ELECTRONIC TECHNOLOGY SYSTEMS
DR. GENZ GMBH

TEST - REPORT

FCC RULES 47CFR PART 15 / SUBPART C (Section 15.231)

Test report no.:

H1M20602-016100-C-1

FCC ID:ST9HT-228

Certificate 1983-01

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

TABLE OF CONTENTS

1 General information

1.1 Notes

1.2 Testing laboratory

1.3 Details of approval holder

1.4 Application details

1.5 Test item

1.6 Test standards

2 Technical test

2.1 Summary of test results

2.2 Test environment

2.3 Test equipment utilized

2.4 Test Procedure

3 Test Results

3.1 Field strength of the Fundamental Wave

3.2 Correction for Pulse Operation (Duty Cycle)

3.3 Radiated Spurious Emissions

3.4 Emission bandwidth

3.5 Automatically deactivation

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 possesses 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 extracts from the report requires the prior written approval of the ELECTRONIC TECHNOLOGY SYSTEMS DR. GENZ GMBH.

Tester:

Date	ETS-Lab.	Name	Signature
08.03.2006		Schulz	

Technical responsibility for area of testing:

Date	ETS	Name	Signature
08.03.2006		N. Kaspar	

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: DAT-P-201/96

ACCREDITED COMPETENT BODY

DAR-REGISTRATION NUMBER: BPT-ZE-026/96-00

FCC FILED TEST LABORATORY REG. NO. 96970

A2LA Accredited Certification No.1983-01

BLUETOOTH QUALIFICATION TEST FACILITY (BQTF)
Accredited by Bluetooth Qualification Review Board

INDUSTRY CANADA FILED TEST LABORATORY REG. NO. IC 3470

1.3 Details of approval holder

Name	: ZHONGSHAN HONGMAO ELECTRONICS CO., LTD.
Street	: XIAOLAN INDUSTRIAL ZONE, XIAOLAN TOWN, ZHONGSHAN
Town	: GUANGDONG
Country	: CHINA
Telephone	: +86 760 2283831
Fax	: +86 760 2247968
Contact	: MR. HE
Telephone	: +86 760 2283831

1.4 Application details

Date of receipt of application	:	17.02.2006
Date of receipt of test item	:	17.02.2006
Date of test	:	27.02.2006

1.5 Test item

Description of test item:	Garage Door Opener Control System
Type identification:	HT-228
Serial number:	Test sample without serial number
Transmitting frequency:	315 MHz
Operation mode:	simplex
Transmitting mode:	P1D
Voltage supply:	6 V DC (2xCR2016 battery)
Antenna:	integral antenna
Photos:	see Annex

Manufacturer:

Name	: ZHONGSHAN HONGMAO ELECTRONICS CO., LTD.
Street	: XIAOLAN INDUSTRIAL ZONE, XIAOLAN TOWN, ZHONGSHAN
Town	: GUANGDONG
Country	: CHINA

Additional information : ./.

1.6 Test standards

Technical standard: **FCC RULES 47CFR PART 15 / SUBPART C (Section 15.231), Section §15.35(c)**

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
Details of power supply	: 6 V DC (2xCR2016 battery)

2.3 Test equipment utilized

No.	Test equipment	Type	Manufacturer
ETS 0001	ESD Gun	SESD 30000	Schlöder
ETS 0002	Test receiver	ESVP	Rohde & Schwarz
ETS 0003	Diode power sensor	NRV-Z2	Rohde & Schwarz
ETS 0004	Spectrum and network analyzer	FSMS 26	Rohde & Schwarz
ETS 0005	Test receiver	SMV 11	MEB
ETS 0006	Test receiver system	SME 12	MEB
ETS 0007	Horn antenna	AT 4004	ar
ETS 0008	Antenna	Loop antenna	Siemens
ETS 0009	Antenna	ARA 2	MEB
ETS 0010	Antenna	Loop antenna	MEB
ETS 0011	Antenna	van Veen/ Frame	Rohde & Schwarz
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	Precision antenna kit	VHAP	Schwarzbeck
ETS 0017	Precision antenna kit	UHAP	Schwarzbeck
ETS 0018	Horn antenna	BBHA 9120 D	Schwarzbeck
ETS 0019	Horn antenna	BBHA 9120 D	Schwarzbeck
ETS 0020	Antenna	DP 21	MEB
ETS 0021	Antenna	DP 3	MEB
ETS 0022	Antenna	SAS-200/ 521	A.H. Systeme+D65
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	Antenna	HK 116	Rohde & Schwarz
ETS 0031	Turn table	DS 412	Heinrich Deisel
ETS 0032	Controller	HD 050	Heinrich Deisel

No.	Test equipment	Type	Manufacturer
ETS 0033	Calibration Set CDN	3xAdapter 50-150 Ohm	ETS
ETS 0034	RF generator/ Amplifier	SMLR	Rohde & Schwarz
ETS 0035	RF generator/ Amplifier	SMLM	Rohde & Schwarz
ETS 0036	Zirc. Antenna	3102	EMCO
ETS 0037	Zirc. Antenna	3102L	EMCO
ETS 0038	RF amplifier	150L	Amplifier Research
ETS 0039	Absorbing clamp	MDS 21	Rohde & Schwarz
ETS 0040	Artificial mains Network	ESH3-Z5	Rohde & Schwarz
ETS 0041	Artificial mains	ESH3-Z4	Rohde & Schwarz
ETS 0042	Artificial mains	ESH3-Z6	Rohde & Schwarz
ETS 0043	Directional coupler	1850	KRYTAR
ETS 0044	Artificial mains	NNB 111	MEB
ETS 0045	Stripe line	IEC 801-3	ETS
ETS 0046	Power supply	LTS 006	RFT
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	Tektronix
ETS 0052	Attenuator	776B-10	Narda
ETS 0053	ECAT Control center	CE 40	Keytek/ EMV
ETS 0054	EFT simulator	E 412	Keytek/ EMV
ETS 0055	Module network coupler	E 4551	Keytek/ EMV
ETS 0056	Blank plug-in		Keytek/ EMV
ETS 0057	Module SURGE with DC coupler	E 501	Keytek/ EMV
ETS 0058	Capacitive coupling clamp	E 502 B	Keytek/ EMV
ETS 0059	Kikusui amplifier	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	CDN 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

No.	Test equipment	Type	Manufacturer
ETS 0068	CDN 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	Video camera system	KMB012	Kocom
ETS 0072	Interphone system	JS-1400	Jiuh Sheng
ETS 0073	Audio noise meter	GSM 2	MKD/ RFT
ETS 0074	RF Millivoltmeter	QRV 2	MKD/ RFT
ETS 0075	NF generator	GF 22	Präcitronic
ETS 0076	Feeding bridge A	SBA 1000	ESP
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 system	Novell	Esotronic
ETS 0083	Apple computer system	Performa 630	Macintosh
ETS 0084	Process controller	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	Color TV pattern generator	PM 5518-TX VPS	Philips
ETS 0089	Radio communication 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	Power amplifier	150W1000	AR Amplifier Research
ETS 0093	Attenuator	57-20-33	Weinschel
ETS 0094	Power sensor	NRV-Z55	Rohde & Schwarz
ETS 0095	DECT system controller	PSMD	Rohde & Schwarz
ETS 0096	DECT Signaling 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	Power amplifier	50W1000B	AR Amplifier Research
ETS 0102	CDN	M3-801/6	MEB
ETS 0103	Magnetic field test set	MF1000	EMC Partner

No.	Test equipment	Type	Manufacturer
ETS 0105	High power synthesizer/ sweeper	SMP 22 / 02	Rohde & Schwarz
ETS 0106	Antenna	VAMP 9443	Schwarzbeck Meßelektronik
ETS 0108	DECT protocol tester TBR 22	TS 1220	Rohde & Schwarz
ETS 0109	Process controller	PSM 2	Rohde & Schwarz
ETS 0110	Real time signaling unit	PSMD-B2	Rohde & Schwarz
ETS 0111	PCM Real-time audio interface for PSM	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		Rohde & Schwarz
ETS 0116	Protocol Tester	PTW 70	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	Uninterruptible power supply	UPS - 1500	Sendon
ETS 0127	Uninterruptible power supply	UPS - 1000 LC	Sendon
ETS 0128	Uninterruptible power supply	UPS - 1000	Sendon
ETS 0129	Uninterruptible power supply	UPS - 500	Sendon
ETS 0130	Uninterruptible 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 0135	Measuring 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

No.	Test equipment	Type	Manufacturer
ETS 0142	Impedance converter	TK 11	RFT
ETS 0143	Impedance converter	TK 12	RFT
ETS 0146	Active RF probe	ESH2-Z2	Rohde & Schwarz
ETS 0147	Probe	TK 103	MEB
ETS 0148	RF Current Probe	F-65	FCC
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 (I)	Schaffner
ETS 0155	Signal generator	SMG	Rohde & Schwarz
ETS 0156	Adjacent channel power meter	NKS	Rohde & Schwarz
ETS 0157	TV and Sat-Signal generator	VTG 700	Grundig
ETS 0158	TV and Sat Signal generator	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	Harmonic / Flicker Analyzer	HFA 3000	Schlöder
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 - Front-end (analogue)	MFE III	HEAD acoustics
ETS 0170	Measurement - Front-end (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 - Front-end line interface	MFE V	HEAD acoustics
ETS 0175	Software line interface (analogue)	COPTZV5	HEAD acoustics
ETS 0176	Acoustic volt meter	COP 4	HEAD acoustics
ETS 0177	Feeding bridge B	SBB 1000	ESP
ETS 0178	Open area test side	10m	ETS

No.	Test equipment	Type	Manufacturer
ETS 0179	Open area test side	3m	ETS
ETS 0180	Artificial mains	NNB01/RFZ	RFZ
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 supply		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
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 0204	Digital thermometer	ad 20th	ama-digit
ETS 0205	High voltage test generator	HA 3300 D	SPS electronic
ETS 0206	High voltage test accessories	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	Flexible 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

No.	Test equipment	Type	Manufacturer
ETS 0215	Glow Wire tester	T 03.14	PTL
ETS 0216	Force indicator 50N	P 10.31	PTL
ETS 0218	RF probe	URV5-Z7	Rohde & Schwarz
ETS 0219	Power sensor	NRV-Z2	Rohde & Schwarz
ETS 0221	ISDN-S0-Analyzer	K1403	Siemens
ETS 0222	ISDN Protocol Analyzer	TE965	Tekelec Teleco.
ETS 0223	GSM/ PCN/ PCS-Simul.	TS8915B	Rohde & Schwarz
ETS0224A	Millivoltmeter	URV5	Rohde & Schwarz
ETS0224B	Diode Power Sensor	NRV-Z1	Rohde & Schwarz
ETS0224C	Programmable high resolution time counter	PM6654G	Philips
ETS0224D	RF Step Attenuator	RSP	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 communication tester	CMT 54	Rohde & Schwarz
ETS 0230	Radio communication tester	CMD 65	Rohde & Schwarz
ETS 0232	Radiation test source	VSQ 1	MEB
ETS 0233	Direction coupler	RK 100	MEB
ETS 0234	Power meter	NRVD	Rohde & Schwarz
ETS 0235	RF network-analyzer	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	Isotropic field probe 40 GHz	FP 2080 Kit	Amplifier Research
ETS 0240	Isotropic field probe 1 GHz	FP 2000 Kit	Amplifier Research
ETS 0241	Pulse Generator	4050	PicoSecond PL
ETS 0242	Harmonics analyzer	F 41B	Fluke
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

No.	Test equipment	Type	Manufacturer
ETS 0250	Coupling clamp	ACC	EM-Test
ETS 0251	Climatic chamber	VT 4004	Vötsch
ETS 0252	System controller	PSM 12	Rohde & Schwarz
ETS 0253	Spectrum analyzer	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	PTW60	Rohde & Schwarz
ETS 0264	Spectrum analyzer	F 1048	HAMEG
ETS 0265	Loop antenna	HFRA 9150	Schwarzbeck
ETS 0266	Measurement adapter 1:100	50 Ohm	
ETS 0267	RF signal generator	SMT 03	Rohde & Schwarz
ETS 0268	RF signal generator	SMP 02	Rohde & Schwarz
ETS 0269	RF bridge 50 Ohm	86205 A	Aglient
ETS 0270	RF signal generator	SMP 04	Rohde & Schwarz
ETS 0271	Spectrum analyzer	FSEK30	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 analyzer	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 analyzer	FSM	Rohde & Schwarz
ETS 0282	RF bridge 75 Ohm	86207 A	Hewlett Packard
ETS 0283	RF bridge 50 Ohm	86205 A	Hewlett Packard
ETS 0284	Field probe	11940 A	Hewlett Packard

No.	Test equipment	Type	Manufacturer
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	Artificial 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	Artificial mains	NNBM 8125	Schwarzbeck
ETS 0294	Biconical antenna	HK 116	Rohde & Schwarz
ETS 0295	LPD antenna	HL 223	Rohde & Schwarz
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	Keytek
ETS 0303	Telecom line CDN	CM-TEL CD	Keytek
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 0318	Dial pulse/ DTMF tester	210	HE
ETS 0319	Opto link	GPIB 140	NI
ETS 0320	Opto link	GPIB 140	NI
ETS 0322	Insertion unit	URV5-Z4	Rohde & Schwarz

No.	Test equipment	Type	Manufacturer
ETS 0323	DECT portable part	Gigaset 1000	SIEMENS
ETS 0324	DECT fix part	Gigaset 1000	SIEMENS
ETS 0325	DECT portable part		Philips
ETS 0326	DECT fix part		Philips
ETS 0327	Blue Unit	V 2.0	Nokia
ETS 0328	ELF Field Strength System	HI-3604	Holaday Industries, INC.
ETS 0329	VDT/VLF Radiation System	HI-3603	Holaday Industries, INC.
ETS 0330	Fiber Optic Remote Control	HI.3616	Holaday Industries, INC.
ETS 0331	TS 1220		
ETS 0332	PSM		
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	Thermometer		Proficell
ETS 0341	Thermometer		Proficell
ETS 0342	Thermometer		Proficell
ETS 0343	Thermometer		Proficell
ETS 0344	Thermometer		Proficell
ETS 0345	Thermometer		Proficell
ETS 0346	Thermometer		Proficell
ETS 0347	Current Probe	EZ-17	Rohde & Schwarz
ETS 0348	RF Millivoltmeter	URV 55	Rohde & Schwarz
ETS 0349	Temperature / humidity logger	OPUS10 THI	LUFFT
ETS 0350	Horn Antenna	BBHA 9120-C	Schwarzbeck
ETS 0351	RF amplifier	DWT-1857	Microwave
ETS 0354	RF amplifier	DBS-0408N423	Microwave
ETS 0355	high pass	H03G12G3	Microwave
ETS 0356	high pass	H03G12G3	Microwave
ETS 0357	high pass	H08G18G3	Microwave
ETS 0358	RF amplifier	AFD3-010040-15-ln	MITEQ
ETS 0359	RF amplifier	M/N AM-1331	MITEQ

No.	Test equipment	Type	Manufacturer
ETS 0360	RF amplifier	DBS-0408N423	Microwave
ETS 0361	RF amplifier	DBS 1826N515	Microwave
ETS 0362	high pass	H03G12G3	Microwave
ETS 0363	high pass	H08G18G3	Microwave
ETS 0364	high pass	H08G18G3	Microwave
ETS 0365	Notch filter 2.4 GHz	WRCT2.40/248	Wain Wright
ETS 0366	high pass	H08G18G3	Microwave
ETS 0367	high pass	H03G12G3	Microwave
ETS 0368	Notch filter 0.5-1 GHz	BN86883	Schomandl
ETS 0369	Notch filter 210-500 MHz	BN86882	Schomandl
ETS 0370	Notch filter 15-90 MHz	BN86880	Schomandl
ETS 0371	Notch filter 85-250 MHz	BN86881	Schomandl
ETS 0372	Direction coupler	RK 100	MEB
ETS 0373	Direction coupler	DC3001	EMV
ETS 0374	Power Supply	NGSM32	Rohde & Schwarz
ETS 0375	Vector Signal Generator	SMIQ03B	Rohde & Schwarz
ETS 0376	Signal Generator	SMP22	Rohde & Schwarz
ETS 0377	Advanced Signal Condi. Unit	ASCU850	Rohde & Schwarz
ETS 0378	Advanced Signal Condi. Unit	ASCU190	Rohde & Schwarz
ETS 0379	Advanced Signal Condi. Unit	ASCU180	Rohde & Schwarz
ETS 0380	Advanced Signal Condi. Unit	ASCU900	Rohde & Schwarz
ETS 0381	Ethernet HUB	CS-HUB	Rohde & Schwarz
ETS 0382	Vector Signal Generator	SMIQ03B	Rohde & Schwarz
ETS 0383	Spectrum Analyzer	FSU26	Rohde & Schwarz
ETS 0384	Main Frame Signal and Con. Unit	SSCU-GW	Rohde & Schwarz
ETS 0385	Universal Protocol Tester	CRTU-RU	Rohde & Schwarz
ETS 0386	Power meter	NRVD	Rohde & Schwarz
ETS 0387	Power sensor	NRV-Z1	Rohde & Schwarz
ETS 0388	Power sensor	NRV-Z1	Rohde & Schwarz
ETS 0389	Fading Simulator	ABFS	Rohde & Schwarz
ETS 0390	System PC PC3600	TS-PC36	Rohde & Schwarz
ETS 0391	Rubidium Frequency Standard	DATUM 8040	DATUM GmbH
ETS 0392	RF Distribution	DATUM 6502	DATUM GmbH
ETS 0393	Insertion unit	URV5-Z4	Rohde & Schwarz
ETS 0394	Advanced Signal Cond. Unit	ASCUFDD-WCDMA	Rohde & Schwarz

No.	Test equipment	Type	Manufacturer
ETS 0395	Universal Protocol Tester	CRTU-RU	Rohde & Schwarz
ETS 0396	Universal Protocol Tester	CRTU-RU	Rohde & Schwarz
ETS 0397	Universal Protocol Tester	CRTU-RU	Rohde & Schwarz
ETS 0398	Fading Simulator	ABFS	Rohde & Schwarz
ETS 0399	System Protocol Unit	CRTU-PU	Rohde & Schwarz
ETS 0400	Universal Protocol Tester	CRTU-W	Rohde & Schwarz
ETS 0401	MPEG2 Generator	DVG	Rohde & Schwarz
ETS 0402	TV Messsender	SFQ	Rohde & Schwarz
ETS 0403	RF Current Probe	F-140	Rohde & Schwarz
ETS 0404	Exposure Level Tester	ELT-400	NARDA
ETS 0405	Magnetic Field Probe 100cm^2	2300/90.10	NARDA
ETS 0406	Signal Generator	SML02	Rohde & Schwarz
ETS 0407	EMC Emission tester	Harmonics 1000	EMC Partner
ETS 0408	Transient 2000	TRA1Z191N	EMC Partner
ETS 0409	Stripline	DC220	Schwarzbeck
ETS 0410	BAN	1	ETS
ETS 0412	Spectrum Analyzer	FSU 3	Rohde & Schwarz
ETS 0418	High pass filter 4-8GHz		Microwave
ETS 0419	High pass filter 8-18 GHz		Microwave
ETS 0420	Amplifier 0.1-1 GHz	M/N AM-1331	MITEC
ETS 0421	Amplifier 1-4 GHz	AFD3-010040-15-LN	MITEC
ETS 0422	Amplifier 4-8 GHz	DBS-0408N423	Narda
ETS 0423	Amplifier 8-18 GHz	DWT-18057	Narda
ETS 0424	Amplifier 18-26.5 GHz	DBS-1826N515	Narda
ETS 0425	T-network	ESH 3-Z4	Rohde & Schwarz
ETS 0426	CDN	T4 HF	MEB
ETS 0427	Power sensor	NRV-Z6	Rohde & Schwarz
ETS 0428	4-WIRE ISN with B1	ENY41	Rohde & Schwarz
ETS 0429	Current probe test Jig	SW14 7LY	Chase
ETS 0430	RF signal generator	SML02	R&S
ETS 0431	AC mains adapter	BS5733	Travel Emporium
ETS 0432	RF amplifier matrix	RSU-ETS-BT	ETS
ETS 0433	RF amplifier matrix	RSU-ETS-CTR6	ETS
ETS 0434	Reserved Tre	RSU-ETS-GSM	
ETS 0435	HP-Filter	H1G04G01	Microwave

No.	Test equipment	Type	Manufacturer
ETS 0436	HP-Filter	H1G04G01	Microwave
ETS 0437	HP-Filter	H0G408G1	Microwave
ETS 0438	HP-Filter	H0G408G1	Microwave
ETS 0439	Amplifier	DBS-1826N515	Narda-DBS-Microwave
ETS 0440	Amplifier	AM-1331	MITEQ
ETS 0441	Bluetooth Protocol Tester	PTW 60	Rohde & Schwarz
ETS 0442	Nokia Tester for Bluetooth 1.1	DTL - 1	Nokia
ETS 0443	IBM BT PC Card	BTPCN101	IBM / Motorola
ETS 0444	Sony BT DUN Modem	BTA- NW 1	Sony
ETS 0445	RF attenuator 6dB	50FH-006-300	JFK
ETS 0446	RF attenuator 30dB	50FH-030-300	JFK
ETS 0447	Motor vehicle artificial network	LN-KFZ/200	R. Heine Hochrequenztechn.
ETS 0448	RF power amplifier	AR 60S1G3	AR Amplifier Research
ETS 0449	Stäubli robot	RX90B L	Stäubli
ETS 0450	Stäubli robot controller	CS/MBs&p	Stäubli
ETS 0451	DASY 4 measurement server		Schmid & Partner
ETS 0452	Control pendant		Stäubli
ETS 0453	Compaq computer	Pentium IV 2 GHz	Schmid & Partner
ETS 0454	Data acquisition electronics	DAE3V1	Schmid & Partner
ETS 0455	Dummy probe		Schmid & Partner
ETS 0456	Dosimetric E-field probe	ET3DV6	Schmid & Partner
ETS 0457	Dosimetric E-field probe	ET3DV6	Schmid & Partner
ETS 0458	Dosimetric H-field probe	H3DV6	Schmid & Partner
ETS 0459	System validation kit	D900V2	Schmid & Partner
ETS 0460	System validation kit	D1800V2	Schmid & Partner
ETS 0461	System validation kit	D1900V2	Schmid & Partner
ETS 0462	System validation kit	D2450V2	Schmid & Partner
ETS 0463	Probe alignment unit	LBV2	Schmid & Partner
ETS 0464	SAM twin phantom	V4.0	
ETS 0465	Mounting device	V 3.1	
ETS 0466	Directional coupler	HP 87300B	
ETS 0468	Isotropic E-Field Probe	ER3DV6	Schmid & Partner
ETS 0469	Dielectric probe kit	85070D	Agilent
ETS 0470	Amplifier	AM-1300-1103	MITEQ
ETS 0472	Antenna	BTA-H	Frankonia

No.	Test equipment	Type	Manufacturer
ETS 0473	GSM / UMTS system simulator	TS 8950	Rohde & Schwarz
ETS 0474	EMI test receiver	ESCS30	Rohde & Schwarz
ETS 0475	Amplifier	AFS4-00101800-U	MITEQ
ETS 0476	Test receiver	ESCS 30	Rohde & Schwarz
ETS 0477	GPS system (active GPS antenna)	4490	HOPF
ETS 0478	Crystal filter	MQF 127.50-2400/F	Vectron International
ETS 0480	Validation dipole	DB 3	EMCO
ETS 0481	40GHz standard gain horn with amplifier	22240-25 CBL26402075	Flann Microwave
ETS 0482	40GHz high gain antenna	AT4560	Amplifier research
ETS 0483	Amplifier	AFD3010040-15-LN	MITEQ
ETS 0485	Radio Communication Tester	CMU 200	Rohde & Schwarz
ETS 0490	Rubidium Frequency Standard	8040	DATUM
ETS 0491	RF Distribution	6502	DATUM
ETS 0492	Indusrtial Cotroller	PSM12	R & S
ETS 0493	Protokoll Tester	PTW60	R & S
ETS 0494	Switching unit	SSCU	R & S
ETS 0495	RF Step Attenuator	RSP	R & S
ETS 0496	Spectrum Analyzer	FSP	R & S
ETS 0497	Power Meter	NRVD	R & S
ETS 0498	Diode Power Sensor	NRV-Z1	R & S
ETS 0499	Diode Power Sensor	NRV-Z1	R & S
ETS 0500	Signal Generator	SMIQ03	R & S
ETS 0501	Signal Generator	SMIQ03	R & S
ETS 0502	Power Splitter	DS-808-4	Macom

2.4 Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-2003 5.2 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 C63.4-2003 6.4 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. The ambient temperature of the UUT was °C with a humidity of 40 %.

FORMULA OF CONVERSION FACTORS: 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 C63.4-2003 6.2.1 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 10th 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)

☒ 1st test ☐ test after modification ☐ production test

TEST CASE	Required	Test passed	Test failed
Field strength of the Fundamental Wave ; § 15.231	☒	☒	☐
Correction for Pulse Operation; § 15.35(c)	☒	☒	☐
Radiated spurious emission ; § 15.231, 15.209	☒	☒	☐
Emission bandwidth; § 15.231(c)	☒	☒	☐
Automatically deactivation; § 15.231(a)	☒	☒	☐

3.1 Field Strength of the Fundamental Wave

Test result:

Measured result with AV detector (dBµV/m)	Average Limit of field strength of fundamental wave (dBµV/m)
53.43	**75.62**
Measurement uncertainty	<3 dB

Limit 15.231(b)

Fundamental Frequenzy (MHz)	Field strength of fundamental limit µV/m
40,66 – 40,70	2.250
70 - 130	1.250
130 - 174	1.250 to 3.750**
174 - 260	3.750
260 - 470	3.750 to 12.000** **(315 MHz:75.62 dBµV/m = 6037.5 µV/m)**
Above 470	12.000

Limit 15.231(e)

Fundamental Frequenzy (MHz)	Field strength of fundamental, limit µV/m
40,66 – 40,70	1,000
70 - 130	500
130 - 174	500 to 1.500**
174 - 260	1.500
260 - 470	1.500 to 5.000**
Above 470	5.000

** linear interpolation

Remark: **The limit is met. For the diagram see appendix B.**

Test equipment used: ETS 0012, ETS 0013; ETS 0018, ETS 0271, ETS 0311

3.2 Correction for pulse Operation (Duty cycle)

The Duty cycle factor, expressed in dB, is arrived by taking the following formula:

$$K_E = 20 \log \left[(t_{iw}/T_w) * (t_{iB}/T_B) \right]$$

K_E: pulse operation correction factor [dB]
t_{iw} pulse duration for one complete data word [msec]
t_{iB} pulse duration for one bit [µsec]
T_w a period of the data word [msec]
T_B a period of one bit [µsec]

Test result:

T_{iw}(msec)	T_w(msec)	t_{iB}(µsec)	T_B(µsec)	K_E(dB)
24.40	32.40	524.44	844.44	**-6.60**

Remark: **The limit is met. For the diagram see appendix F.**

3.3 Radiated Spurious Emissions

Spurious emission was measured with modulation (declared by manufacturer).

The limits on the field strength of the spurious emission in the table § 15.231(b) are based on the fundamental frequency of the intentional radiator. Spurious emission shall be attenuated to the average (or alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in § 15.209, whichever limit permits a higher field strength.
In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

SAMPLE CALCULATION OF LIMIT. All results will be updated by an automatic measuring system in accordance to point 2.3.

Calculation of test results:

Such factors like antenna correction, cable loss, Pre Amplifier ,duty cycle corrections are already included in the provided measurement results.

The peak and average spurious emission plots was measured with the average limits.
In the Table being listed the critical peak and average value an exhibit the compliance with the above calculated Limits.

Summary table with critical radiated data of the test plots

Freq.	Frequency Marker [MHz]	Polari-zation	Duty Cycle corrections dB	Max. Field Strength [dBµV/m]	Compliance Limit [dBµV/m]	Detec-tor	BW [MHz]	Margin [dB]
1	198.978	V	-6.60	33.41	55.62	PK	**0,1**	-22.21
1	198.637	H	-6.60	32.18	55.62	PK	**0.1**	-23.44
2	629.65	V	-6.60	47.74	55.62	PK	**0,1**	-7.88
2	629.65	H	-6.60	46.04	55.62	PK	**0.1**	-9.58
2	945.49	V	-6.60	50.27	55.62	PK	**0.1**	-5.35
2	945.49	H	-6.60	50.64	55.62	PK	**0.1**	-4.98
3	1259.0	V	-6.60	37.26	55.62	AV	**1**	-18.36
3	1571.0	H	-6.60	32.61	55.62	AV	**1**	-23.01

Freq. – Frequency Range:

1: 30 – 200 MHz
2: 200 – 1000 MHz
3: 1 – 4 GHz

Remark: **The limit is met. The measurement was performed up to the 10 th harmonic.**
For the diagram see appendix C.

Test equipment used: ETS 0012, ETS 0013; ETS 0018, ETS 0271, ETS 0311

Limits: Out of Band Radiated Emissions

FCC Rule: 15.231(b) , 15.35
For out of band emissions that are close to or that exceed the 20 dB attenuation requirement described in the specification, radiated measurements were performed at a 3 m separation distance to determine whether these emissions complied with the general radiated emission requirement.

Limits:
For frequencies below 1GHz :
Max permitted average Limits = Max. reading – 20 dB

75.62 dBµV/m - 20 dB= 55.62 dBµV/m

For frequencies above 1GHz (Average measurements).
Correction factor conform 15.35 (c) (Average measurements).
Duty cycle correction:
Max. reading – 20 dB - duty cycle correction:

No duty cycle correction was added to the reading

75.62 dBµV/m- 20 dB= 55.62 dBµV/m

Limits: Radiated Emissions in restricted Bands

FCC Rules: 15.231 (b), 15.205, 15.209, 15.35
Radiated emission measurements were performed from 30 MHz to 4000 MHz.
For radiated emission tests, the analyzer setting was as followings:
RES BW VID BW
Frequency <1 GHz 100 kHz 100 kHz (Peak measurements)
Frequency >1 GHz 1 MHz 1 MHz (Peak measurements)
1 MHz 1 MHz (Average measurements)

Limits for 15.109:

Frequency of Emission (MHz)	Field strength (microvolts/meter)	Field Strength (dB microvolt/meter)
30 – 88	100	40.0
88 – 216	150	43.5
216 – 960	200	46.0
Above 960	500	54.0

Remark: **The limit is met. For the diagram see appendix C.**

3.4 Emission bandwidth

Limit:

The bandwidth of the emission shall be no wider than 0,25% of the centre frequency for devices operating above 70 MHz and below 900MHz. For devices operating above 900 MHz, the emission shall be no wider than 0,5% of the centre frequency. Bandwidth is determined at the points 20dB down from the modulated carrier.

Measurement of Necessary Bandwidth (BN)

Used frequency	Measured Bandwidth	Limit
315 MHz	41,2825 kHz	787,5 kHz
Measurement uncertainty	<10Hz	

Remark: **The limit is met. For the diagram see appendix D.**

Test equipment used: ETS 0013; ETS 0311; ETS 0271

3.5 Automatically Deactivation

A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

ON time (µsec.)	Limit (sec.)
159.41	5

Test equipment used: ETS 0271

Remark: **The limit is met. The duration of the transmission is 159.41 microseconds each time the button is pushed which meets the requirement of ceasing transmission within 5 seconds of the button being released. For the diagram see appendix E.**

Appendix

A Pictures
B Field Strength of the Fundamental Wave
C Radiated Spurious Emissions
D Emission Bandwidth
E Automatically Deactivation
F Correction for Pulse Operation (Duty Cycle)

Appendix A

Pictures

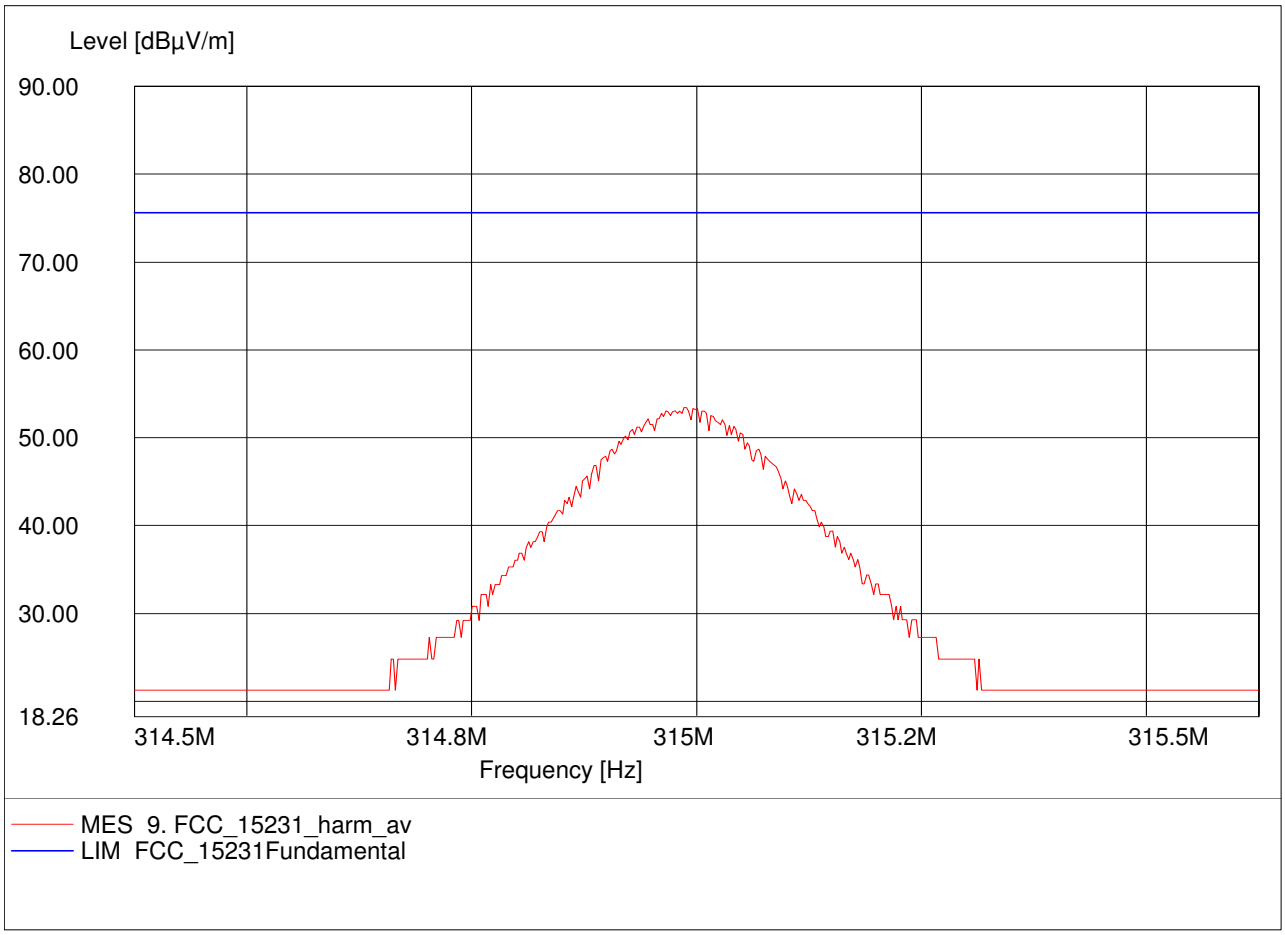
Appendix B

Field Strength of the Fundamental Wave

Field Strength of Fundamental

FCC RULES PART 15, SUBPART C

EUT:	GARAGE DOOR OPENER CONTROL SYSTEM
MODEL NO.:	HT-228
Approval Holder:	ZHONGSHAN HONGMAO ELECTRONICS CO.,LTD
Test Site / Operator:	ETS / Mr. Michael
Temperature/Voltage:	Temp.: 23°C/ Unom.: 6 VDC
Test Specification:	according to Section15.231,average detector
Comment 1:	Dist.: 3m, Ant.: HL223
	Freq: 314.991MHz, Emax: 53.43dBµV/m, RBW: 100kHz

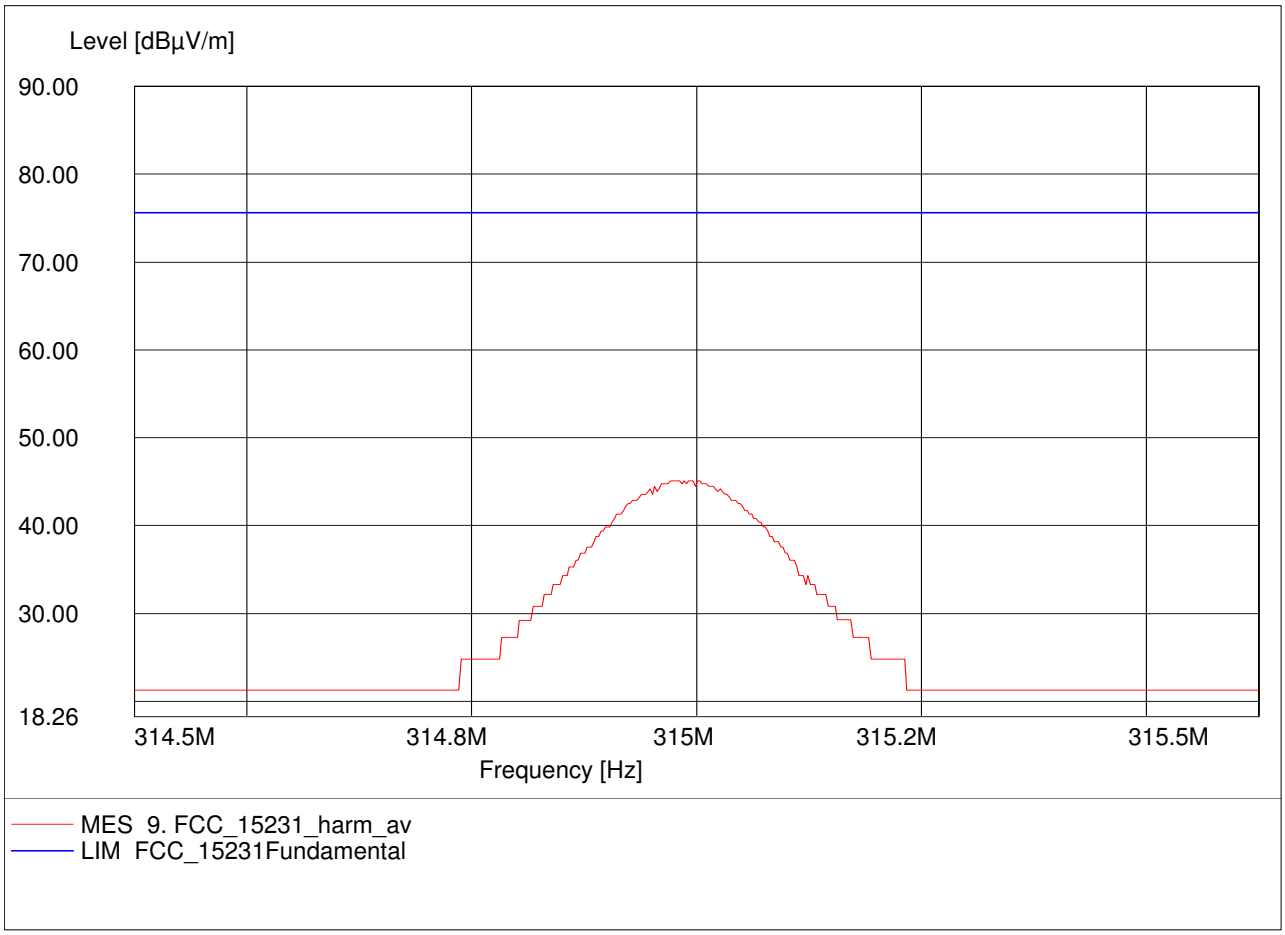


27/02/2006 15:29 Overview / Antenna vertical

Field Strength of Fundamental

FCC RULES PART 15, SUBPART C

EUT:	GARAGE DOOR OPENER CONTROL SYSTEM
MODEL NO.:	HT-228
Approval Holder:	ZHONGSHAN HONGMAO ELECTRONICS CO.,LTD
Test Site / Operator:	ETS / Mr. Michael
Temperature/Voltage:	Temp.: 23°C/ Unom.: 6 VDC
Test Specification:	according to Section15.231,average detector
Comment 1:	Dist.: 3m, Ant.: HL223
	Freq: 315.003MHz, Emax: 45.09dBµV/m, RBW: 100kHz



27/02/2006 15:31 Overview / Antenna horizontal

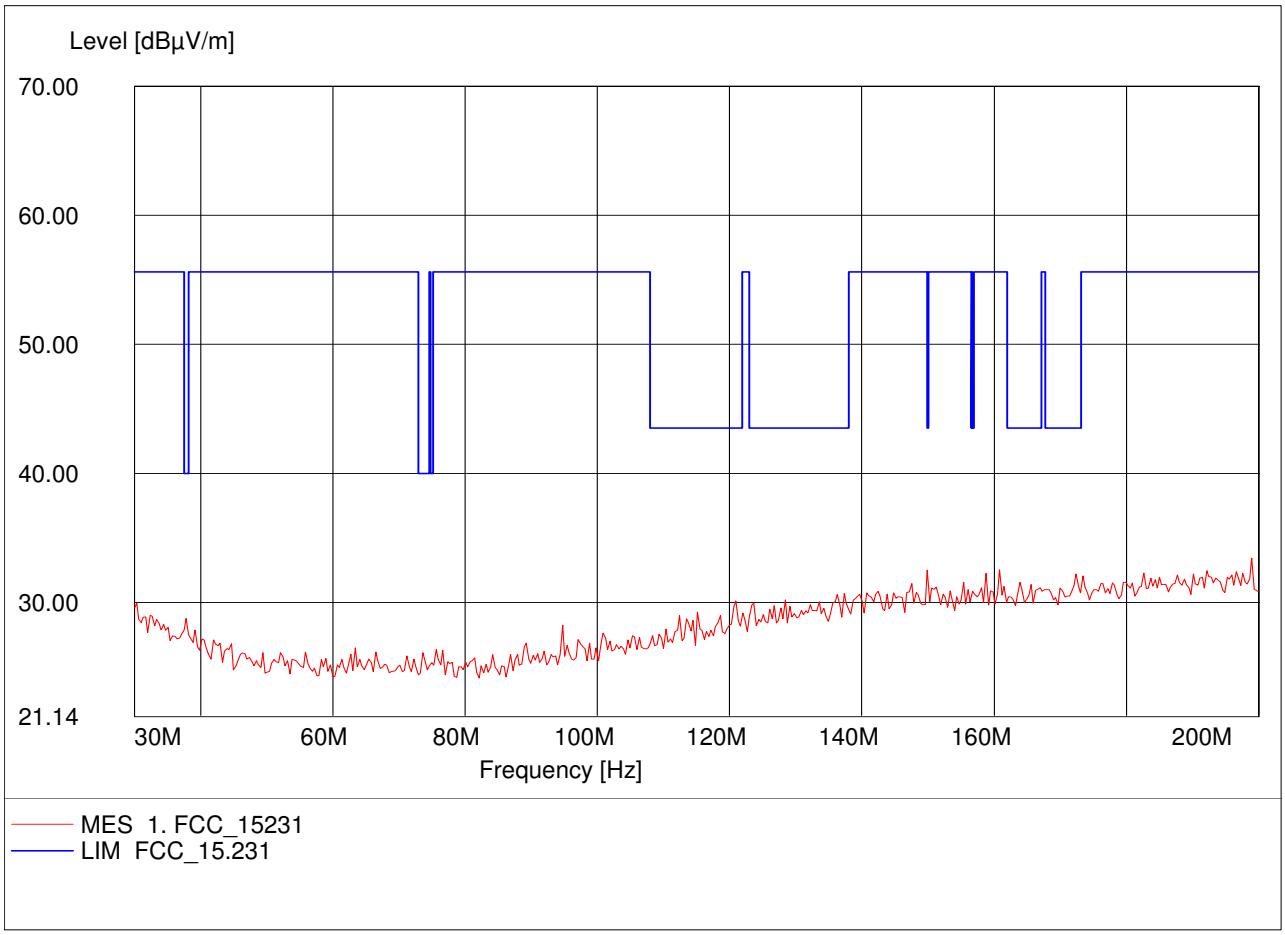
Appendix C

Radiated Spurious Emissions

Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

EUT:	GARAGE DOOR OPENER CONTROL SYSTEM
MODEL NO.:	HT-228
Approval Holder:	ZHONGSHAN HONGMAO ELECTRONICS CO.,LTD
Test Site / Operator:	ETS / Mr. Michael
Temperature/Voltage:	Temp.: 23°C/ Unom.: 6 VDC
Test Specification:	according to Section15.231,peak detector
Comment 1:	Dist.: 3m, Ant.: HK 116
	Freq: 198.978MHz, Emax: 33.41dBµV/m, RBW: 100kHz

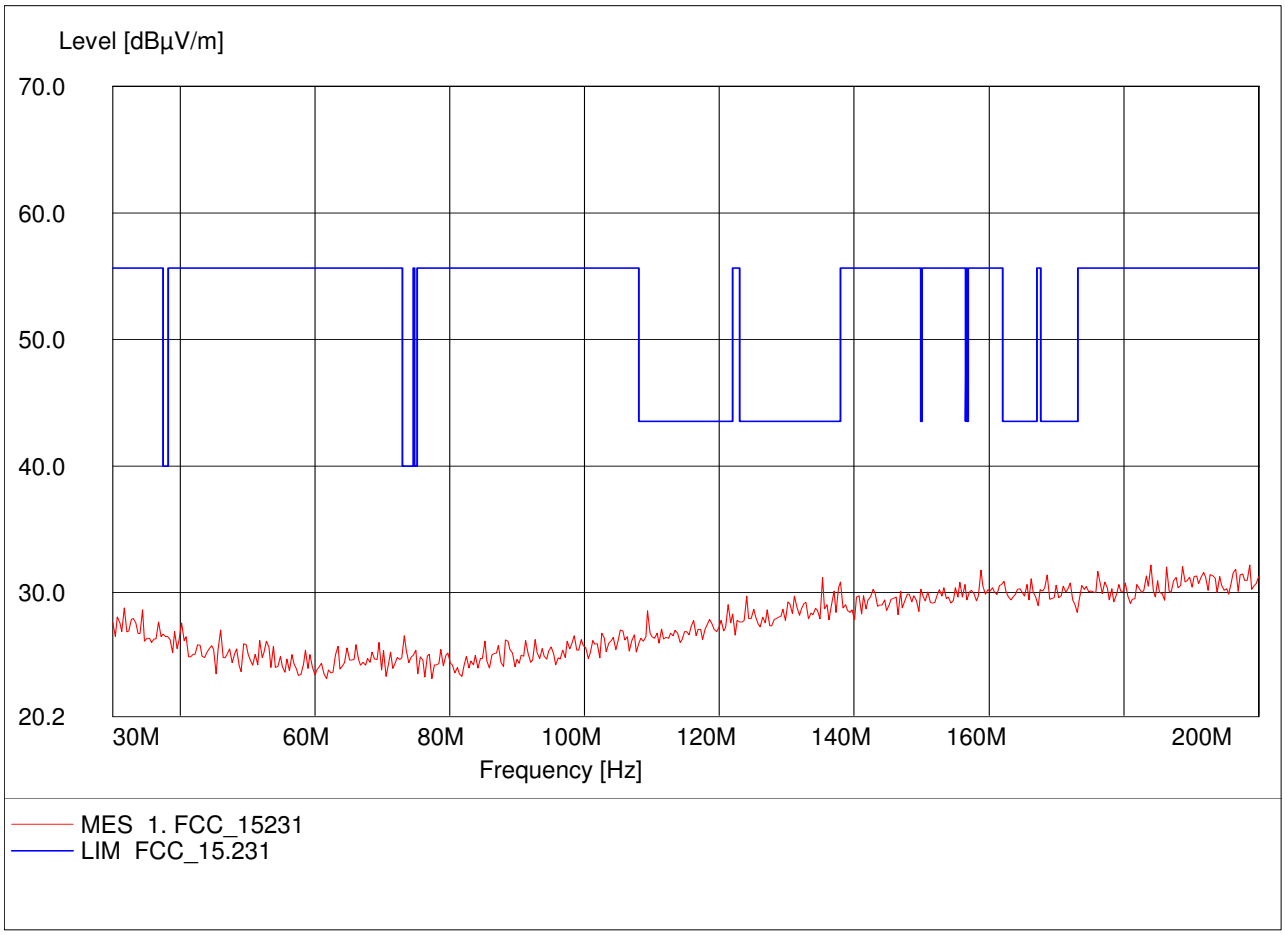


27/02/2006 15:14 Overview / Antenna vertical

Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

EUT:	GARAGE DOOR OPENER CONTROL SYSTEM
MODEL NO.:	HT-228
Approval Holder:	ZHONGSHAN HONGMAO ELECTRONICS CO.,LTD
Test Site / Operator:	ETS / Mr. Michael
Temperature/Voltage:	Temp.: 23°C/ Unom.: 6 VDC
Test Specification:	according to Section15.231,peak detector
Comment 1:	Dist.: 3m, Ant.: HK 116
	Freq: 198.637MHz, Emax: 32.18dBµV/m, RBW: 100kHz

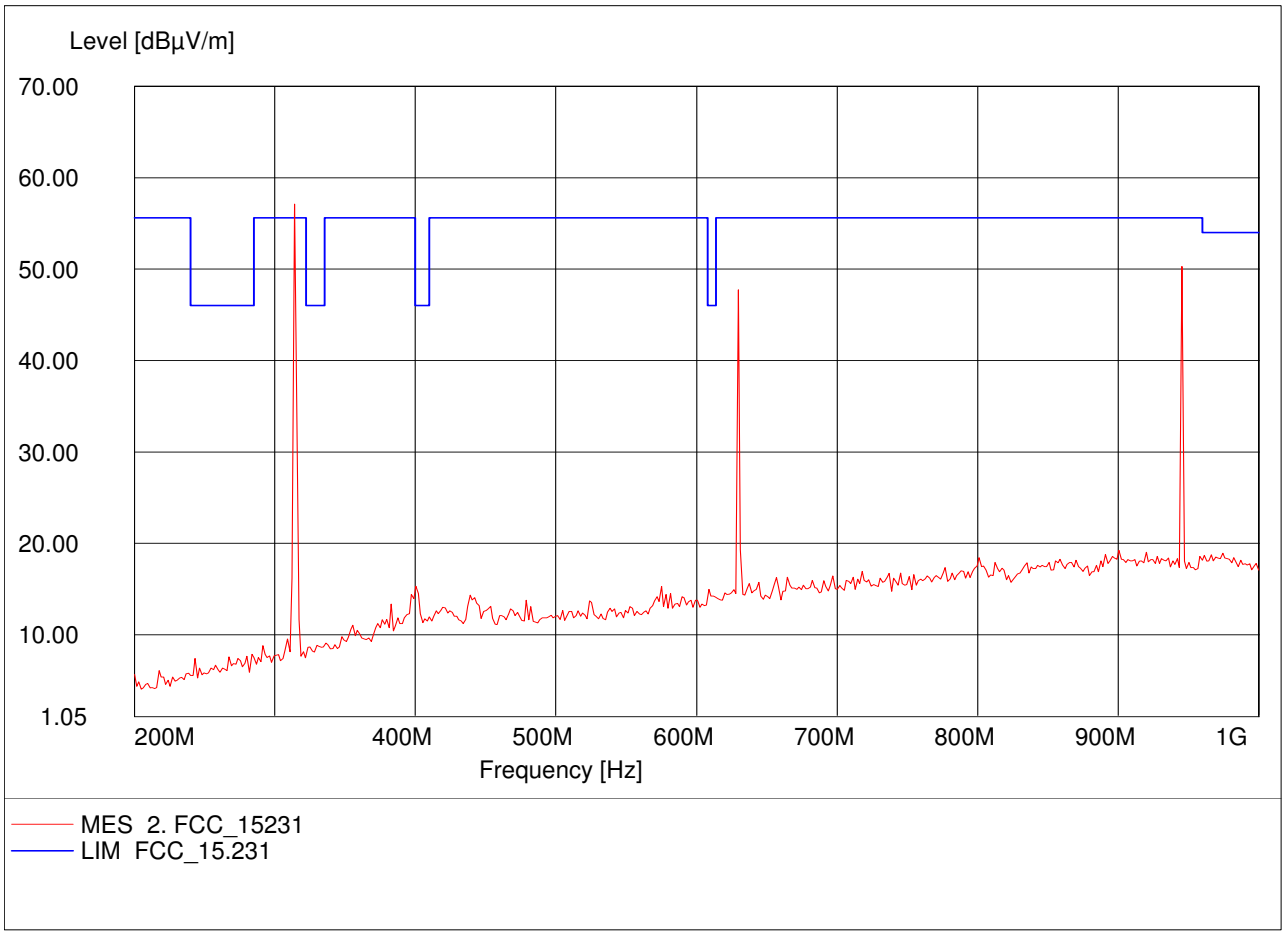


27/02/2006 15:15 Overview / Antenna horizontal

Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

EUT:	GARAGE DOOR OPENER CONTROL SYSTEM
MODEL NO.:	HT-228
Approval Holder:	ZHONGSHAN HONGMAO ELECTRONICS CO.,LTD
Test Site / Operator:	ETS / Mr. Michael
Temperature/Voltage:	Temp.: 23°C/ Unom.: 6 VDC
Test Specification:	according to Section15.231, peak detector
Comment 1:	Dist.: 3m, Ant.: HL 223, amplif.
	Freq: 313.828MHz, Emax: 57.09dBµV/m, RBW: 100kHz

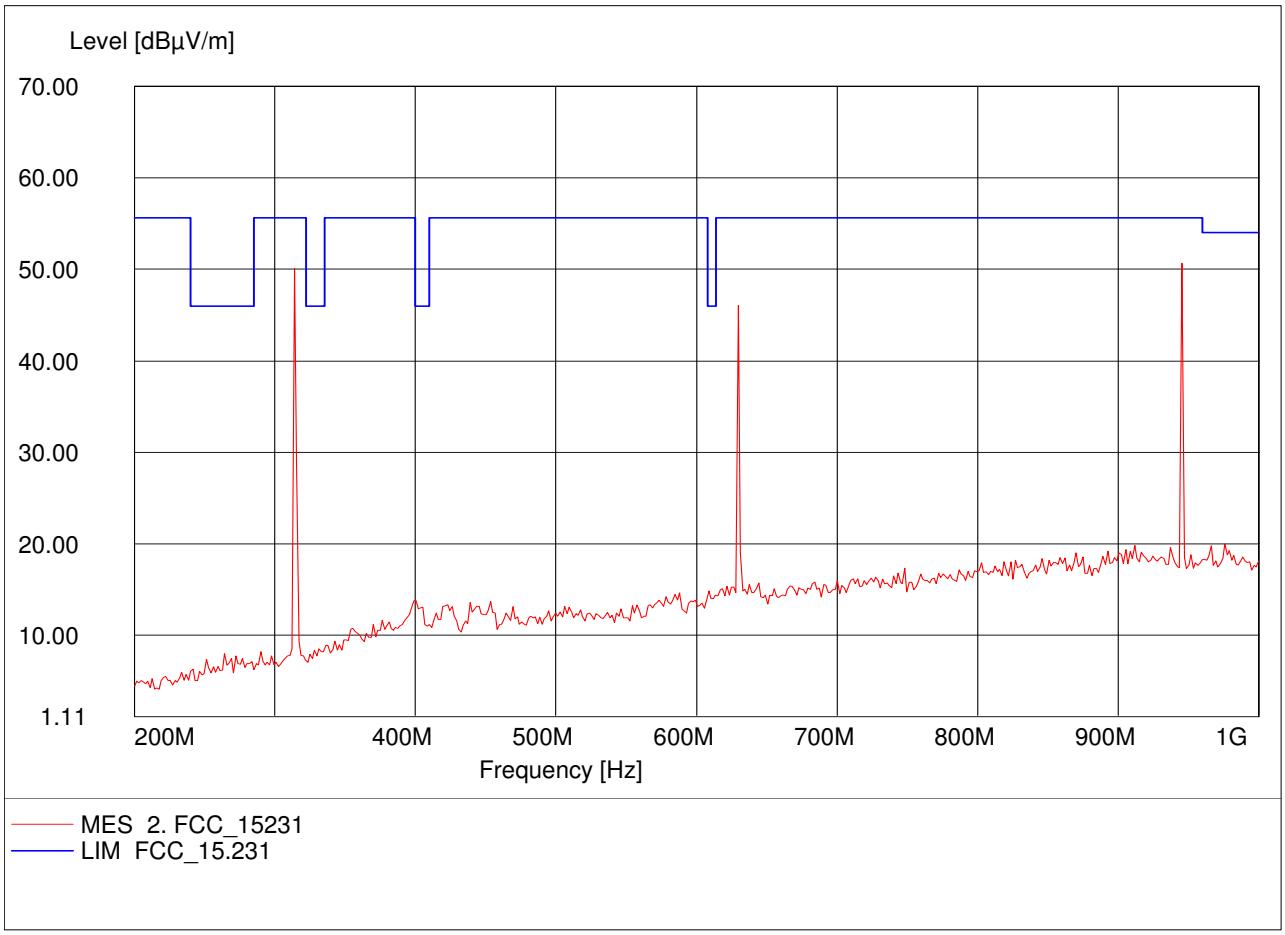


27/02/2006 11:16 Overview / Antenna vertical

Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

EUT:	GARAGE DOOR OPENER CONTROL SYSTEM
MODEL NO.:	HT-228
Approval Holder:	ZHONGSHAN HONGMAO ELECTRONICS CO.,LTD
Test Site / Operator:	ETS / Mr. Michael
Temperature/Voltage:	Temp.: 23°C/ Unom.: 6 VDC
Test Specification:	according to Section15.231, peak detector
Comment 1:	Dist.: 3m, Ant.: HL 223, amplif.
	Freq: 945.491MHz, Emax: 50.64dBµV/m, RBW: 100kHz

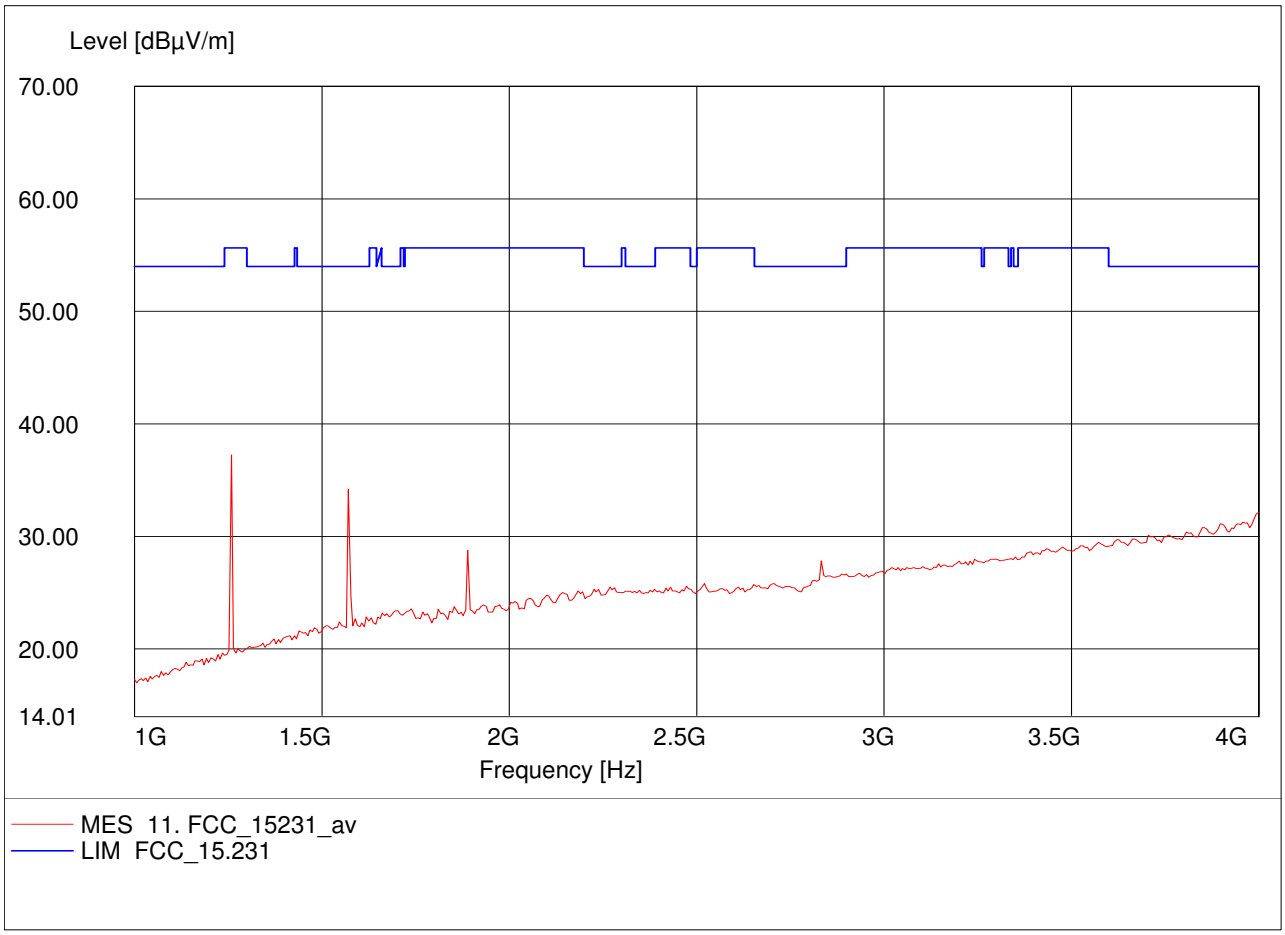


27/02/2006 11:12 Overview / Antenna horizontal

Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

EUT:	GARAGE DOOR OPENER CONTROL SYSTEM
MODEL NO.:	HT-228
Approval Holder:	ZHONGSHAN HONGMAO ELECTRONICS CO.,LTD
Test Site / Operator:	ETS / Mr. Michael
Temperature/Voltage:	Temp.: 23°C/ Unom.: 6 VDC
Test Specification:	according to Section 15.231, average detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 1.259GHz, Pmax: 37.26dBµV/m, RBW: 1MHz

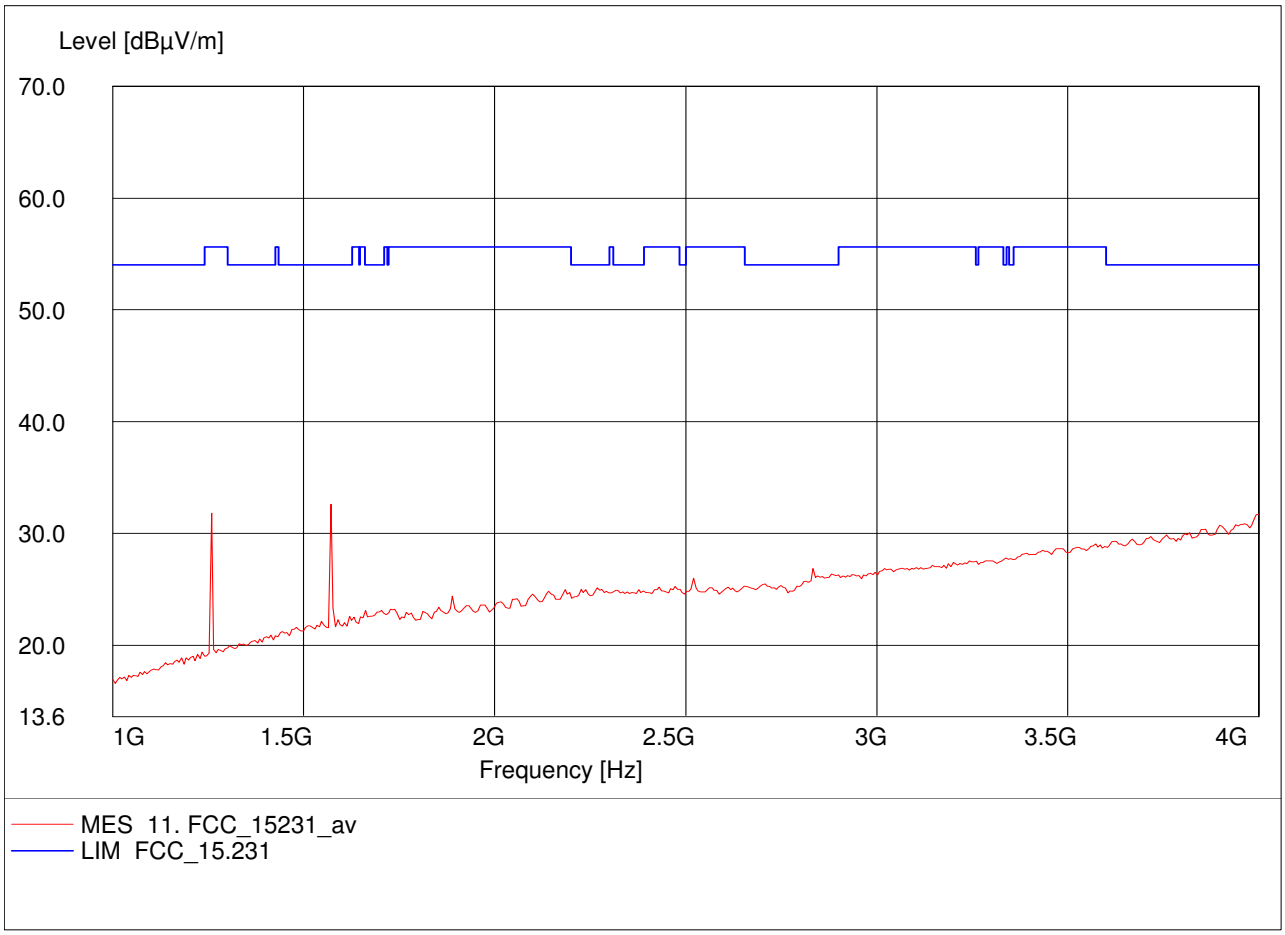


27/02/2006 14:59 Overview / Antenna vertical

Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

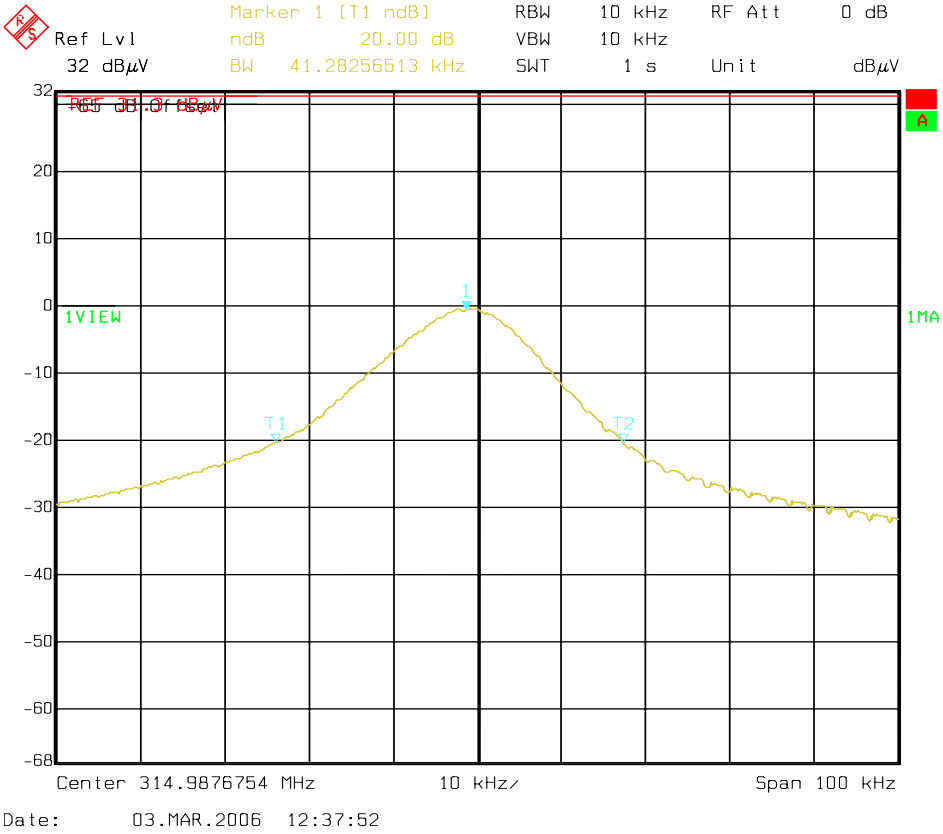
EUT:	GARAGE DOOR OPENER CONTROL SYSTEM
MODEL NO.:	HT-228
Approval Holder:	ZHONGSHAN HONGMAO ELECTRONICS CO.,LTD
Test Site / Operator:	ETS / Mr. Michael
Temperature/Voltage:	Temp.: 23°C/ Unom.: 6 VDC
Test Specification:	according to Section 15.231, average detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 1.571GHz, Pmax: 32.61dBµV/m, RBW: 1MHz



27/02/2006 15:06 Overview / Antenna horizontal

Appendix D

Emission Bandwidth


Marker 1 [T1 ndB]
ndB 20.00 dB
BW 41.28256513 kHz
RBW 10 kHz
VBW 10 kHz
SWT 1 s
RF Att 0 dB
Unit dBµV
Ref Lvl
32 dBµV
1VIEW
1MA
A
T1
T2
Center 314.9876754 MHz
10 kHz/
Span 100 kHz
Date: 03.MAR.2006 12:37:52

Appendix E

Automatically Deactivation

Title: HT-288
Comment A: Shut-off time
Date: 28.FEB.2006 02:37:10

Appendix F

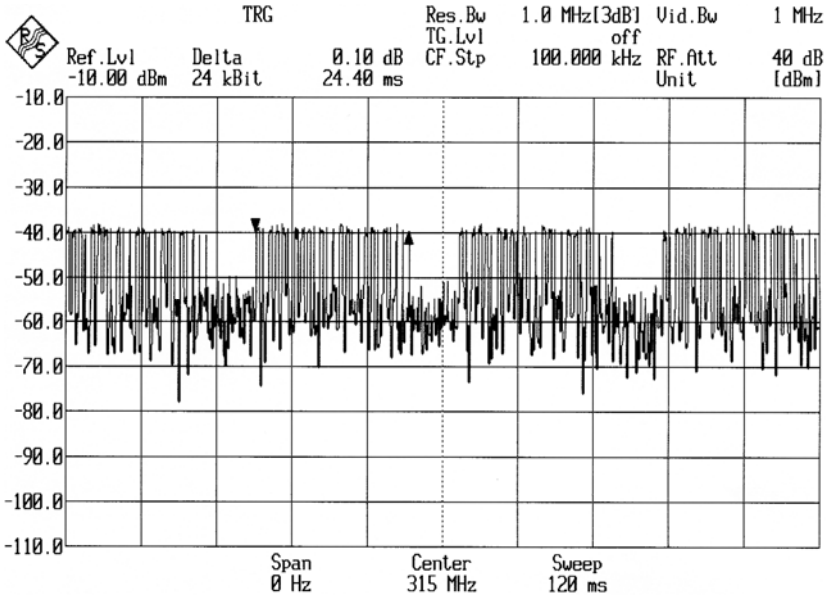
Correction for Pulse Operation (Duty Cycle)

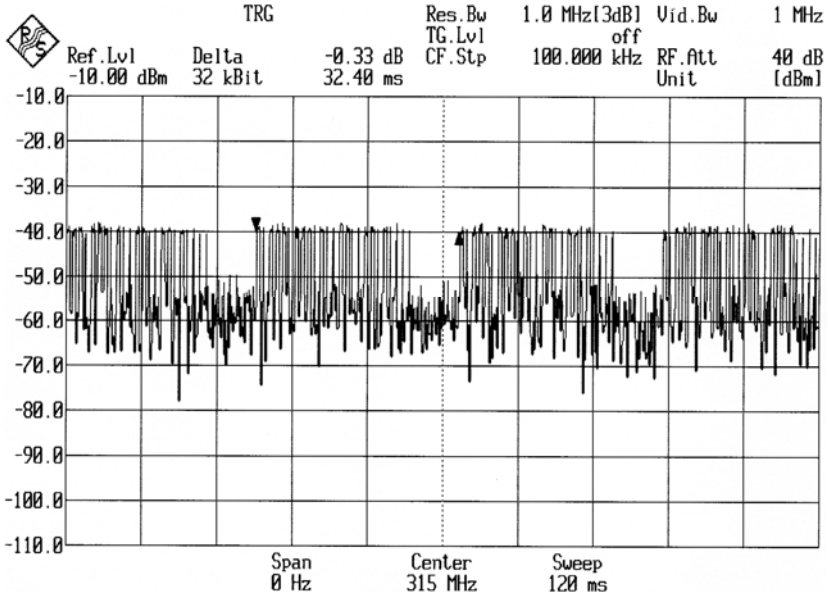
FCC ID: ST9HT-228

Correction for Pulse Operation (Duty Cycle)

FCC Part 15 Subpart 15.35(c)

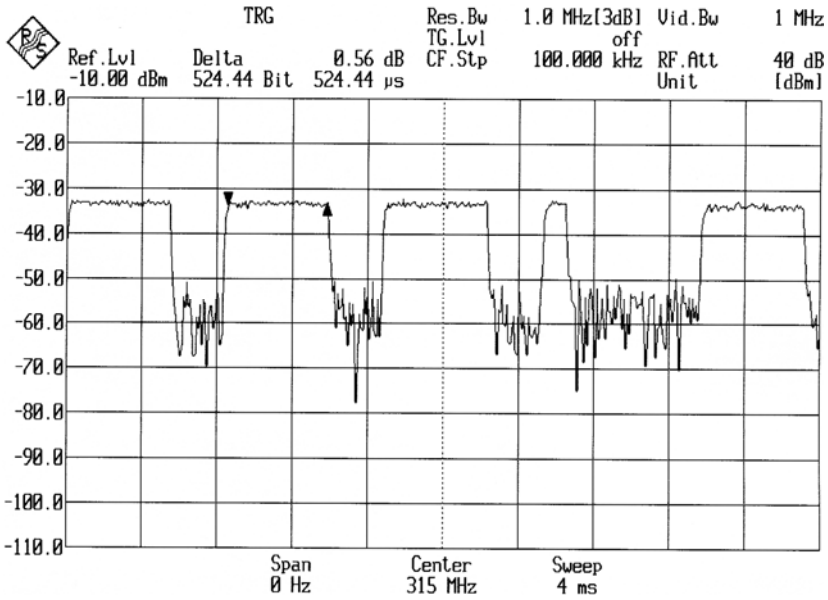
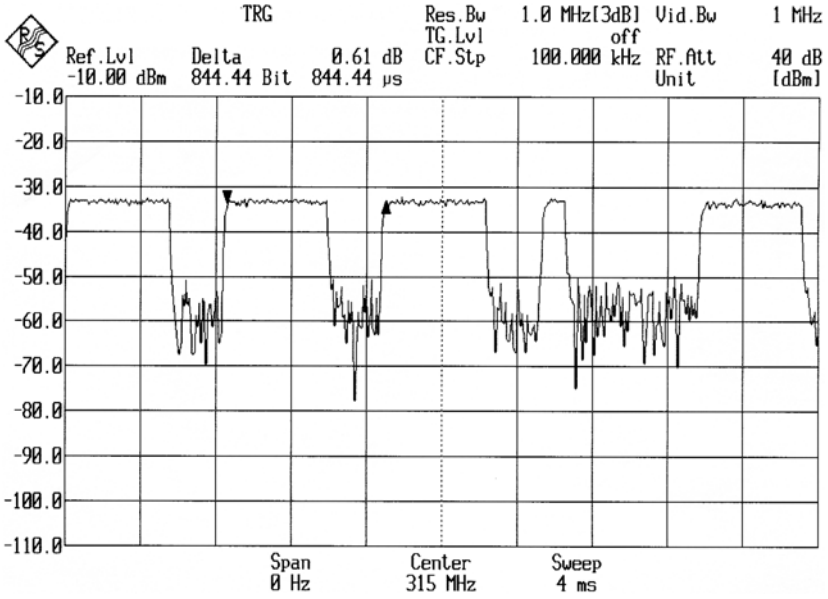
(Duration of the complete dataword)





FCC ID: ST9HT-228

Correction for Pulse Operation (Duty Cycle)

FCC Part 15 Subpart 15.35(c)

(Duration of one bit)