

## **Radio test report** **20113992300**

based on:

- FCC part 15; subpart C; section 15.209 & 15.249  
(10-1-10 edition)
- FCC part 15, subpart B, section 15.109  
(10-1-10 edition)

Remote control  
ABC-01  
ABC-01-DTCH  
ABC20

## Contents

<b>MAIN MODULE.....</b>	<b>3</b>
1..... INTRODUCTION .....	3
2..... PRODUCT .....	4
3..... TEST SCHEDULE .....	5
4..... PRODUCT DOCUMENTATION.....	5
5..... OBSERVATIONS AND COMMENTS .....	6
6..... MODIFICATIONS TO THE SAMPLE .....	6
7..... SUMMARY.....	6
8..... CONCLUSIONS.....	7
<b>TEST RESULTS MODULE.....</b>	<b>8</b>
1..... GENERAL INFORMATION .....	8
1.1 Equipment information .....	8
2..... EMISSION TESTS .....	9
2.1 Field strength of intentional signal.....	9
2.2 Field strength of unwanted emissions 0.15 - 30 MHz.....	10
2.3 Field strength of unwanted emissions 30 - 1000 MHz.....	11
2.4 Field strength of unwanted emissions > 1000 MHz.....	15
<b>USED TEST EQUIPMENT MODULE.....</b>	<b>21</b>
<b>REVISION HISTORY.....</b>	<b>23</b>

This report comprises of three modules. The total number of pages is: 23

## Main module

### 1 Introduction

This report contains the result of tests performed by:

Telefication B.V.  
Edisonstraat 12a  
6902 PK Zevenaar  
The Netherlands

*Telefication complies with the accreditation criteria for test laboratories as laid down in ISO/IEC 17025:2005. The accreditation covers the quality system of the laboratory as well as the specific activities as described in the authorized annex bearing the accreditation number L021 and is granted on 30 November 1990 by the Dutch Council For Accreditation (RvA: Raad voor Accreditatie). The contents of this test report, if reproduced, shall be copied in full, unless special consent in writing for reproduction in part is granted by Telefication. Copyright of this test report is reserved to Telefication.*

Ordering party:

Company name : Coulisse B.V.  
Address : Vonderweg 48  
Zipcode : 7468 DC  
City/town : Enter  
Country : The Netherlands  
Date of order : 1 September 2011

## 2 Product

A sample of the following product was submitted for testing:

Product description	:	Remote control
Manufacturer	:	Coulisse B.V.
Trade mark	:	Coulisse
Type designation	:	ABC-01
FCC ID	:	ZY4ABC01
Hardware version	:	REVG
Serial number	:	--
Software release	:	--

### *Variant 1*

Product description	:	Remote control
Manufacturer	:	Coulisse B.V.
Trade mark	:	Coulisse
Type designation	:	ABC-01-DTCH
Hardware version	:	REVG
Serial number	:	--
Software release	:	--

### *Variant 2*

Product description	:	Remote control
Manufacturer	:	Coulisse B.V.
Trade mark	:	Coulisse
Type designation	:	ABC20
Hardware version	:	REVG
Serial number	:	--
Software release	:	--

### 3 Test schedule

Tests are carried out in accordance with the specification detailed in chapter 7 “Summary” of this report.

Tests are carried out at the following location:

- Telefication, Zevenaar

The samples of the product were received on:

- 16 August 2011

Tests are carried out on:

- 16 August and 17 August 2011

### 4 Product documentation

For production of this report the following product documentation was used:

Description	Identification	Date
Manual	ABC-01_R0_GB0.pdf	2011-10-04
FCC manual	FCCManualZY4ABC01.pdf	2011-10-04
Circuit diagram	Remote4Channel REVG.pdf	2011-09-28
Bill Of Materials	RemoteRevGBOM.txt	2011-09-28

The above-mentioned documentation will be filed at Telefication for a period of 10 years following the issue of this test report.

## **5 Observations and comments**

None.

## **6 Modifications to the sample**

No modifications were made to the sample.

## **7 Summary**

The product is intended for use in the following application area(s):

INTENTIONAL RADIATOR OPERATING IN THE FREQUENCY BAND 2400 - 2483.5 MHz

The sample is tested according to the following specification(s):

FCC part 15; subpart C; section 15.209 & 15.249 (10-1-10 edition)

FCC part 15, subpart B, section 15.109 (10-1-10 edition)

## 8 Conclusions

The samples of the product showed **NO NON-COMPLIANCES** to the specification stated in chapter 7 of this report.

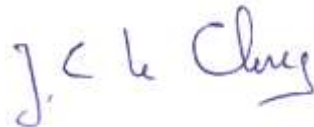
The results of the tests as stated in this report, are exclusively applicable to the product item as identified in this report. Telefication accepts no responsibility for any stated properties of product items in this test report, which are not supported by the tests as specified in chapter 7 “*Summary*”

All tests are performed by:

name : ing. J.C. le Clercq

function : Test Engineer

signature :

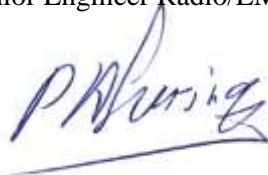


Review of test report by:

name : ing. P.A. Suringa

function : Senior Engineer Radio/EMC

signature :



The above conclusions have been verified by the following signatory:

Date : 18 October 2011

name : ing. A. van der Valk

function : Manager Laboratory

signature :



## Test results module

### 1 General information

#### 1.1 Equipment information

Rated RF output power	n.a., integral antenna
Rated radiated RF power	1 mW
Operating frequency range	2402 MHz to 2480 MHz (24 channels)
Modulation	GFSK
Modulation bit rate	--
ITU emission class	--
Duty cycle (during testing)	5 %
FCC ID	ZY4ABC01



## 2 Emission tests

### 2.1 Field strength of intentional signal

Compliance standard : FCC part 15, subpart C, section 15.249 (a) & (e)  
 Method of test : ANSI C63.4-2003, sections 5.5 & 8.2.4, Annex H.4j)

Test results :

*(only the highest of the two polarizations are stated)*

#### Peak field strength:

Frequency (MHz)	Test result @ 3 m distance (dBμV/m) (PK)	Polarisation	Limit (dBμV/m)
2402	94.5	H	114
2440	94.1	H	114
2480	95.7	H	114

#### Average field strength\*:

Frequency (MHz)	Test result @ 3 m distance (dBμV/m) (AV)	Polarisation	Limit (dBμV/m)
2402	76.2	H	94
2440	75.8	H	94
2480	77.4	H	94

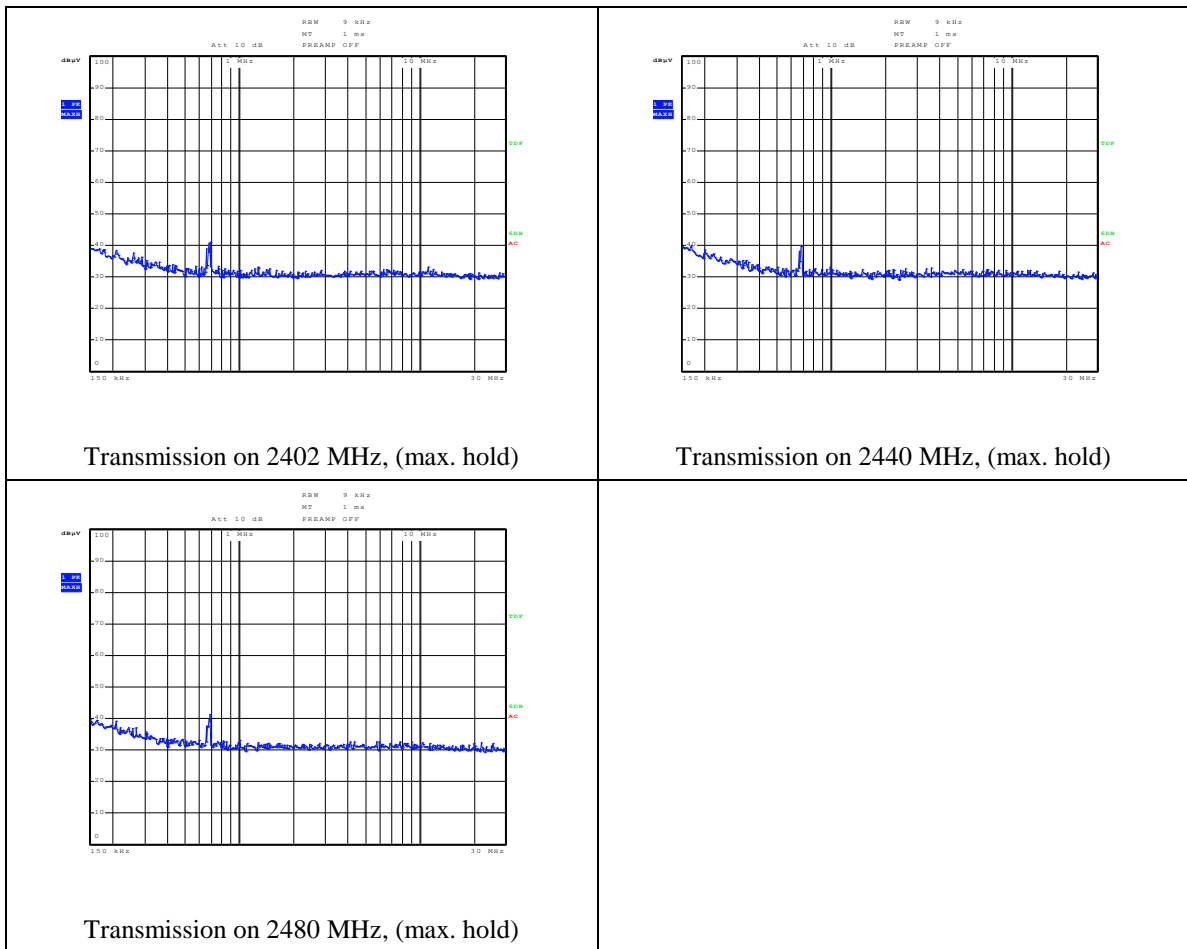
\* based on duty cycle factor of 5.0 %

Measurement uncertainty	+4.5 dB / -6.1 dB.
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Measurement equipment used (item numbers refer to section “used test equipment”)	2, 16, 24, 37, 39, 48, 49.
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## 2.2 Field strength of unwanted emissions 0.15 - 30 MHz

Compliance standard : FCC part 15, subpart C, section 15.209 (a) & 15.249 (d)  
 Method of test : ANSI C63.4-2003, sections 5.5, 8.2.3, 8.2.4 & 8.3.1.1;  
 FCC part 15, subpart A, section 15.31(m), 15.33, 15.35.  
 EUT condition : transmitting  
 Test results :

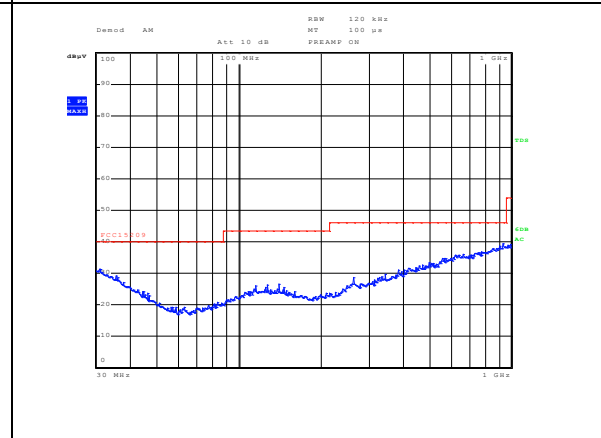
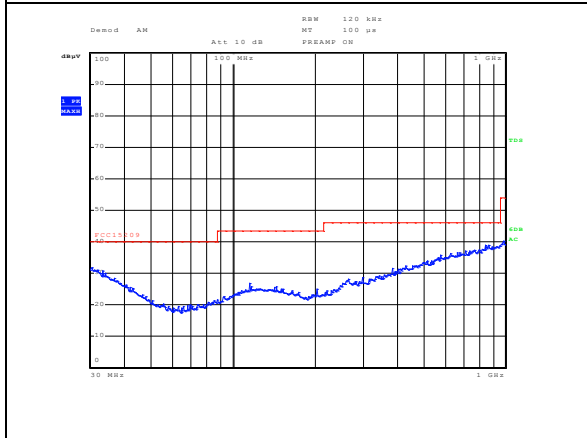
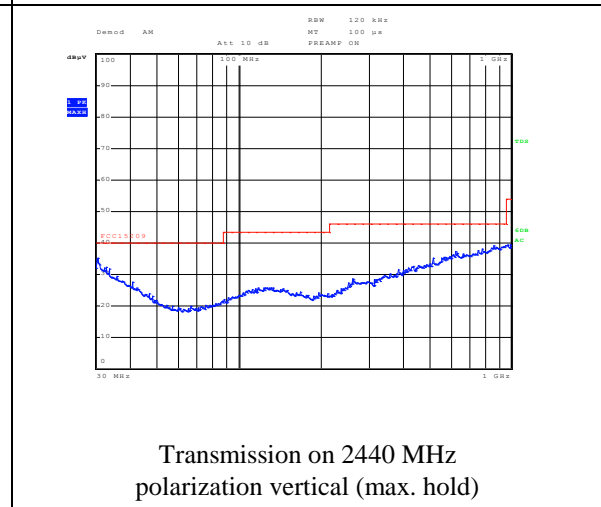
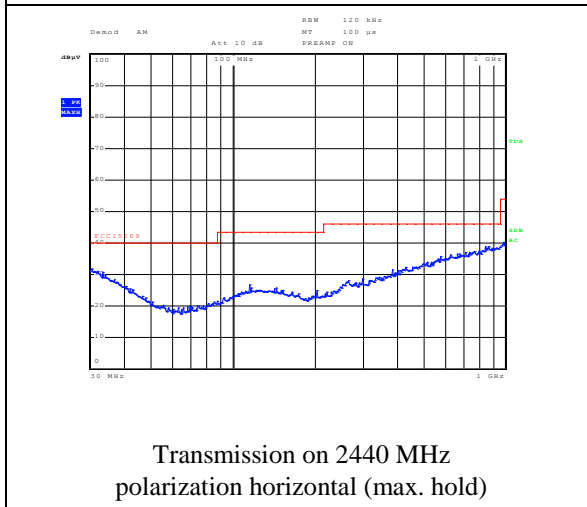
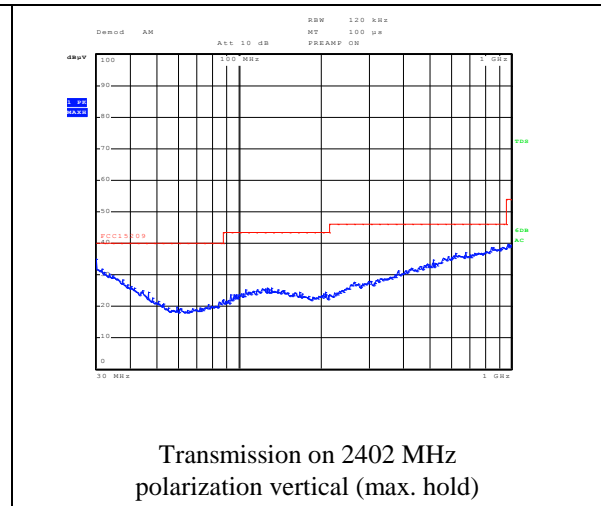
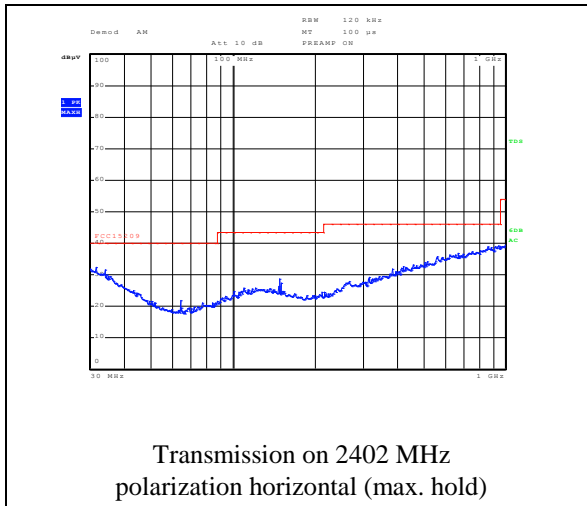


Measurement uncertainty	+3.0 dB / -2.5 dB.
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Measurement equipment used (item numbers refer to section “used test equipment”)	28, 34, 43.
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### 2.3 Field strength of unwanted emissions 30 - 1000 MHz

Compliance standard : FCC part 15, subpart C, section 15.209 (a) & 15.249 (d)  
 Method of test : ANSI C63.4-2003, sections 5.5, 8.2.3, 8.2.4 & 8.3.1.1;  
 FCC part 15, subpart A, section 15.31(m), 15.33, 15.35.  
 EUT condition : transmitting  
 Test results :

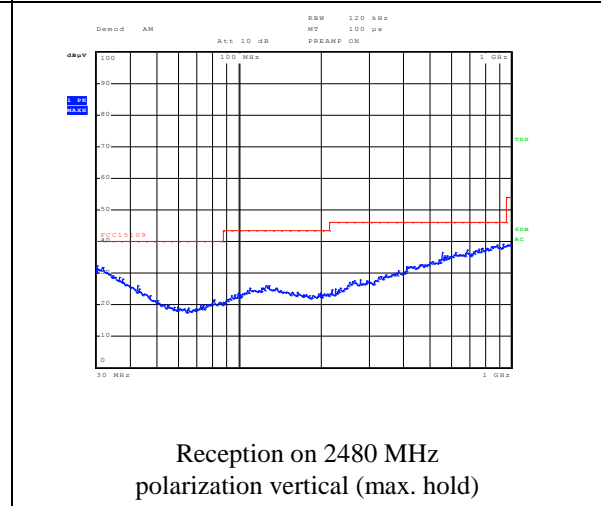
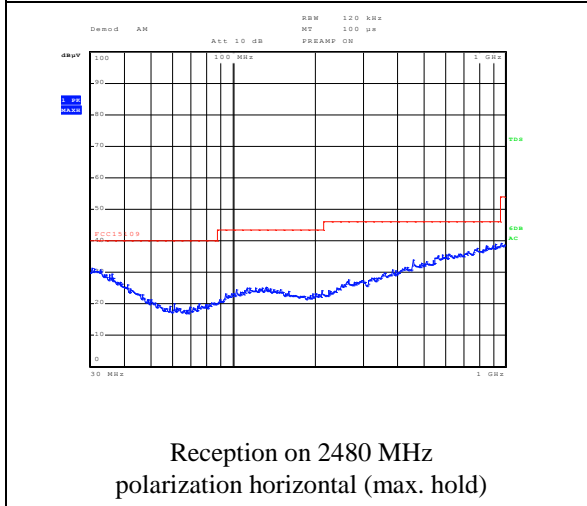
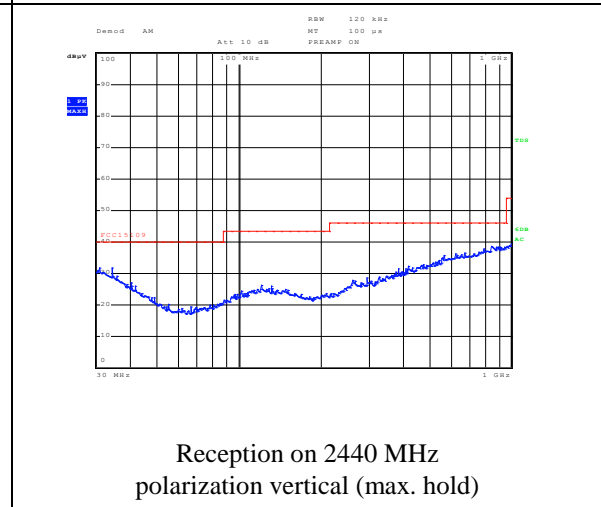
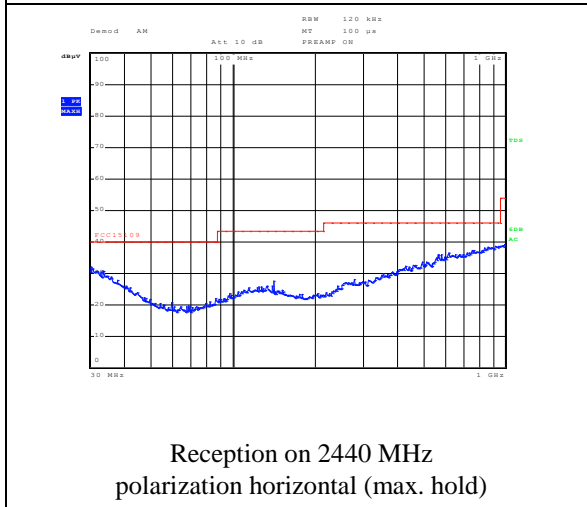
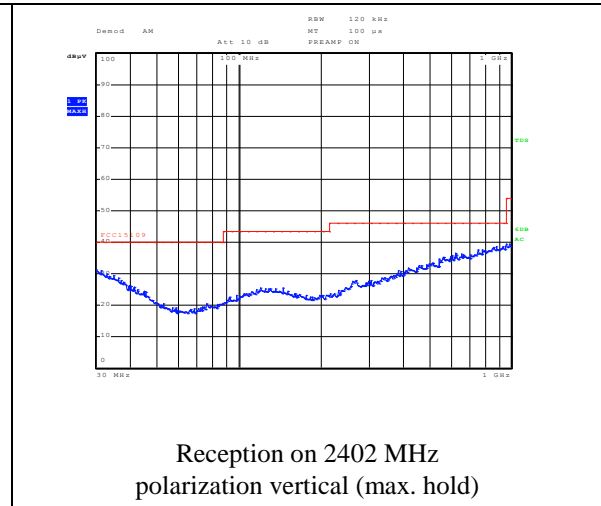
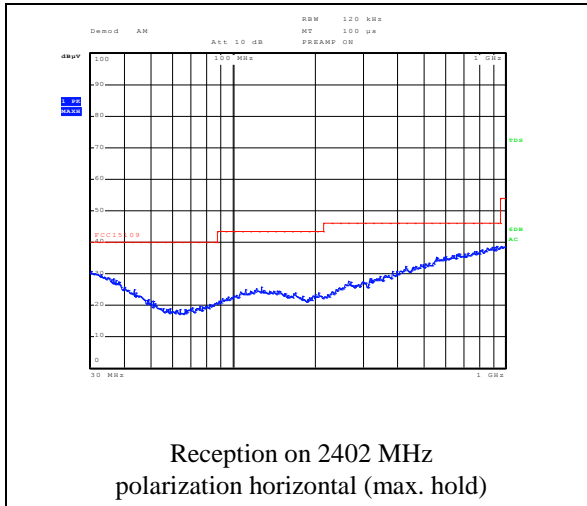


Transmission on 2480 MHz polarization horizontal (max. hold)	Transmission on 2480 MHz polarization vertical (max. hold)
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Measurement uncertainty	Vertical polarisation:	
	30 – 200 MHz	5.4 dB
	200 -1000 MHz	4.6 dB
	Horizontal polarisation:	
	30 – 200 MHz	4.5 dB
	200 -1000 MHz	3.6 dB

Measurement equipment used (item numbers refer to section “used test equipment”)	34, 36, 43, 50, 51.
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Compliance standard : FCC part 15, subpart B, section 15.109  
 Method of test : ANSI C63.4-2003, sections 5.5, 8.2.3, 8.2.4 & 8.3.1.1;  
 FCC part 15, subpart A, section 15.31(m), 15.33, 15.35.  
 EUT condition : receiving  
 Test results :



Measurement uncertainty	+4.5 dB / -6.1 dB.
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Measurement equipment used (item numbers refer to section “used test equipment”)	34, 36, 43, 50, 51.
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Measurement uncertainty	Vertical polarisation:	
	30 – 200 MHz	5.4 dB
	200 -1000 MHz	4.6 dB
	Horizontal polarisation:	
	30 – 200 MHz	4.5 dB
	200 -1000 MHz	3.6 dB

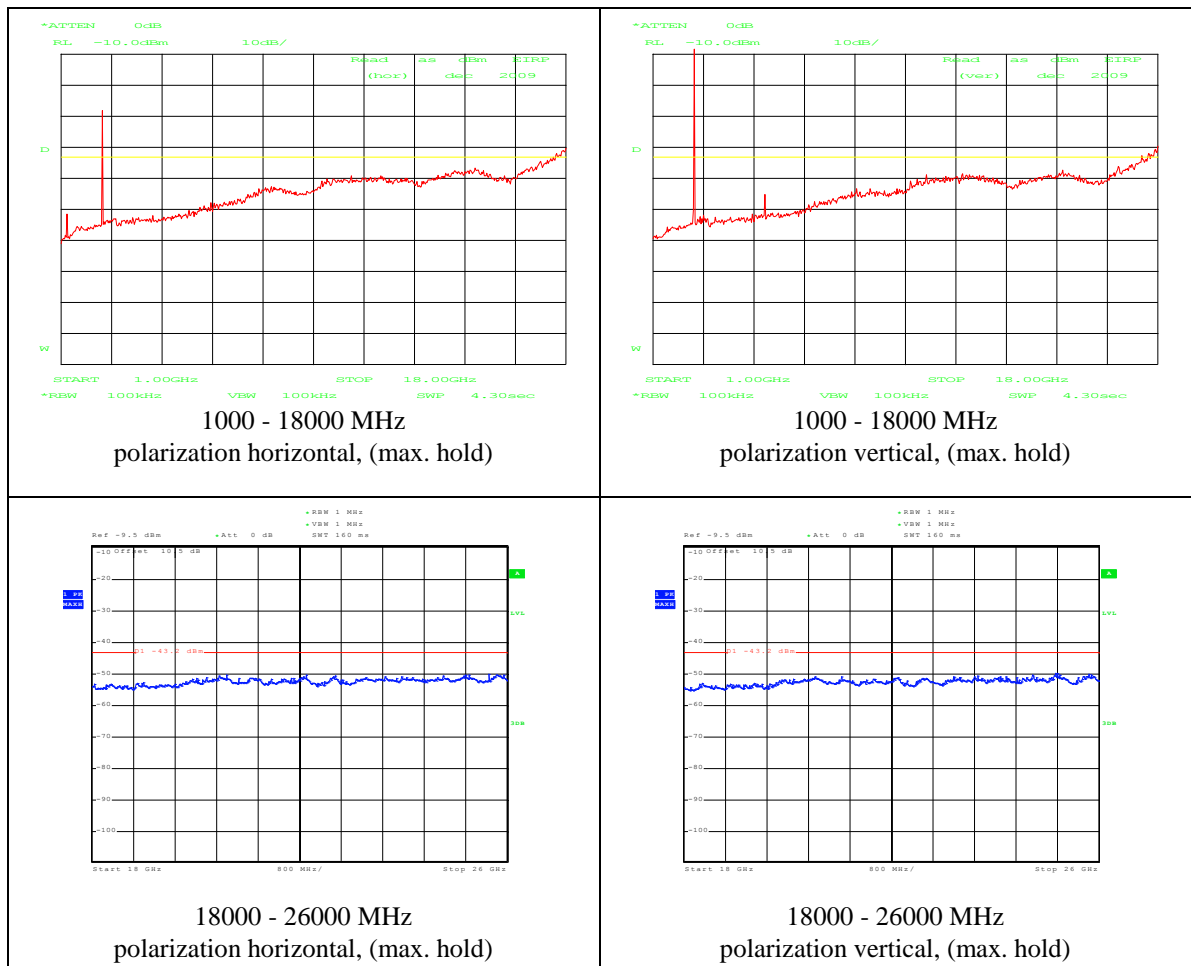
Measurement equipment used (item numbers refer to section “used test equipment”)	34, 36, 43, 50, 51, 53.
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## 2.4 Field strength of unwanted emissions > 1000 MHz

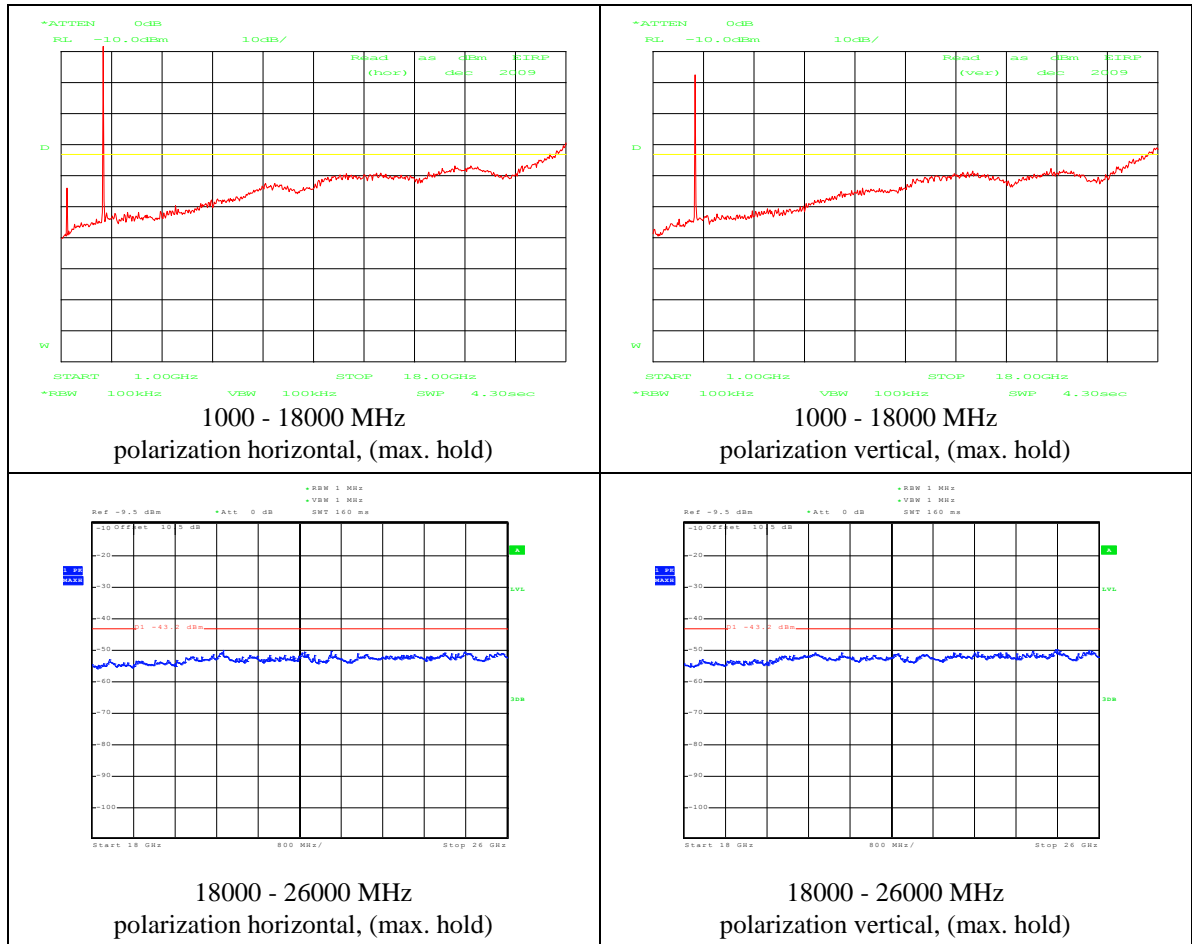
Compliance standard : FCC part 15, subpart C, section 15.209 (a)& 15.249 (a) & (e)  
 Method of test : ANSI C63.4-2003, sections 5.5, 8.2.3, 8.2.4 & 8.3.1.2;  
 FCC part 15, subpart A, section 15.31(m), 15.33, 15.35;  
 Measuring distance : 3 m  
 EUT condition : transmitting  
 Test results :

### Unwanted emissions transmitter (peak values):

Low channel (2402 MHz)

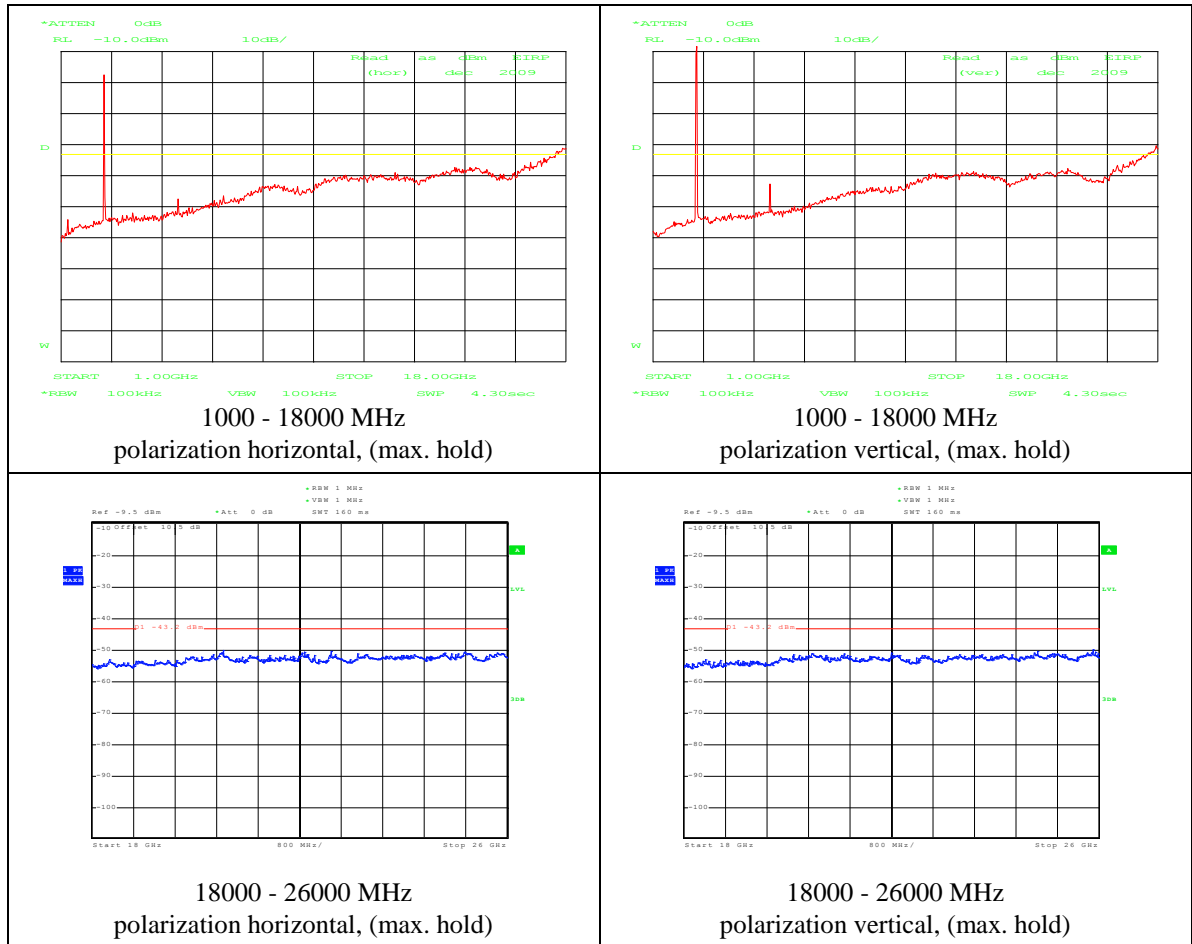


Mid channel (2440 MHz)





High channel (2480 MHz)



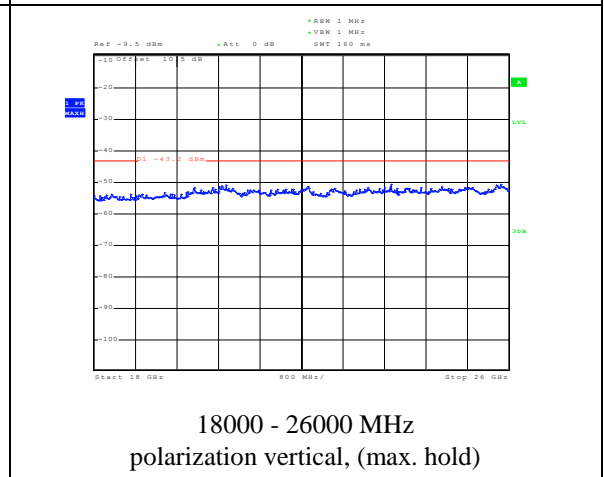
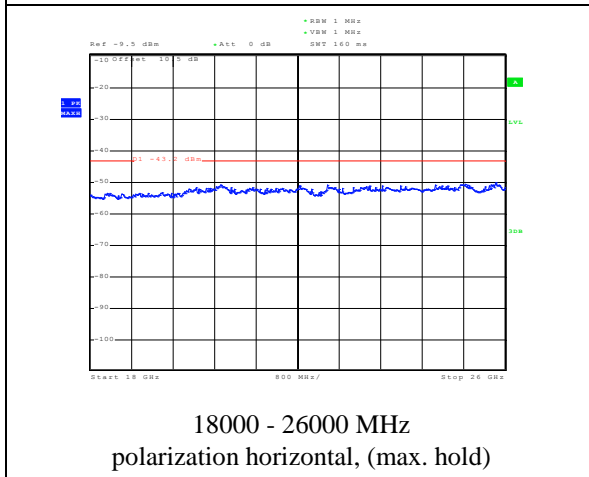
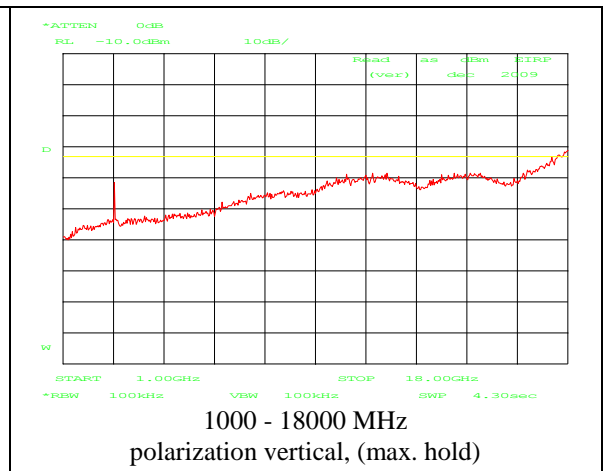
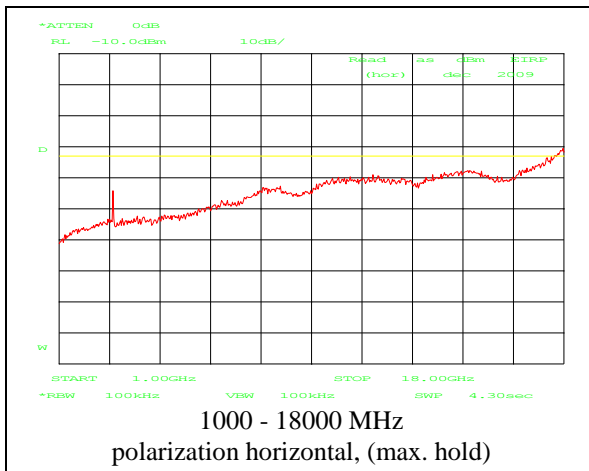
Measurement uncertainty	+4.5 dB / -6.1 dB.
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Measurement equipment used (item numbers refer to section “used test equipment”)	2, 16, 24, 31, 46.
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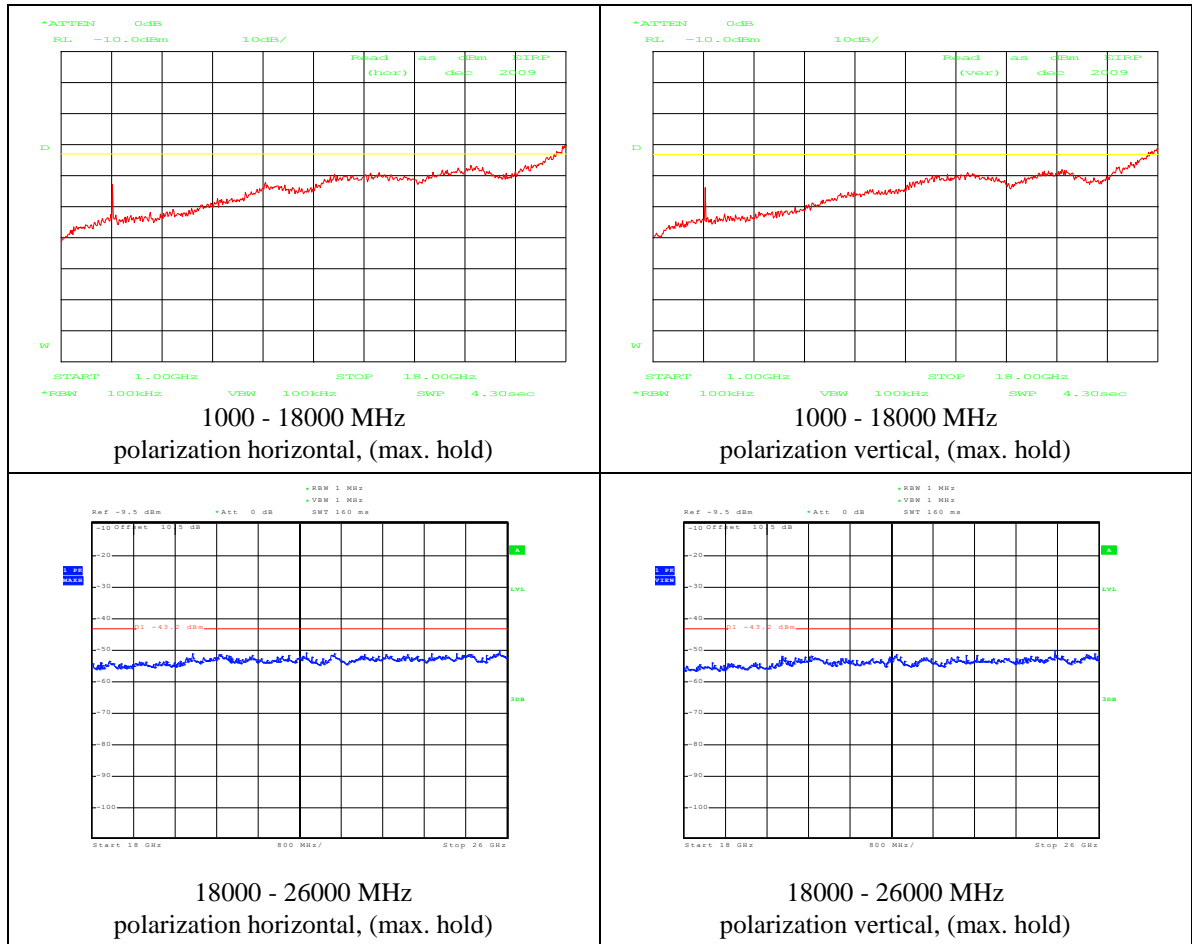
Compliance standard : FCC part 15, subpart B, section 15.109 (a)  
 Method of test : ANSI C63.4-2003, sections 5.5, 8.2.3, 8.2.4 & 8.3.1.2;  
 FCC part 15, subpart A, section 15.31(m), 15.33, 15.35;  
 EUT condition : receiving  
 Measuring distance : 3 m  
 Test results :

**Unwanted emissions receiver (peak values):**

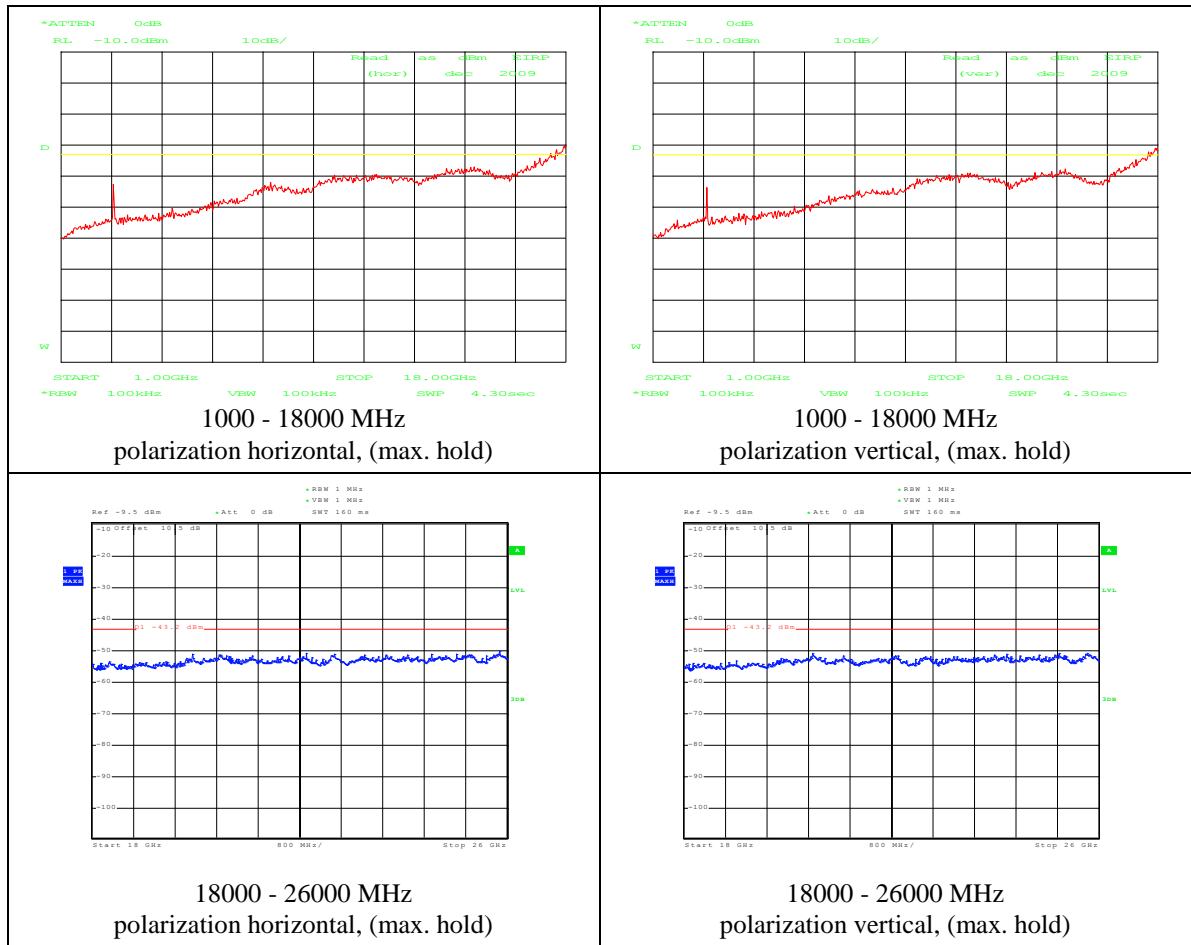
*Low channel (2402 MHz)*



Mid channel (2440 MHz)



High channel (2480 MHz)



Measurement uncertainty	+4.5 dB / -6.1 dB.
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Measurement equipment used (item numbers refer to section “used test equipment”)	2, 16, 24, 31, 46.
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## Used test equipment module

Item	Description	Manufacturer	Type	ID
1	Signal generator	Marconi	2042	TE 00030
2	Preamplifier 1 – 26.5 GHz	HP	8449B	TE 00092
3	Preamplifier 1 – 26.5 GHz	HP	8449B	TE 00093
4	Pre-amplifier 10 dB	R & S	ESV-Z3	TE 00097
5	Pre-amplifier 10 dB	R & S	ESV-Z3	TE 00098
6	Spectrum analyser	HP	8562E	TE 00099
7	Microwave amplifier	HP	HP8349A	TE 00124
8	Digital multimeter	HP	34401A	TE 00143
9	Digital multimeter	HP	3438A	TE 00215
10	Step attenuator	HP	8494A	TE 00233
11	Step attenuator	HP	8496A	TE 00234
12	Power sensor	HP	8484A	TE 00245
13	Power meter	HP	435B	TE 00249
14	Power meter	HP	437B	TE 00354
15	Power sensor	HP	8481A	TE 00355
16	Spectrum analyser	HP	8563E	TE 00359
17	Audio analyzer	HP	8903A	TE 00373
18	Signal generator	Marconi	2042	TE 00379
19	Digital thermometer	Fluke	51	TE 00388
20	Step attenuator	HP	8491A	TE 00403
21	Signal generator	HP	8642B	TE 00424
22	Signal generator	Marconi	2042	TE 00427
23	Spectrum analyser	HP	8563E	TE 00481
24	Horn antenna	EMCO	3115	TE 00531
25	Horn antenna	EMCO	3116	TE 00533
26	Biconilog antenna	EMCO	3143	TE 00700
27	Climate chamber	CTS	C-40/350	TE 00741
28	Active loop antenna	R & S	HFH2-Z2	TE 00746
29	Horn antenna	Quinstar	QWH-1900-AA	TE 00747

Item	Description	Manufacturer	Type	ID
30	Step attenuator	HP	8491A	TE 00787
31	Standard gain horn	Flann	20240-25	TE 00818
32	Power supply for amplifier	R & S	HZ-9	TE 00830
33	Power supply	Delta Elektronika	E030-1	TE 00851
34	Semi Anechoic Room	Comtest	--	TE 00861
35	Power supply	Delta Elektronika	MST030-10	TE 00886
36	Biconilog antenna	Chase	CBL6112A	TE 00967
37	Anechoic chamber	Euroshield	RFB-F-100	TE 01064
38	Triple loop antenna	Telefication	--	TE 01066
39	Temp / RH logger	MicroLog	EC 650	TE 01114
40	Broadband resistive power divider	Weinschel	1506A	TE 01120
41	Broadband resistive power divider	Weinschel	1506A	TE 01122
42	Spectrum analyser	R & S	FSP 40	TE 11125
43	EMI test receiver	R & S	ESCI	TE 11128
44	Radio Communication Service Monitor	R & S	CMS54	TE 11129
45	Pre-amplifier	Miteq	JS4-18004000	TE 11131
46	Low noise amplifier	Miteq	AFS42-041001800	TE 11132
47	Antenna tower	Heinrich Deisel	AS 620P	ANEC
48	Turntable	Heinrich Deisel	DS-412	ANEC
49	Turntable controller	Heinrich Deisel	HD-050	ANEC
50	Antenna mast	EMCO	1070	SAR
51	Turn table	EMCO	1060-2M	SAR
52	Near field probe	--	--	--
53	Digital multimeter	Fluke	87	TE 00257
54	Variable transformer	KSL	RU8	TE 00904
55	Two line V-network	R & S	ESH3-Z5	TE 00208
56	Pulse limiter	R & S	ESH3-Z2	TE 00756

## Revision history

REVISION	DATE	REMARKS
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