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T: 20.03.2000

☐ DOC:

EMC - Test - Result

for Information-Technology Equipment (IT)

Model: 20T27

Client: ECHO TOYS LTD

Product: Remote Control Transmitter

Sample: 1 of 1

Ser.- No.:

Date in: 13.03.2000

SPC **Ref.:** 21744

Technical documents (for internal use only)			
	att.	mis.	not suf.
Circuit diagram	☐	☐	☐
PCB-layout	☐	☐	☐
Certificate	☐	☐	☐
IPC	☐	☐	☐
List of countries	☐	☐	☐
Users manual	☐	☐	☐
mains transformer	☐	☐	☐
	☐	☐	☐
TUs see:			
Message:			
Modif.-cost:			

Remarks: via IECC, Hong Kong

Following tests are done		ok	not ok
IT TK	Interference voltage	☐	☐
IT1/2	Interference voltage	☐	☐
IT3/4	Interference radiation	☒	☐
IT5/6	Interference radiation	☐	☐
IT 7	Interference power	☐	☐
N 1	Harmonics	☐	☐
N 2	Voltage Fluctuations	☐	☐
N3	Voltage dips and interruptions	☐	☐
I1	Electrostatic discharge (ESD)	☐	☐
I2	Electrical fast transient (Burst)	☐	☐
I3	Electromagnetic irradiation	☐	☐
I4	Surge	☐	☐
I5	Conducted radio frequency	☐	☐
I6	Power frequency magnetic field	☐	☐

Tests done according	
☐	EN 50081-1:01.92
☐	EN 50082-1:01.92
☐	EN 50082-2:03.95
☐	EN 55015:05.96
☐	EN 61547:10.95
☐	EN 55022:08.94
☐	EN 55013:06.90
☐	EN 61000-3-3:01.95
☐	EN 61000-3-2:04.95
☐	ETS 300683
☒	FCC
	Others:
☐	
Amendments of Norms subject to O.J. / EEC publication	

	Date	Name
Effected / Counter checked	15.03.2000	AK / AL

EMC	☒ released
	☐ not released

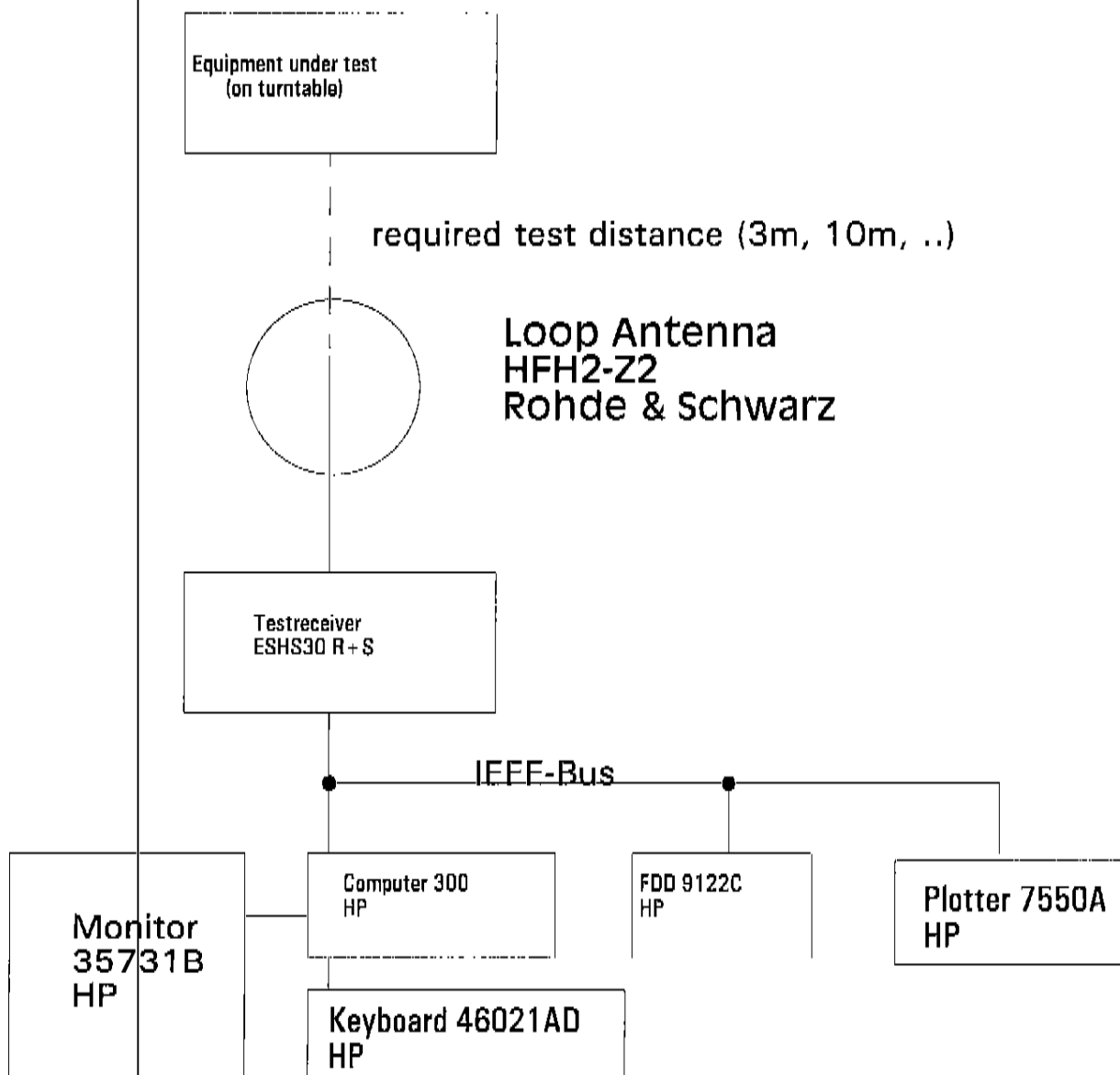
Remark to client: Please take care of running production control !

TEST EQUIPMENT LIST

Quantity	Equipment	Serial-number	Manufacturer
2	Receiver ESVS 30 Receiver ESVS 30	#82852/006 #833825/010	Rohde & Schwarz Rohde & Schwarz
3	Receiver ESHS 30 Receiver ESHS 30 Receiver ESHS 30	#839667/002 #839667/008 #39667/008	Rohde & Schwarz Rohde & Schwarz Rohde & Schwarz
2	Broadband antenna 30MHz-1000 MHz CBL 6111	#1064 #1331	Chase
1	Loop Antenna 9kHz-30MHz HFH2-Z2	#871336/48	Rohde & Schwarz
1	Turntable DT 312	#312/336	Deisel
3	Shielded room DC... 10 GHz 3,5 m x 3,5 m		Siemens
2	LISN ESH2-Z5 LISN ESH2-Z5	#831079/018 #879675/028	Rohde & Schwarz Rohde & Schwarz
1	LISN NSLK 8127	#8127230	Schwarzbeck
2	Antenna mast system AM 9104		Schwarzbeck
3	Plotter HP7550A Plotter HP7550A Plotter HP7550B	#2936A43117 #2631A46736 #3026A03892	Hewlett Packard Hewlett Packard Hewlett Packard
1	Spectrum Analyzer 8562A	#3043A05643	Hewlett Packard
3	Controller 300 Controller 300 Controller 300		Hewlett Packard Hewlett Packard Hewlett Packard
3	Floppy-Disk-Drive 9122C Floppy-Disk-Drive 9122D Floppy-Disk-Drive 9122D	#2804A04362 #2614A63990 #2339A13495	Hewlett Packard Hewlett Packard Hewlett Packard
3	Monitor 35741B Monitor 35731B Monitor 35731B	#8838J26540 #8627K33194 #8619K25961	Hewlett Packard Hewlett Packard Hewlett Packard
3	Keyboard 46021AD Keyboard 46021AD Keyboard 46021AD	#2844S60217 #2645S20154 #2706S40044	Hewlett Packard Hewlett Packard Hewlett Packard

Radiated Emission Testprocedure Magnetic field emissions

TESTFACILITY



Notes for Radiation Measurement

(Magnetic field emissions)
acc. to ANSI C63.4 - 1992

1. Measurement facility:

Measurement facility located at Frontenhausen (Germany) on field with the FCC Pursuant to Section 2.948 of the FCC Rules.

2. Distance between the EUT and measuring antenna:

3 meters.

2. Measuring instrumentations:

Rohde & Schwarz ESHS 30 Test Receiver (9 KHz - 30 MHz) with a CISPR weighting QP detector, 6 dB bandwidth set at 10 KHz.

3. Frequency range scanned:

The frequency range 9KHz - 30 MHz has been scanned. Readings of the highest emissions relating to the limit were reported as above.

4. Measuring antenna:

Loop Antenna for the frequency range 9kHz - 30MHz, connected with 10 meters coaxial cable. Cable loss of the coaxial cable included in the Antenna Factor for measurement data. The center of the loop 1m above the ground plane, positioned with its plane vertical at the specified distance and rotated about its vertical axis for maximum response at each azimuth about the EUT.

5. Arrangement of EUT:

During the test, the sample was operated at rated supply voltage and arranged for maximum emissions.

6. Measuring Procedure:

In accordance with the relevant sections of American National Standards Institute (ANSI) C63.4-1992 "Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 KHz to 40 GHz".

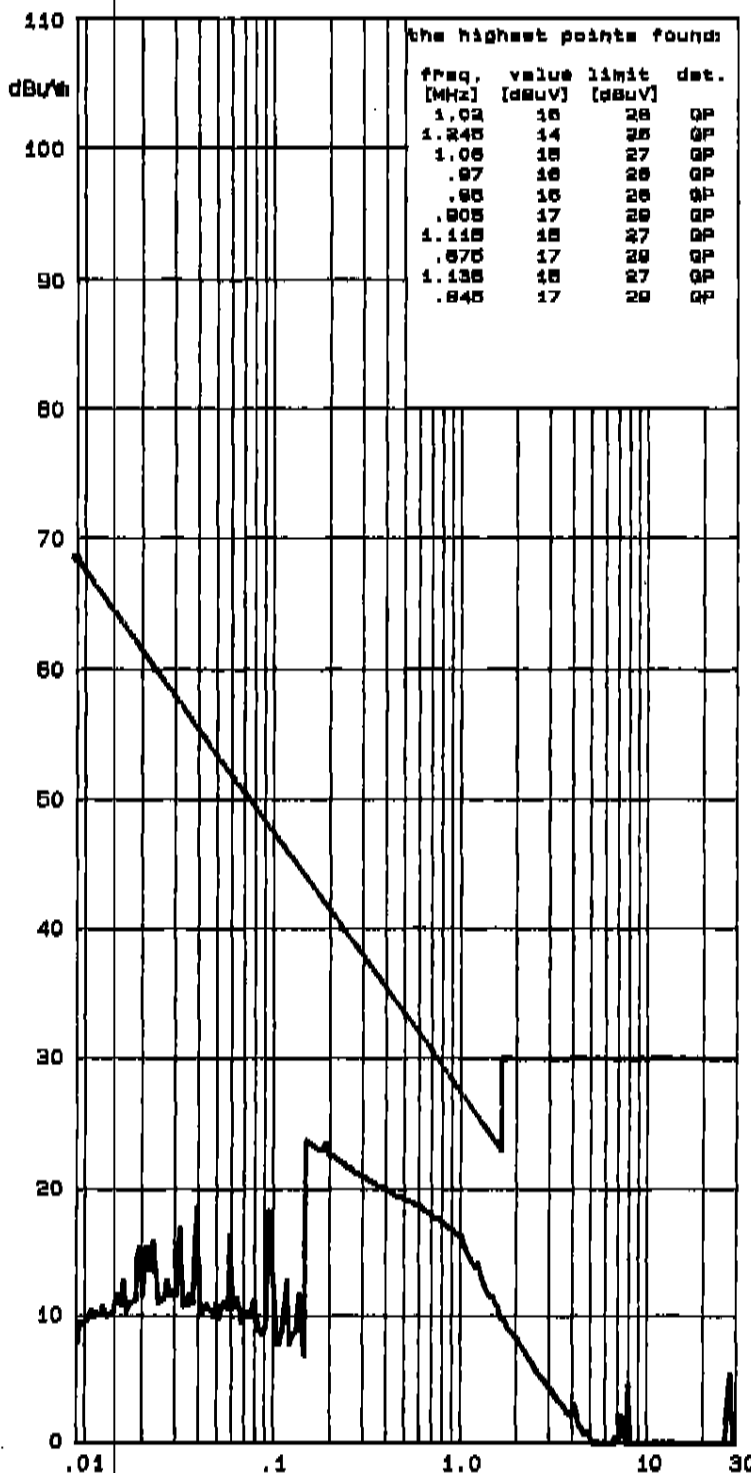


IT 3/4

Interference RADIATION 9 KHz - 30 MHz

FCC Part 15 Subpart C Section 15.227+15.209

Cabin 2



Model/System: 20T27

pkm/Ser. No: 01

Manuf./Imp.: ECHO TOYS

Date: 15.03.2000

Set under Test: RC TRANSMITTER

Test equipment:

Rohde & Schwarz ESH9-30

HFH2-Z2 Rohde&Schwarz

Connected sets:

Operating mode:

TRANSMITTING

test distance 30m

RFI suppression parts:

21744

* two dB safety margin for
type approval necessary

Operator: BL

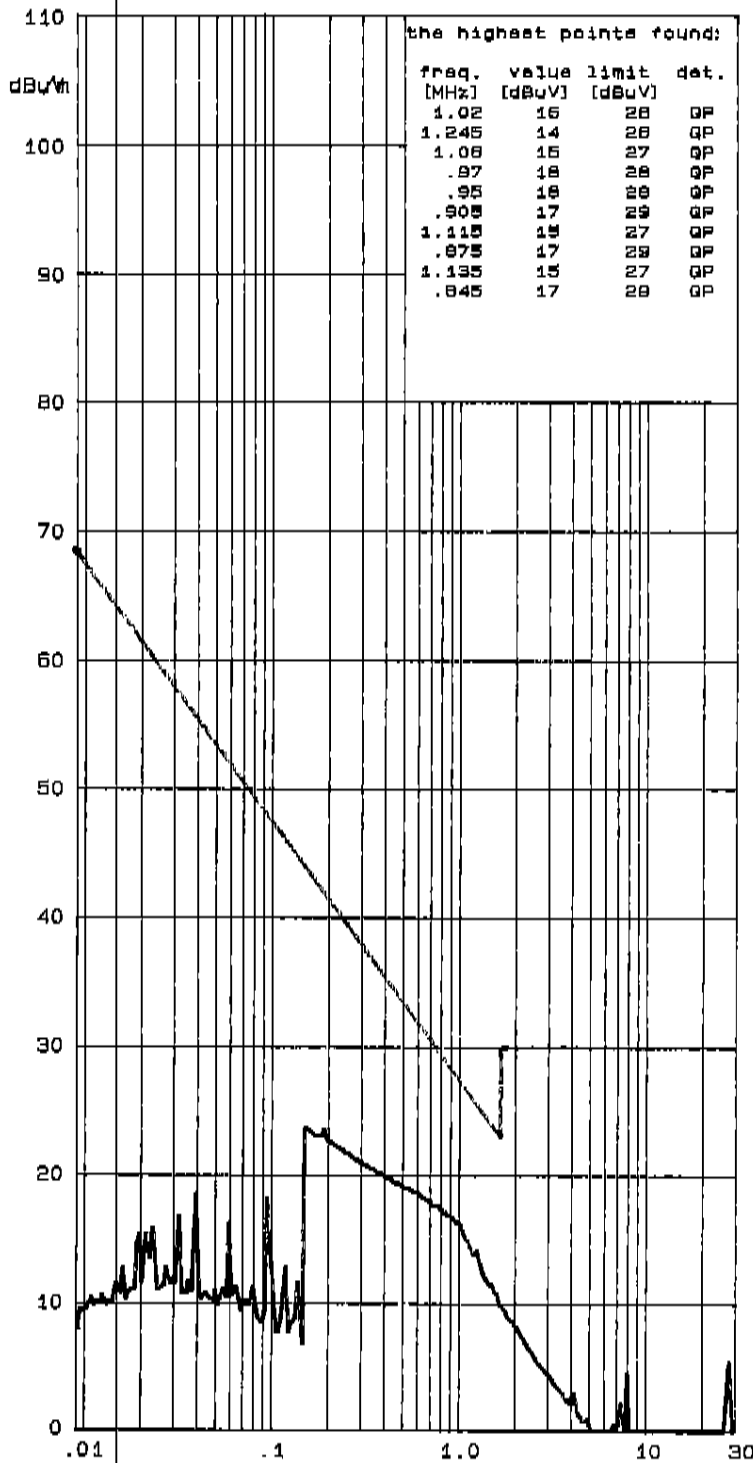
Result:



electronic GmbH
Frontenhausen

IT 3/4

Interference RADIATION 9 KHz - 30 MHz
FCC Part 15 Subpart C Section 15.227+15.209
Cabin 2



Model/System: 20T27

pkm/Ser. No: 01

Manuf./Imp.: ECHO TOYS

Date: 15.03.2000

Set under Test: AC TRANSMITTER

Test equipment:

Rohde & Schwarz ESHS-30

HFH2-Z2 Rohde&Schwarz

Connected sets:

Operating mode:

TRANSMITTING

test distance 30m

RFI suppression parts:

21744

* two dB safety margin for
type approval necessary

Operator: BL

Result:

PKM

electronic GmbH
Frontenhausen

