG 20/ 1	Statron
ETS 0048	Power supply	TG 20/ 1	Statron
ETS 0049	Power supply	T 102	TPW
ETS 0050	Power supply	T 101b	TPW
ETS 0051	Oscilloscope	TDS 640A	Tektronic
ETS 0052	Audio analyzer	UPA 4	Rohde&Schwarz
ETS 0053	ECAT Controlcentre		Keytek/ EMV
ETS 0054	EFT simulator		Keytek/ EMV
ETS 0055	Modul network coupler		Keytek/ EMV
ETS 0056	Blank plug-in		Keytek/ EMV
ETS 0057	Module SURGE with DC coupler		Keytek/ EMV
ETS 0058	Capacitive coupling clamp		Keytek/ EMV
ETS 0059	Kikusui amplfier	PCR 2000L	Keytek/ EMV
ETS 0060	Xitron power analyzer		Keytek/ EMV
ETS 0061	Power/ Arb (Harm., Ramp)		Keytek/ EMV
ETS 0062	Reference impedance		Keytek/ EMV
ETS 0063	Blank plug-in		Keytek/ EMV
ETS 0064	Filter system IEC 1000-4-6		Keytek/ EMV
ETS 0065	ESD-generator minizap		Keytek/ EMV
ETS 0066	EM Injection Clamp		FCC/ EMV
ETS 0067	Calibration Fixture	IEC 801-2031 CF	FCC/ EMV
ETS 0068	Filter system IEC 1000-4-6	CDN	FCC/ EMV
ETS 0069	EM Radiation Monitor	EMR-20	Wandel&Goltermann
ETS 0070	PC Transfer set EMR-20	EMR-20	Wandel&Goltermann
ETS 0071	Videocamera system	KMB012	Kocom
ETS 0072	Interphone system	JS-1400	Jiuh Sheng
ETS 0073	Audio noise meter	GSM 2	MKD/ RFT
ETS 0074	RF milivoltmeter	QRV 2	MKD/ RFT
ETS 0075	NF generator	GF 22	Präcitronic
ETS 0076	Feeding bridge A	SBA 1000	ESP
ETS 0077	Audio/ Video Filter	AV 55020	ETS
ETS 0078	LCR meter	SR 720	SRS
ETS 0079	Functional generator	MX-2020	Maxcom
ETS 0080	EMI Software	ES-K1	Rohde&Schwarz
ETS 0081	EMI Software	ES-K10	Rohde&Schwarz
ETS 0082	PC Novell network system	Novell	Esotronic
ETS 0083	Apple computer sstem	Performa 630	Macintosh
ETS 0084	Processcontroler	PSA 15	Rohde&Schwarz
ETS 0085	Shielded room	SR 1	Frankonia
ETS 0086	Anechoic chamber	AC 1	Frankonia
ETS 0087	Climatic cell	HC 4033	Heraeus
ETS 0088	Colour TV pattern generator	PM 5518-TX VPS	Philips
ETS 0089	Radiocommunication tester	CMS 54	Rohde&Schwarz
ETS 0090	DECT type approval CTR06	TS 8930	Rohde&Schwarz
ETS 0091	RF signal generator	SME 03	Rohde&Schwarz
ETS 0092	DM-Coder	SME-B11	Rohde&Schwarz
ETS 0093	Pulse Modulator	SM-B8	Rohde&Schwarz
ETS 0094	Rearpanel connectors	SME-B19	Rohde&Schwarz
ETS 0095	DECT system controller	PSMD	Rohde&Schwarz

No.	Measurement device:	Type:	Manufacturer:
ETS 0096	DECT Signalling unit	PSMD-B11	Rohde&Schwarz
ETS 0097	Rack, 19", 36 HU	TS 89RA	Rohde&Schwarz
ETS 0098	System engineering and software	CS 893BE	Rohde&Schwarz
ETS 0099	Extension unit for basic version	TS 8930B	Rohde&Schwarz
ETS 0100	RF signal generator	SME-06	Rohde&Schwarz
ETS 0101	DM-Coder	SME-B11	Rohde&Schwarz
ETS 0102	Pulse modulator	SM-B8	Rohde&Schwarz
ETS 0103	Pulse generator	SM-B4	Rohde&Schwarz
ETS 0104	Rearpanel connectors	SME-B19	Rohde&Schwarz
ETS 0105	High power synthesizer/ sweeper	SMP 22	Rohde&Schwarz
ETS 0106	Frequency extension	SMP-B11	Rohde&Schwarz
ETS 0107	RF attenuator for SMP 22	SMP-B15	Rohde&Schwarz
ETS 0108	DECT protocol tester TBR 22	TS 1220	Rohde&Schwarz
ETS 0109	Process controller	PSM 2	Rohde&Schwarz
ETS 0110	Real time signalling unit	PSMD-B2	Rohde&Schwarz
ETS 0111	PCM Realtime audio interface for	PSMD-B3	Rohde&Schwarz
ETS 0112	Synthesizer Module	PSMD-B4	Rohde&Schwarz
ETS 0113	Keyboard	PSA-Z2	Rohde&Schwarz
ETS 0114	RF step attenuator	RSG	Rohde&Schwarz
ETS 0115	Glide path		ETS
ETS 0116	RF Millivoltmeter	URV 55	Rohde&Schwarz
ETS 0117	Insertion unit	URV-Z2	Rohde&Schwarz
ETS 0118	Mixer	MFC 1000	Avcom
ETS 0119	Mixer	MFC 2000	Avcom
ETS 0120	RF step attenuator	TRI-50-20	INCO
ETS 0121	Oscilloscope	EO 147A	Serute
ETS 0122	Oscilloscope	5201	Dagatron
ETS 0123	RF step attenuator	RBU	Rohde&Schwarz
ETS 0124	Tripod	STA 2	Rohde&Schwarz
ETS 0125	Small components		
ETS 0126	Uninterruptable power supply	UPS - 1500	Sendon
ETS 0127	Uninterruptable power supply	UPS - 1000 LC	Sendon
ETS 0128	Uninterruptable power supply	UPS - 1000	Sendon
ETS 0129	Uninterruptable power supply	UPS - 500	Sendon
ETS 0130	Uninterruptable power supply	Power saver	Sendon
ETS 0131	Telephone connection box		Systel
ETS 0132	Frequency doubler	TR-0616	EMG
ETS 0133	Probe body	P6015	Tektronix
ETS 0134	Mains filter	MSF	Erika Fiedler
ETS 0135	Measureing switching point	AK 11	RFT
ETS 0136	Attenuator	33-6-34	Weinschel
ETS 0137	Multimeter	YX-360TRA	Mastech
ETS 0138	Multimeter	DT-9410	Diditec
ETS 0139	Multimeter	ST-9202	Standard
ETS 0140	High voltage generator	IP 6Wa	TPW
ETS 0141	Sliding bridge	J 573	RFT
ETS 0142	Impedanz converter	TK 11	RFT
ETS 0143	Impedanz converter	TK 12	RFT
ETS 0144			

No.	Measurement device:	Type:	Manufacturer:
ETS 0145			
ETS 0146	Probe	TK 103	MEB
ETS 0147	Active probe	ESH2-Z2	Rohde&Schwarz
ETS 0148	Test TV	21PT4301/00	Philips
ETS 0149	Power divider	ZAPD-21	MCL
ETS 0150	Switcher	HR07-720	Wisi
ETS 0151	Interference pulse generator	NSG 500C	Schaffner
ETS 0152	Simulator for Load-Dump-Impulse	NSG 506C (I)	Schaffner
ETS 0153	Simulator for Load-Dump-Impulse	NSG 506C (II)	Schaffner
ETS 0154	Signalgenerator	SMG	Rohde&Schwarz
ETS 0155	Signalgenerator	SMG	Rohde&Schwarz
ETS 0156	Adjacent channel power meter	NKS	Rohde&Schwarz
ETS 0157	TV and Sat-Signalgenerator	VTG 700	Grundig
ETS 0158	TV and Sat Signalgenerator	VTG 700	Grundig
ETS 0159	Programmable power supply	TOE 8815	Toellner
ETS 0160	Protective wire and isolation tester	PI 6001 D	SPS electronic
ETS 0161	Filter system / consumer electronic		Fiedler
ETS 0162	Acoustic chamber	403-A	IAC
ETS 0163	Test head	BK 4602	Brüel & Kjær
ETS 0164	Simulator ear	BK 4185	Brüel & Kjær
ETS 0165	Simulator mouth	BK 4227	Brüel & Kjær
ETS 0166	Acoustic calibrator	BK 4231	Brüel & Kjær
ETS 0167	Communication Analysis System	CAS TE I	HEAD acoustics
ETS 0168	Acoustical test for DECT	CTR 10	HEAD acoustics
ETS 0169	Measurement - Frontend (analog)	MFE III	HEAD acoustics
ETS 0170	Measurement - Frontend (digital)	MFE IV	HEAD acoustics
ETS 0171	Electronic test cradle	TEH	HEAD acoustics
ETS 0172	Noise generator	HNG III.1	HEAD acoustics
ETS 0173	Speaker	Canton S Pluss	HEAD acoustics
ETS 0174	Measurement - Frontend line interface	MFE V	HEAD acoustics
ETS 0175	Software Line interface (analog)	COPTZV5	HEAD acoustics
ETS 0176	Acoustic volt meter	COP 4	HEAD acoustics
ETS 0177	Feeding bridge B	SBA 1000	ESP
ETS 0178	Open area test side	30m	ETS
ETS 0179	Open area test side	30m	ETS
ETS 0180	Artifical mains	NNB01/RFZ	ETS
ETS 0181	Test pin for protective wire	PE 156-i	SPS electronic
ETS 0182	Power supply	MX-9300	Maxcom
ETS 0183	Frequency counter	MX-9300	Maxcom
ETS 0184	Function generator	MX-9300	Maxcom
ETS 0185	Digital multimeter	MX-9300	Maxcom
ETS 0186	Power supply	DF 1730	WJG
ETS 0187	Power suppy		TPW/RFT
ETS 0188	High voltage generator		
ETS 0189	Spectrum Analyzer	FSEB	Rohde&Schwarz
ETS 0190	Function generator	MX 2020	Maxcom
ETS 0191	Sweep function generator	7202	Dagatron
ETS 0192	Audio generator	7101	Dagatron
ETS 0193	Vibration table	N1-201-M	Sandox

No.	Measurement device:	Type:	Manufacturer:
ETS 0194	Digital multimeter	PMM 208	Dagatron
ETS 0195	Thermo hygro recorder		Amarell
ETS 0196	Digital thermometer	AK-688	KD
ETS 0197	Digital thermometer		Prima
ETS 0198	Digital thermometer	ad 170th	ama-digit
ETS 0199	Digital thermometer	ad 31th	ama-digit
ETS 0200	Digital thermometer / hygro meter	ad 90h	ama-digit
ETS 0201	Digital thermometer / hygro meter	37950-10	Cole Parmer
ETS 0202	Digital thermometer	ad 15th	ama-digit
ETS 0203	Digital thermometer	Type K	Amarell
ETS 0204	Digital thermometer	ad 20th	ama-digit
ETS 0205	High voltage test generator	HA 3300 D	SPS electronic
ETS 0206	High voltage test accessoires	HVGZ 312	SPS electronic
ETS 0207	Socket-Outlet torque balance	F 37.13	PTL
ETS 0208	Unjointed Finger probe	P 10.05	PTL
ETS 0209	Flixible Finger probe	P 10.01	PTL
ETS 0210	Spring operated impact hammer	P 22.50	PTL
ETS 0211	Metallic ball	F 53.32	PTL
ETS 0212	Hazardous live probe	P 10.06	PTL
ETS 0213	Hazardous live probe	P 10.11	PTL
ETS 0214	Ball pressure test apparatus	T 10.02	PTL
ETS 0215	Glow Wire tester	T 03.14	PTL
ETS 0216	Force indicator 50N	P 10.31	PTL
ETS 0217	Millivolt meter	URV 55	Rohde&Schwarz
ETS 0218	RF probe	URV5-Z7	Rohde&Schwarz
ETS 0219	Power sensor	NRV-Z2	Rohde&Schwarz
ETS 0220	Insertion unit	URV5-Z4	Rohde&Schwarz
ETS 0221	ISDN-S0-Analyzer	K1403	Siemens
ETS 0222	ISDN Protocol Analyser	TE965	Tekelec Teleco.
ETS 0223	GSM/ PCN/ PCS-Simul.	TS8915B	Rohde & Schwarz
ETS 0224	GSM System Simulator	FTA	Rohde & Schwarz
ETS 0225	SIM Simulator		Orga
ETS 0226	SIM Editor		Orga
ETS 0227	Vibration table	TIRA vib	GenRad
ETS 0228	Climatic chamber	VT 4010	Vötsch
ETS 0229	Radio Commun. Tester	CMT 54	Rohde & Schwarz
ETS 0230	Radio Commun. Tester	CMD 65	Rohde & Schwarz
ETS 0231	Testreceiver	ESVS 30	Rohde & Schwarz
ETS 0232	Radiation test source	VSO 1	MEB
ETS 0233	Direction coupler	RK 100	MEB
ETS 0234	Power meter	NRVD	Rohde & Schwarz
ETS 0235	RF-network-analyser	8752 C	Hewlett Packard
ETS 0236	RF-amplifier	100A100	Amplifier Research
ETS 0237	RF-amplifier	100W1000M1	Amplifier Research
ETS 0238	Field strong meter	FM 2000	Amplifier Research
ETS 0239	Isotr. field probe 40 GHz	FP 2080 Kit	Amplifier Research
ETS 0240	Isotr. field probe 1 GHz	FP 2000 Kit	Amplifier Research
ETS 0241	Pulse Generator	4050	PicoSecond PL
ETS 0242	Harmonics analyser	F 41B	Fluke

No.	Measurement device:	Type:	Manufacturer:
ETS 0243	AC-clamp 1000 A	80i 1000s	Fluke
ETS 0244	Burst generator	EFT 200	EM-Test
ETS 0245	Load dump generator	LD 200	EM-Test
ETS 0246	Voltage drop simulator	VDS 200	EM-Test
ETS 0247	Microsecond generator	MPG 200	EM-Test
ETS 0248	Switch unit	AN 200	EM-Test
ETS 0249	Coupling network	CNA 200	EM-Test
ETS 0250	Coupling clamp	ACC	EM-Test
ETS 0252	System controller	PSM 12	Rohde & Schwarz
ETS 0253	Spectrum analyser	FSIQ	Rohde & Schwarz
ETS 0254	RF generator	SMIQ 03	Rohde & Schwarz
ETS 0255	RF generator	SMIQ 03	Rohde & Schwarz
ETS 0256	RF generator	SMP 03	Rohde & Schwarz
ETS 0257	Step attenuator	RSP	Rohde & Schwarz
ETS 0258	Rubidium standard	RSTU	DATUM GmbH
ETS 0259	Power meter	NRVD	Rohde & Schwarz
ETS 0260	Power sensor	NRVD-Z1	Rohde & Schwarz
ETS 0261	Power sensor	NRVD-Z1	Rohde & Schwarz
ETS 0262	Switching unit	SSCU	Rohde & Schwarz
ETS 0263	Signaling unit		Wird
ETS 0264	Spectrum analyser	F 1048	HAMEG
ETS 0265	Loop antenna	HFRA 9150	Schwarzbeck
ETS 0267	RF signal generator	SMT 03	Rohde & Schwarz
ETS 0268	RF signal generator	SMP 02	Rohde & Schwarz
ETS 0270	RF signal generator	SMP 04	Rohde & Schwarz
ETS 0271	Test receiver	ESI 40	Rohde & Schwarz
ETS 0272	RF signal generator	SME 03	Rohde & Schwarz
ETS 0273	RF signal generator	SME 03	Rohde & Schwarz
ETS 0274	RF signal generator	SMY 01	Rohde & Schwarz
ETS 0275	Power sensor	NRV-Z51	Rohde & Schwarz
ETS 0276	Audio analyser	UPL	Rohde & Schwarz
ETS 0277	Power sensor	NRV-Z1	Rohde & Schwarz
ETS 0278	Power sensor	NRV-Z31	Rohde & Schwarz
ETS 0279	Step attenuator	RSP	Rohde & Schwarz
ETS 0280	Power meter	NRVD	Rohde & Schwarz
ETS 0281	Spectrum analyser	FSM	Rohde & Schwarz
ETS 0282	RF bridge	86207 A	Hewlett Packard
ETS 0283	RF bridge	86205 A	Hewlett Packard
ETS 0284	Field probe	11940 A	Hewlett Packard
ETS 0285	Field probe	11941 A	Hewlett Packard
ETS 0286	Limiter	11867 A	Hewlett Packard
ETS 0287	Test receiver	ESHS 10	Rohde & Schwarz
ETS 0288	Artifical mains	ESH2-Z5	Rohde & Schwarz
ETS 0289	Audio generator	TAG 101	Troneer
ETS 0290	Audio generator	TAG 101	Troneer
ETS 0291	Loop antenna	HFH2-Z2	Rohde & Schwarz
ETS 0292	RF generator	SMHU	Rohde & Schwarz
ETS 0293	Artifical mains	NNBM 8125	Schwarzbeck
ETS 0294	Biconical antenna	HK 116	Rohde & Schwarz

No.	Measurement device:	Type:	Manufacturer:
ETS 0295	LPD antenna	HL 223	Rohde & Schwarz
ETS 0296	Oscilloscope	TDS 520 A	Tektronix
ETS 0297	Power pulse generator	IGUF 2910	Schwarzbeck
ETS 0298	ICO tester	TS 1232	Rohde & Schwarz
ETS 0299	DECT protocol tester	TS 1220	Rohde & Schwarz
ETS 0300	RF amplifier	75 A 250	Amplifier Research
ETS 0301	Relay switch unit	RSU	Rohde & Schwarz
ETS 0302	Data line CDN	CM-I/O CD	Kevtek
ETS 0303	Telecom line CDN	CM-TEL CD	Kevtek
ETS 0304	Test receiver	ESHS 10	Rohde & Schwarz
ETS 0305	Test receiver	ESVS 10	Rohde & Schwarz
ETS 0306	Function generator	HP 33120A	Hewlett Packard
ETS 0307	Commu. Sign. Analyzer	CSA 803 A	Tektronix
ETS 0308	Spectrum analyzer	R 3361A	Advantest
ETS 0309	Anechoic chamber	AC 2	Frankonia
ETS 0310	Anechoic chamber	AC 3	Frankonia
ETS 0311	Anechoic chamber	AC 4	Frankonia
ETS 0312	Climatic chamber	VC 0033	Vötsch
ETS 0313	Power sensor	NRV-Z51	Rohde & Schwarz
ETS 0314	LPD antenna	HL 223	Rohde & Schwarz
ETS 0315	Biconical antenna	HK 116	Rohde & Schwarz
ETS 0316	Switcher	Hr 07-720	WISI
ETS 0317	Switcher	Hr 07-720	WISI
ETS 0318	Dial pulse/ DTMF tester	210	HE
ETS 0319	Opto link	GPIB 140	NI
ETS 0320	Opto link	GPIB 140	NI
ETS 0321	RF Millivoltmeter	URV 55	Rohde & Schwarz
ETS 0322	Insertion unit	URV5-Z4	Rohde & Schwarz
ETS 0323	DECT portable part	Gigaset 1000	SIEMENS
ETS 0324	DECT fix part	Gigaset 1000	SIEMENS
ETS 0325	DECT portable part		Philipps
ETS 0326	DECT fix part		Philipps
ETS 0327	Blue Unit	V 2.0	Nokia
ETS 0328	BT Protocol tester	PTW 60	Rohde & Schwarz
ETS 0330	Spectrum analyser	FSM	Rohde & Schwarz
ETS 0333	turn table	DE 350	Heinrich Deisel
ETS 0334	Controller	HD 100	Heinrich Deisel
ETS 0335	BT Development kit	CASIRA	CSR
ETS 0336	LPD Antenna	HL 223	Rohde & Schwarz
ETS 0337	Professional Power Amplifier	SE-1200	Wharfedale Pro
ETS 0338	Coupling network	KN002	ETS
ETS 0339	Isolating Transformer	KN003	ETS
ETS 0340	Bluetooth test set	TS8960	Rohde & Schwarz
ETS 0341	EN 61000-4-8 Test System	F-1000-4-8/9/10-L	Fisher Custom

2.4 Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-2000 using a 50µH LISN (if necessary). Both lines were observed. The bandwidth of the spectrum analyzer was 10 kHz with an appropriate sweep speed.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-2000 using a spectrum analyzer. The bandwidth of the spectrum analyzer was 100 kHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was the 100 kHz and the video bandwidth was 300 kHz.

FORMULA OF CONVERSION FACTORS for Field strength: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBµV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB.

Example:

Freq (MHz)	METER READING + ACF + CABLE LOSS (to the receiver) = FS
33	20 dBµV + 10.36 dB + 6 dB = 36.36 dBµV/m @3m

ANSI STANDARD C63.4-2000 10.1.7 MEASUREMENT PROCEDURES: The UUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m (non metallic table). The UUT was placed in the center of the table. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to at least 10^{th} harmonic of the fundamental.

Peak readings were taken in three (3) orthogonal planes and the highest readings.
Measurements were made by ETS Dr. Genz GmbH at the registered open field test site located at Storkower Str. 38c, 15526 Reichenwalde, Germany.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

ANTENNA & GROUND:
This unit uses internal antenna. There is no provision for an external antenna (see photo).

3 Test results (enclosure)

TEST CASE		Required	Test passed	Test failed
RF Power Output	2.1046	☒	☒	☐
ERP, EIRP	22.913; 24.232	☒	☒	☐
Modulation Requirements	2.1047	☐	☐	☐
Audio Filter Characteristics	22.915(d)(1)	☐	☐	☐
Emission Limitation	22.917(b)(d)	☐	☐	☐
Occupied Bandwidth	2.1049;	☒	☒	☐
Emissions in Receiver Critical Band	22.917(f)	☒	☒	☐
Out of Band Emission at Antenna Terminals Mobile Emissions In Base Frequency Range	2.1051, 22.917(e) 22.917(f), 24.238(a)	☐	☐	☐
Field Strength of Spurious Radiation	2.1053	☒	☒	☐
Line Conducted Emissions	15.207	☒	☒	☐
Frequency Stability vs. Temperature	2.1055	☒	☒	☐
Frequency Stability vs. Voltage	2.1055	☒	☒	☐

According FCC Part 22.901 alternative technologies are exempt from requirements of § 22.323, § 22.905, § 22.915, §22.367 and §22.917, except for emission limitations that apply to emissions out side the assigned channel block.

4 RF Power Output, FCC 2.1046

4.1. Test procedure

The transmitter output was connected to a calibrated coaxial attenuator, the other end of which was connected to a spectrum analyzer. Transmitter output was read off the spectrum analyzer in dBm. The power output at the transmitter antenna port was determined by adding the value of the attenuator to the spectrum analyzer reading.
An HP power meter was also used to measure the RF power.
Tests were performed at three frequencies (low, middle, and high channels) and on all power levels, which can be setup on the transmitters.

4.2. Test Results

PCS1900

Frequency Channel	Peak Output Power
512	30,65 dBm
661	31,18 dBm
810	31,16 dBm

GSM 850

Frequency Channel	Peak Output Power
128	31,70 dBm
188	31,11 dBm
251	31,30 dBm

Comment: see attached diagram

5 Radiated Power

FCC 22.913
The Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

FCC 24.232
The equivalent Isotropic Radiated Power (EIRP) must not exceed 2 Watts.

5.1 Test Procedure

The EUT was positioned on a non-conductive turntable, 0.8m above the ground plane on an open test site.
The radiated emission at the fundamental frequency was measured at 3m distance with a test antenna and spectrum analyzer.

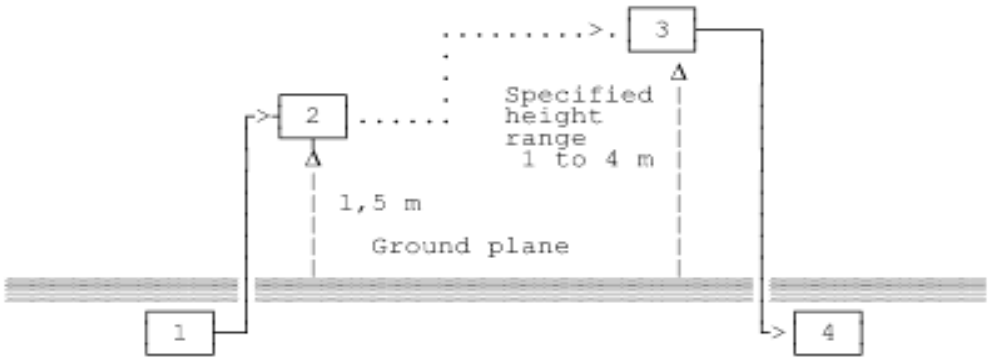
Worst case emission was recorded with the rotation of the turntable and the raising and lowering of the test antenna.

ERP in frequency band 824.2-848.8 MHz, and EIRP in frequency band 1850.2-1909.8 MHz were measured using a substitution method. The EUT was replaced by half-wave dipole (824.2-848.8 MHz) or horn antenna (1850.2-1909.8 MHz) connected to a signal generator.

Substitution RF power measurement at ETS Dr Genz GmbH

General:

The applied substitution method follows ANSI/TIA/EIA-603, ANSI/TIA/EIA-102.CAAA or the appropriate ETSI rules respectively.
The actual signal generated by the EUT can be determined by means of a substitution measurement in which a known signal source replaces the device to be measured.



1) Signal generator;
2) Substitution antenna;
3) Test antenna;
4) Spectrum analyzer or selective voltmeter.

The substitution antenna replaces the transmitter antenna at the same position and in vertical polarisation. The frequency of the signal generator shall be adjusted to the measurement frequency. The test antenna shall be raised or lowered, if necessary, to ensure that the maximum signal is still received. The input signal to the substitution antenna shall be adjusted in level until an equal or a known related level to that detected from the transmitter is obtained in the measurement receiver.
If a fully anechoic chamber is used as test site in order to provide free space conditions there is no need to change the height of the antenna.
The measurement will be repeated in horizontal position.

Calibration:
In order to make this kind of measurement more effective and to avoid subjective measurement faults ETS has installed automatic computer controlled measurement procedures.
With the above described substitution method a test site is calibrated over the full frequency range which is used in suitable frequency steps. For a certain power level on the substitution antenna the received power over the whole frequency range is documented. All necessary antenna gains, cable losses, filter losses and amplifications of preamplifiers are taken in consideration. The summary of this calibration measurement performs a transducer factor that is related to the considered test site and a certain measurement distance. Differences of the radiated power levels of different test samples are determined by internal attenuation of the measurement receiver. The proper function of such test site will be maintained by short term plausibility checks and periodical re-calibration.

Testing:
Now the test sample will be putted on the table at the defined position and the radiated power will be received and documented by the measurement receiver.
On test sites with ground plane the measurement antenna will be lowered and raised to maximum values at significant frequencies.
For peak power measurements the sample is turned by the turntable over 360 degree in order to find the direction with the maximum radiation or to document the max reading with the MAXHOLD function during the rotation.

5.2 Test results

PCS1900

Radiated Power	
Channel 512	29,20 dBm
Channel 661	27,73 dBm
Channel 810	26,93 dBm

GSM 850

Radiated Power	
Channel 128	25,68 dBm
Channel 188	24,59 dBm
Channel 251	25,68 dBm

Comment: see attached diagrams

6 Modulation Deviation Limiting, FCC 2.1.47, 22.915(b)(c)

Comment: not tested

7 Audio Filter Characteristics, FCC 22.915(d)

Comment: not tested

8 Emission Limitations FCC 22.917(b)(d)

Comment: not tested

9 Occupied Bandwidth, FCC 22.917(b)(d); FCC 2.1049

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power.
The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

9.1 Test procedure

The RF output of the transceiver was connected to the input of the spectrum analyzer through sufficient attenuation.
Occupied Bandwidth was measured with a occupied bandwidth function of the analyzer.
To find the Emission Bandwidth (-26 dB) the delta markers were set –26 dB below transmitter power.

9.2 Test Results

PCS1900

	Occupied Channel Bandwidth	Emission Bandwidth
Channel 512	246,5 kHz	312,6 kHz
Channel 661	246,5 kHz	316,6 kHz
Channel 810	244,5 kHz	312,6 kHz

GSM 850

	Occupied Channel Bandwidth	Emission Bandwidth
Channel 128	248,5 kHz	316,6 kHz
Channel 189	248,5 kHz	312,6 kHz
Channel 251	250,5 kHz	324,6 kHz

Comment: See attached diagrams in appendix.

10 Emissions in Receiver Critical Band, FCC 22.917(f)

10.1 Test procedure

Testing was performed with the EUT connected to a 6 dB attennuator, 6 dB splitter, filter bank ad then the EMI receiver. The base station simulator was connected to the other port of the splitter to establish a call.
Filters were introducted to reduce or eliminate spurious emission, which could be generated internally in the EMI receiver.

10.2 Test results

	Frequency Range (MHz)	FCC Limits (dBm)	Test result
Channel 128	869-894	-80	pass
Channel 189	869-894	-80	pass
Channel 251	869-894	-80	pass

Comment: See attached diagrams in appendix.

11 Out of Band Emissions at Antenna Terminals, FCC 22.917(e); 22.917(f); 24.238(a)

Comment: not tested

12 Field Strength of Spurious Radiation, FCC 2.1053

12.1 Test procedure

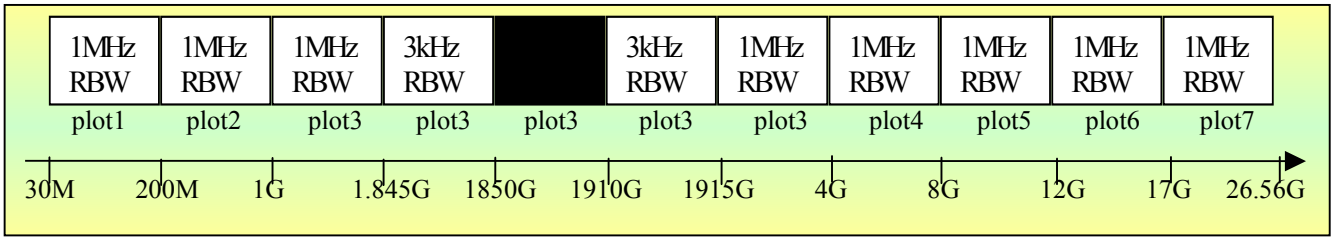
The EUT was positioned on a non-conductive turntable, 0.8m above the ground plane.
The radiated emission at the fundamental frequency was measured at 3m distance with a test antenna and spectrum analyzer.

Worst case emission was recorded with the rotation of the turntable and the raising and lowering of the test antenna.

ERP was measured using a substitution method. The EUT was replaced by horn antenna connected to a signal generator.

The frequency range up to tenth harmonic was investigated.

The tests of spurious radiated emission have been carried out with the EKS-Software from Rode & Schwarz.
The analyser gives automatic the measurements of spectral plots to the EKS software.



In the 1st 1MHz band outside the band edge nearest the channel of interest a 3 kHz res. BW is used.
The measurements from 30MHz to 1845 GHz and 1915GHz to 26.56GHz were performed with a measurement bandwidth of 1MHz.

12.2 Test Results

The radiated spurious emissions were measured for channel 512, channel 661 and channel 810, respectively the upper, center, and lower frequencies of the USPCS band (1850.2 MHz, 1880.2 MHz and 1909.8 MHz).
The measurement diagrams show that all significant spurs are well below the limit line.

12.3 Purpose

The measurements of the spurious emissions at the equipment output terminals were performed pursuant to § 2.1053 in order to verify that any emissions are below the limits given by § 24.238.

PCS 1900

Summary table with radiated data of the test plots for Carrier Test Frequency 1850.2 MHz

Spectral Plot	Frequency Marker Indication [MHz]	Indication Power Level [dBm]	External Attn. [dB]	Worst Case Emission Level [dBm]	Compliance Limit [dBm]	Results
vertical	78.544	-50.89	0	-50.89	-13.0	-37.89
horizontal	88.178	-48.61	0	-48.61	-13.0	-35.61
vertical	988.444	-38.17	0	-38.17	-13.0	-25.17
horizontal	848.889	-35.22	0	-35.22	-13.0	-22.22
vertical	3956.000	-21.40	0	-21.40	-13.0	-8.40
horizontal	1850.000	-20.39	0	-20.39	-13.0	-7.39
vertical	7400.000	-33.11	0	-33.11	-13.0	-20.11
horizontal	7400.000	-32.02	0	-32.02	-13.0	-19.02
vertical	9253.000	-31.20	0	-31.20	-13.0	-18.20
horizontal	11102.000	-19.25	0	-19.25	-13.0	-6.25
vertical	12953.000	-29.09	0	-29.09	-13.0	-17.09
horizontal	12953.000	-23.69	0	-23.69	-13.0	-10.69
vertical	26472.000	-28.26	0	-28.26	-13.0	-15.26
horizontal	26415.000	-29.34	0	-29.34	-13.0	-16.34

Summary table with radiated data of the test plots for Carrier Test Frequency 1880.0 MHz

Spectral Plot	Frequency Marker Indication [MHz]	Indication Power Level [dBm]	External Attn.[dB]	Worst Case Emission Level [dBm]	Compliance Limit [dBm]	Results
vertical	197.544	-50.92	0	-50.92	-13,0	-37.92
horizontal	35.856	-50.30	0	-50.30	-13,0	-37.30
vertical	997.333	-38.01	0	-38.01	-13,0	-25.01
horizontal	851.556	-35.88	0	-35.88	-13,0	-22.88
vertical	3970.000	-21.24	0	-21.24	-13,0	-8.24
horizontal	3538.000	-21.10	0	-21.10	-13,0	-8.10
vertical	7520.000	-35.75	0	-35.75	-13,0	-22.75
horizontal	7520.000	-33.48	0	-33.48	-13,0	-20.48
vertical	11280.000	-27.46	0	-27.46	-13,0	-14.46
horizontal	9404.000	-28.58	0	-28.58	-13,0	-15.58
vertical	13167.000	-23.72	0	-23.72	-13,0	-10.72
horizontal	13160.000	-29.59	0	-29.59	-13,0	-16.59
vertical	26500.000	-27.97	0	-27.97	-13,0	-14.97
horizontal	26472.000	-29.29	0	-29.29	-13,0	-16.29

Summary table with radiated data of the test plots for Carrier Test Frequency 1909.8 MHz

Spectral Plot	Frequency Marker Indication [MHz]	Indication Power Level [dBm]	External Attn.[dB]	Worst Case Emission Level [dBm]	Compliance Limit [dBm]	Results
vertical	195.278	-50.07	0	-50.07	-13,0	-37.07
horizontal	51.533	-44.00	0	-44.00	-13,0	-31.00
vertical	986.667	-37.58	0	-37.58	-13,0	-24.58
horizontal	864.889	-36.59	0	-36.59	-13,0	-23.59
vertical	3963.000	-21.03	0	-21.03	-13,0	-8.03
horizontal	3527.000	-21.36	0	-21.36	-13,0	-8.36
vertical	5729.000	-35.59	0	-35.59	-13,0	-22.59
horizontal	7640.000	-34.94	0	-34.94	-13,0	-31.94
vertical	9551.000	-31.93	0	-31.93	-13,0	-18.93
horizontal	9551.000	-30.93	0	-30.93	-13,0	-17.93
vertical	13373.000	-24.44	0	-24.44	-13,0	-11.44
horizontal	13373.000	-30.45	0	-30.45	-13,0	-17.44
vertical	26500.000	-27.47	0	-27.47	-13,0	-14.47
horizontal	26500.000	-28.99	0	-28.99	-13,0	-15.99

12.4 Limits

Compliance with § 24.238 requires that any emission be attenuated below the transmitter power by at least $43 + 10 \log_{10} P$ (P = transmitter power in Watts).

The compliance limit was calculated as per the following table:

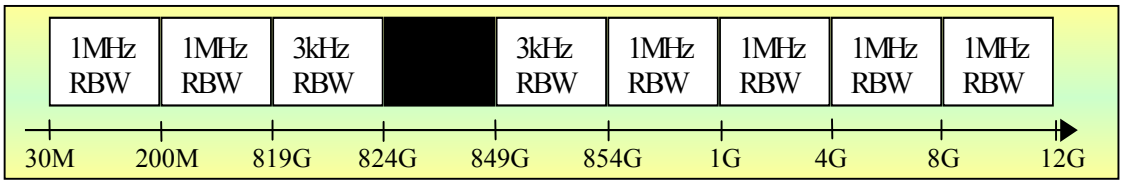
GMSK modulation

Maximum transmitter output power	0,841W = 29,25 dBm
Required attenuation	$43 + 10 \log_{10} 0{,}841 = 42{,}25$ dB
Maximum transmitter output power Required attenuation Compliance limit	29,25 dBm - 42,25dB -13 dbm

Comment: See attached diagrams in appendix.

Measurement procedure and results

The tests of spurious radiated emission have been carried out with the EKS-Software from Rode & Schwarz.
The analyzer gives automatic the measurements of plots to the EKS software.



In the 1st 1MHz band outside the band edge nearest the channel of interest a 3 kHz res. BW is used. The measurements from 30MHz to 824GHz and 849GHz to 12GHz were performed with a measurement bandwidth of 1MHz.

Purpose

The measurements of the spurious emissions at the equipment output terminals were performed pursuant to § 2.1053 in order to verify that any emissions are below the limits given by § 22.917.

GSM 850

Summary table with radiated data of the test plots for Carrier Test Frequency 824,2 MHz

Spectral Plot	Frequency Marker Indication [MHz]	Indication Power Level [dBm]	External Attn. [dB]	Worst Case Emission Level [dBm]	Compliance Limit [dBm]	Results
vertical	198.489	-51.59	0	-51.59	-13.0	-38.59
horizontal	43.222	-51.06	0	-51.06	-13.0	-38.06
vertical	824.000	-17.72	0	-17.72	-13.0	-4.72
horizontal	824.000	-21.68	0	-21.68	-13.0	-8.68
vertical	3923.000	-22.31	0	-22.31	-13.0	-9.31
horizontal	3970.000	-22.48	0	-22.48	-13.0	-9.48
vertical	5773.000	-41.31	0	-41.31	-13.0	-28.31
horizontal	7422.000	-41.75	0	-41.75	-13.0	-28.75
vertical	10747.000	-41.42	0	-41.42	-13.0	-28.42
horizontal	8244.000	-40.02	0	-40.02	-13.0	-27.02

Summary table with radiated data of the test plots for Carrier Test Frequency 836,2 MHz

Spectral Plot	Frequency Marker Indication [MHz]	Indication Power Level [dBm]	External Attn.[dB]	Worst Case Emission Level [dBm]	Compliance Limit [dBm]	Results
vertical	189.233	-51.74	0	-51.74	-13,0	-38.74
horizontal	42.089	-51.18	0	-51.18	-13,0	-38.18
vertical	604.213	-39.10	0	-39.10	-13,0	-26.10
horizontal	852.859	-27.80	0	-27.80	-13,0	-14.80
vertical	1677.000	-20.99	0	-20.99	-13,0	-7.99
horizontal	3527.000	-23.01	0	-23.01	-13,0	-10.01
vertical	5858.000	-38.67	0	-38.67	-13,0	-25.67
horizontal	5858.000	-38.78	0	-38.78	-13,0	-25.78
vertical	10036.000	-40.44	0	-40.44	-13,0	-37.44
horizontal	10036.000	-38.43	0	-38.43	-13,0	-25.43

Summary table with radiated data of the test plots for Carrier Test Frequency 848,8 MHz

Spectral Plot	Frequency Marker Indication [MHz]	Indication Power Level [dBm]	External Attn.[dB]	Worst Case Emission Level [dBm]	Compliance Limit [dBm]	Results
vertical	196.033	-52.04	0	-52.04	-13,0	-39.04
horizontal	46.622	-51.40	0	-51.40	-13,0	-38.40
vertical	849.000	-15.82	0	-15.82	-13,0	-2.82
horizontal	849.000	-16.98	0	-16.98	-13,0	-3.98
vertical	1700.000	-20.42	0	-20.42	-13,0	-7.42
horizontal	3523.000	-22.91	0	-22.91	-13,0	-9.91
vertical	5947.000	-39.86	0	-39.86	-13,0	-26.86
horizontal	7640.000	-37.91	0	-37.91	-13,0	-24.91
vertical	10191.000	-37.38	0	-37.38	-13,0	-24.38
horizontal	10191.000	-40.22	0	-40.22	-13,0	-27.22

Limits

Compliance with § 22.917 requires that any emission be attenuated below the transmitter power by at least $43 + 10 \log_{10} P$ (P = transmitter power in Watts).

The compliance limit was calculated as per the following table:

GMSK modulation

Maximum transmitter output power	1.479 W = 31.70 dBm
Required attenuation	$43 + 10 \log_{10} 1.479 = 44{,}70$ dB
Maximum transmitter output power Required attenuation Compliance limit	31.70 dBm - 44,70 dB -13 dbm

13 Line Conducted Emissions, FCC 15.207

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits. Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.
This measurement was transact first with instrumentation using an average and peak detector and a 10 kHz bandwidth. If the peak detector achieves a calculated level, the measurement is repeated by an instrumentation using a quasi-peak detector.

13.2 Test Results

Frequency	Max. Level	
	quasi-peak	average
-- kHz	lower limit line dBµV	lower limit line dBµV

Limits:

Frequency of Emission (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

Test equipment used: ETS 0003, ETS 0040, ETS 0109, ETS 0125

Comment: see attached diagram

14 Frequency Stability vs Temperature, FCC 2.1055, 22.355

14.1 Test Procedure

The equipment under test was connected to an external DC power supply and the RF output was connected to a frequency counter via feed through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable, exited the chamber through an opening made for that purpose.
After the temperature stabilized the frequency output was recorded from the counter.

14.2 Test Results

PCS1900

ϑ / °C	Frequency Error (Hz)	Frequency Error (ppm)
-30	-43	-0,0229
-20	-40	-0,0213
-10	-38	-0,0202
0	-35	-0,0186
10	-31	-0,0165
20	-30	-0,0160
30	-32	-0,0170
40	-34	-0,0181
50	-35	-0,0186

GSM 850

ϑ / °C	Frequency Error (Hz)	Frequency Error (ppm)
-30	-20	-0,0239
-20	-22	-0,0263
-10	-18	-0,0215
0	-22	-0,0263
10	-18	-0,0215
20	-15	-0,0179
30	-17	-0,0203
40	-20	-0,0239
50	-21	-0,0251

Limit: ± 2091 Hz

Note: The measured frequency stability vs. temperature is identical (%difference) in all bands the above table since the Tx frequency is locked to the same TCXO.

15 Frequency Stability vs Voltage, FCC 2.1055, 22.355

15.1 Test procedure

An external variable DC power supply was connected to the battery terminals of the equipment under test.
For hand carried, battery powered equipment primary supply voltage was reduced to the battery operating end point as specified by the manufacturer. The output frequency was recorded for each battery voltage.

15.2 Test results

PCS 1900

U_B / V	Frequency Error (Hz)	Frequency Error (ppm)
3,2	-33	-0,0176
3,4	-31	-0,0165
3,6	-27	-0,0144
3,8	-30	-0,0160
4,0	-32	-0,0170
4,2	-32	-0,0170
4,4	-35	-0,0186

GSM 850

U_B / V	Frequency Error (Hz)	Frequency Error (ppm)
3,2	-20	-0,0239
3,4	-17	-0,0203
3,6	-13	-0,0155
3,8	-12	-0,0144
4,0	-14	-0,0167
4,2	-17	-0,0203
4,4	-20	-0,0239

Appendix

A Pictures
B RF Power Output
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