Königswinkel 10
32825 Blomberg
Germany
Phone +49 5235 9500 0
Fax +49 5235 9500 10

TEST REPORT

IEC 61993-2: 2001-12
MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS

Automatic Identification systems (AIS)

Part 2: Class A shipborne installation of the Universal Automatic Identification system (AIS)- Operational and performance requirements, Methods of test and required test results

Test Report Reference: R50387 Edition 2

Equipment under Test: AIS-Transponder UAIS DEBEG 3400

Applicant: SAM Electronics GmbH

Manufacturer: SAM Electronics GmbH

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1 IDENTIFICATION

1.1 APPLICANT

Name:	SAM Electronics GmbH Navigation and Communication
Address:	Behringstrasse 120 D-22763 Hamburg
Country:	Germany
Name for contact purposes:	Mr. Torsten Galaske
Tel:	+49-(0)40-8825-3405
Fax:	+49-(0)40-8825-4105
e-mail address:	torsten.galaske@sam-electronic.de

1.2 MANUFACTURER

Name:	SAM Electronics GmbH Navigation and Communication
Address:	Behringstrasse 120 D-22763 Hamburg
Country:	Germany
Name for contact purposes:	Mr. Torsten Galaske
Tel:	+49-(0)40-8825-3405
Fax:	+49-(0)40-8825-4105
e-mail address:	torsten.galaske@sam-electronic.de

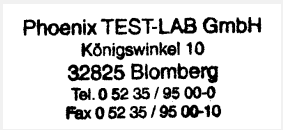
1.3 DATES

Date of Receipt of Test Sample:	01 March 2005
Start of test:	01 March 2005
Finish of test:	01 March 2005

1.4 TEST LABORATORY

The tests were carried out at: **PHOENIX TEST-LAB GmbH**
Königswinkel 10
D-32825 Blomberg **Tel: +49 (0) 52 35 / 95 00-0**
Germany **Fax: +49 (0) 52 35 / 95 00-10**

accredited by DATech e.V. in compliance with DIN EN ISO/IEC 17025 under Reg. No. DAT-P-105/99-21.

Test engineer:	Raimund Blask		03 March 2005
	name	signature	date
Test report checked:	Thomas Kühn		03 March 2005
	name	signature	date
			
		stamp	

1.5 RESERVATION

This test report is only valid in the original form.

The test results herein refer only to the tested sample. PHOENIX TEST-LAB GmbH is not responsible for any generalisations or conclusions draw from these test results and concerning further samples. Any modification of the tested samples is prohibited and leads to the invalidity of this test report. Each page contains the PHOENIX TEST-LAB Logo and the TEST REPORT REFERENCE.

2 TECHNICAL DATA OF EQUIPMENT

see also Annex B

Type:	AIS Transponder
Type designation:	UAIS DEBEG 3400
Serial No.:	-
Alignment range:	156.025 to 162.025 MHz
Switching range:	156.025 to 162.025 MHz
Channel separation:	12.5 kHz / 25 kHz
Rated RF output power:	Nominal low power: 2.0 W / 33 dBm Nominal high power: 12.5 W / 41 dBm
Supply Voltage:	U_{nom}= 24.0 V DC U_{min}= 21.6 V DC U_{max}= 31.2 V DC
Printed circuit designation:	-
Software:	-

Ports/Connectors

Identification	Connector		Length
	EUT	Ancillary	
DC-power-supply	fixed	Not specified	2 m
RS 422 data communication	fixed	D-Sub	3 m
VHF-antenna	TNC	BNC	3 m

3 ADDITIONAL INFORMATION

All tests, documented in this test-report were carried out, because the EUT
(see test-report R20273) was modified by the applicant / manufacturer as follows:

1. The rf-module from the transmitter output stage was changed from M67748H (old version, no longer available) to RA08H1317M (new version).

Therefore 50 different EUT´s were measured.
Only the conducted spurious emission measurement (30 MHz to 4 GHz) and the transmitter output-power (nominal high power output) were carried out and documented in this test-report (ordered by the applicant).

Additional information:

As requested by the applicant, the EUT was operating in normal operation-mode
(Channel 87 / 88, update-rate 2 s).

TEST OVERVIEW

Part 15	**Physical tests**	
	Transmitter requirements	
15.1	**TDMA Transmitter**	
15.1.1	Frequency error	Not ordered by the applicant
15.1.2	Carrier power (conducted)	Applicable
15.1.3	Modulation Spectrum 25 kHz Channel mode	Not ordered by the applicant
15.1.4	Modulation Spectrum 12.5 kHz Channel mode	Not ordered by the applicant
15.1.5	Transmitter attack time	Not ordered by the applicant
15.1.6	Transmitter release time	Not ordered by the applicant
15.2	**DSC Transmission**	
15.2.1	Frequency error of the DSC Transmission	Not ordered by the applicant
15.2.2	Modulation Rate	Not ordered by the applicant
	Receiver requirements	
15.3	**TDMA Receiver**	
15.3.1	Sensitivity - 25 kHz Operation	Not ordered by the applicant
15.3.2	Sensitivity - 12.5 kHz Operation	Not ordered by the applicant
15.3.3	Error behaviour at high input level	Not ordered by the applicant
15.3.4	Co-channel rejection - 25 kHz operation	Not ordered by the applicant
15.3.5	Co-channel rejection - 12.5 kHz operation	Not ordered by the applicant
15.3.6	Adjacent channel selectivity - 25 kHz operation	Not ordered by the applicant
15.3.7	Adjacent channel selectivity - 12.5 kHz operation	Not ordered by the applicant
15.3.8	Spurious response rejection	Not ordered by the applicant
15.3.9	Intermodulation response rejection and blocking	Not ordered by the applicant
15.3.10	Transmit to receive switching time	Not ordered by the applicant
15.4	**DSC Receiver**	
15.4.1	Maximum sensitivity	Not ordered by the applicant
15.4.2	Error behaviour at high input level	Not ordered by the applicant
15.4.3	Co-channel rejection	Not ordered by the applicant
15.4.4	Adjacent channel selectivity - 25 kHz operation	Not ordered by the applicant
15.4.5	Spurious response rejection	Not ordered by the applicant
15.4.6	Intermodulation response rejection	Not ordered by the applicant
15.4.7	Blocking or Desensitisation	Not ordered by the applicant
15.5	**Conducted Spurious Emissions conveyed to the antenna**	
15.5.1	Spurious Emissions from the Receiver	Not ordered by the applicant
15.5.2	Spurious Emissions from the Transmitter	Applicable

4 TRANSMITTER REQUIREMENTS

4.1 CARRIER POWER (CONDUCTED) SUBCLAUSE 15.1.2

Ambient temperature	20 °C	Relative humidity	55 %

Operation mode: Normal operation mode, update rate 2 s, f = 161.975 MHz / 162.025 MHz

Test conditions: T_{nom} (+ 20 °C), U_{nom} (24.0 V DC) Serial-No.	Carrier power (Conducted) At nominal high power: 41 dBm
0019234576	+41.2 dBm
0019234520	+41.2 dBm
0019234536	+41.0 dBm
0019234571	+41.3 dBm
0019234573	+41.2 dBm
0019234577	+41.4 dBm
0019234578	+41.1 dBm
0019234599	+41.1 dBm
0019234601	+41.1 dBm
0019234602	+41.1 dBm
0019234603	+41.2 dBm
0019234605	+41.4 dBm
0019234606	+41.2 dBm
0019234607	+41.2 dBm
0019234657	+41.4 dBm
0019234659	+41.2 dBm
0019234661	+41.1 dBm
0019234662	+41.3 dBm
0019234664	+41.2 dBm
0019234665	+41.0 dBm
0019234668	+41.4 dBm
0019234669	+41.2 dBm
0019234672	+41.2 dBm

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Test conditions: T_{nom} (+ 20 °C), U_{nom} (24.0 V DC) Serial-No.	Carrier power (Conducted) At nominal high power: 41 dBm
0019234673	+41.4 dBm
0019234674	+41.3 dBm
0019234675	+41.1 dBm
0019234676	+41.2 dBm
0019234677	+41.1 dBm
0019234682	+41.1 dBm
0019234687	+41.0 dBm
0019234690	+41.2 dBm
0019234696	+41.3 dBm
0019234699	+41.0 dBm
0019234701	+41.2 dBm
0019234722	+41.3 dBm
0019234733	+41.3 dBm
0019234737	+41.0 dBm
0019234747	+41.2 dBm
0019234758	+41.3 dBm
0019234783	+41.2 dBm
0019234734	+41.0 dBm
0019234608	+41.0 dBm
0019234521	+41.0 dBm
0019234685	+41.1 dBm
0019234524	+41.0 dBm
0019234482	+41.1 dBm

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Test conditions: T_{nom} (+ 20 °C), U_{nom} (24.0 V DC) Serial-No.	Carrier power (Conducted) At nominal high power: 41 dBm
0019234519	+41.4 dBm
0019234426	+41.2 dBm
0019234616	+41.0 dBm
0019234779	+41.4 dBm
Maximum difference to rated output power	-0 dB / +0.4 dB
Measurement uncertainty	-0.72 dB / +0.66 dB

LIMITS: SUBCLAUSE 15.1.2

The carrier output power (conducted) under normal test conditions shall be within ± 1.50 dB of the rated output power. The carrier output power (conducted) under extreme test conditions shall be within + 2.0 dB and - 3.0 dB of the rated output power.

TEST EQUIPMENT USED:

07, 42, 80, 82, 84

4.2 SPURIOUS EMISSIONS FROM THE TRANSMITTER SUBCLAUSE 15.5.2

Ambient temperature	19 °C	Relative humidity	55 %

EUT 1: 0019234573
Operation mode: Normal operation mode, update rate 2 s, f = 161.975 MHz / 162.025 MHz

SPURIOUS EMISSIONS LEVEL (CONDUCTED)					
f	Level	Bandwidth	f	Level	Bandwidth
138.025 MHz	-40 dBm	100 kHz	186.025 MHz	-42 dBm	100 kHz
151.325 MHz	-37 dBm	100 kHz	324.050 MHz	-39 dBm	100 kHz
172.025 MHz	-38 dBm	100 kHz	-	-	-
Measurement uncertainty		+ 0.66 dB / - 0.72 dB			

EUT 2: 0019234578
Operation mode: Normal operation mode, update rate 2 s, f = 161.975 MHz / 162.025 MHz

SPURIOUS EMISSIONS LEVEL (CONDUCTED)					
f	Level	Bandwidth	f	Level	Bandwidth
138.025 MHz	-40 dBm	100 kHz	186.025 MHz	-41 dBm	100 kHz
151.325 MHz	-37 dBm	100 kHz	324.050 MHz	-38 dBm	100 kHz
172.025 MHz	-37 dBm	100 kHz	-	-	-
Measurement uncertainty		+ 0.66 dB / - 0.72 dB			

EUT 3: 0019234605
Operation mode: Normal operation mode, update rate 2 s, f = 161.975 MHz / 162.025 MHz

SPURIOUS EMISSIONS LEVEL (CONDUCTED)					
f	Level	Bandwidth	f	Level	Bandwidth
138.025 MHz	-40 dBm	100 kHz	186.025 MHz	-42 dBm	100 kHz
151.325 MHz	-39 dBm	100 kHz	324.050 MHz	-38 dBm	100 kHz
172.025 MHz	-38 dBm	100 kHz	-	-	-
Measurement uncertainty		+ 0.66 dB / - 0.72 dB			

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EUT 4: 0019234661
Operation mode: Normal operation mode, update rate 2 s, f = 161.975 MHz / 162.025 MHz

SPURIOUS EMISSIONS LEVEL (CONDUCTED)					
f	Level	Bandwidth	f	Level	Bandwidth
138.025 MHz	-38 dBm	100 kHz	186.025 MHz	-40 dBm	100 kHz
151.325 MHz	-40 dBm	100 kHz	324.050 MHz	-42 dBm	100 kHz
172.025 MHz	-41 dBm	100 kHz	-	-	-
Measurement uncertainty		+ 0.66 dB / - 0.72 dB			

EUT 5: 0019234664
Operation mode: Normal operation mode, update rate 2 s, f = 161.975 MHz / 162.025 MHz

SPURIOUS EMISSIONS LEVEL (CONDUCTED)					
f	Level	Bandwidth	f	Level	Bandwidth
138.025 MHz	-37 dBm	100 kHz	186.025 MHz	-40 dBm	100 kHz
151.325 MHz	-38 dBm	100 kHz	324.050 MHz	-45 dBm	100 kHz
172.025 MHz	-41 dBm	100 kHz	810.125 MHz	-44 dBm	100 kHz
Measurement uncertainty		+ 0.66 dB / - 0.72 dB			

EUT 6: 0019234672
Operation mode: Normal operation mode, update rate 2 s, f = 161.975 MHz / 162.025 MHz

SPURIOUS EMISSIONS LEVEL (CONDUCTED)					
f	Level	Bandwidth	f	Level	Bandwidth
138.025 MHz	-39 dBm	100 kHz	186.025 MHz	-42 dBm	100 kHz
151.325 MHz	-38 dBm	100 kHz	324.050 MHz	-38 dBm	100 kHz
172.025 MHz	-39 dBm	100 kHz	810.125 MHz	-45 dBm	100 kHz
Measurement uncertainty		+ 0.66 dB / - 0.72 dB			

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EUT 7: 0019234676
Operation mode: Normal operation mode, update rate 2 s, f = 161.975 MHz / 162.025 MHz

SPURIOUS EMISSIONS LEVEL (CONDUCTED)					
f	Level	Bandwidth	f	Level	Bandwidth
138.025 MHz	-39 dBm	100 kHz	186.025 MHz	-40 dBm	100 kHz
151.325 MHz	-38 dBm	100 kHz	324.050 MHz	-47 dBm	100 kHz
172.025 MHz	-37 dBm	100 kHz	810.125 MHz	-45 dBm	100 kHz
Measurement uncertainty		+ 0.66 dB / - 0.72 dB			

EUT 8: 0019234701
Operation mode: Normal operation mode, update rate 2 s, f = 161.975 MHz / 162.025 MHz

SPURIOUS EMISSIONS LEVEL (CONDUCTED)					
f	Level	Bandwidth	f	Level	Bandwidth
138.025 MHz	-40 dBm	100 kHz	186.025 MHz	-41 dBm	100 kHz
151.325 MHz	-37 dBm	100 kHz	324.050 MHz	-45 dBm	100 kHz
172.025 MHz	-38 dBm	100 kHz	810.125 MHz	-45 dBm	100 kHz
Measurement uncertainty		+ 0.66 dB / - 0.72 dB			

EUT 9: 0019234737
Operation mode: Normal operation mode, update rate 2 s, f = 161.975 MHz / 162.025 MHz

SPURIOUS EMISSIONS LEVEL (CONDUCTED)					
f	Level	Bandwidth	f	Level	Bandwidth
138.025 MHz	-38 dBm	100 kHz	186.025 MHz	-41 dBm	100 kHz
151.325 MHz	-39 dBm	100 kHz	324.050 MHz	-43 dBm	100 kHz
172.025 MHz	-40 dBm	100 kHz	-	-	-
Measurement uncertainty		+ 0.66 dB / - 0.72 dB			

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EUT 10: 0019234758
Operation mode: Normal operation mode, update rate 2 s, f = 161.975 MHz / 162.025 MHz

SPURIOUS EMISSIONS LEVEL (CONDUCTED)					
f	Level	Bandwidth	f	Level	Bandwidth
138.025 MHz	-40 dBm	100 kHz	186.025 MHz	-40 dBm	100 kHz
151.325 MHz	-36 dBm	100 kHz	324.050 MHz	-39 dBm	100 kHz
172.025 MHz	-36 dBm	100 kHz	810.125 MHz	-45 dBm	100 kHz
Measurement uncertainty		+ 0.66 dB / - 0.72 dB			

LIMITS: SUBCLAUSE 15.5.2

Conducted emissions:

Frequency range	150 kHz to 1 GHz	1 to 4 GHz
TX operating	250 nW (- 36 dBm)	1 µW (- 30 dBm)

TEST EQUIPMENT USED:

07, 42, 58, 59, 63, 80, 82, 84

5 TEST EQUIPMENT

No.	Test equipment	Type	Manufacturer	Serial No.	PM-No
01	Fully anechoic chamber M8	-	Siemens Matsushita	B83117-E7019-T231	480190
02	Fully anechoic chamber M20	-	Albatross Projects	B83107-E2439-T232	480303
03	Open area test site	-	Phoenix Test-Lab	-	480085
04	Outdoor test site	-	Phoenix Test-Lab	-	480293
05	Measuring receiver	ESAI	Rohde & Schwarz	831953/001 833181/018	480025 480026
06	Measuring receiver	ESMI	Rohde & Schwarz	843977/001 843530/018	480179 480180
07	Measuring receiver	ESI 40	Rohde & Schwarz	837808/007	480334
08	Measuring receiver	ESCS 30	Rohde & Schwarz	828985/014	480270
09	Spectrum analyser	R2361C	Advantest	51720469	480144
10	Loop antenna	HFH2-Z2	Rohde & Schwarz	832609/014	480059
11	BILOG Antenna	CBL6112 A	Chase	2034	480185
12	BILOG Antenna	CBL6112 B	Chase	2688	480328
13	Bikon Antenna	HK 116	Rohde & Schwarz	833599/008	480071
14	Bikon Antenna	HK 116	Rohde & Schwarz	836891/012	480122
15	Log-Per Antenna	HL 223	Rohde & Schwarz	835556/014	480123
16	Log-Per Antenna	HL 223	Rohde & Schwarz	833335/005	480072
17	Horn Antenna	3115 A	EMCO	9609-4918	480183
18	Horn Antenna	3115 B	EMCO	9609-4922	480184
19	Precision Dipole	HZ 12	Rohde & Schwarz	831781/02	480061
20	Precision Dipole	HZ 13	Rohde & Schwarz	831782/02	480062
21	Shorted Dipole	VHAA 9110	Schwarzbeck	143	480166
22	Power amplifier	25A100	AR	12610	480023
23	Loop Antenna ∅ = 110 mm	-	Phoenix Test-Lab	-	410084
24	Signal generator	SMP 03	Rohde & Schwarz	848986/004	480245
25	Signal generator	SMHU	Rohde & Schwarz	844170/017	480266
26	Signal generator	SME 06	Rohde & Schwarz	844530/008	480174
27	Signal generator	SMG	Rohde & Schwarz	8334497/030	480013
28	Signal generator	83650L	Agilent	3844A00554	480333

No.	Test equipment	Type	Manufacturer	Serial No.	PM-No
29	Radio communication analyser	CMTA 54	Rohde & Schwarz	841904/011	480169
30	Oscilloscope 4channel	54540A	Hewlett Packard	3339A00192	480001
31	Oscilloscope 2 channel	54520A	Hewlett Packard	3344A00390	480007
32	Signal generator	TOE 7704	TOELLNER	39385	480008
33	Combiner	ZFSC-2-11	Mini Circuits	-	410089
34	Combiner	ZFSC-2-11	Mini Circuits	-	410090
35	Power splitter	11850C	Hewlett Packard	01052	410069
36	Power splitter	-	Suhner	-	410070
37	Symmetrical transformer	-	Phoenix Test Lab	-	410086
38	Feeding bridge A	-	Phoenix Test Lab	-	410087
39	Feeding bridge A	-	Phoenix Test Lab	-	410088
40	Regulating transformer	BR802	Block	-	480094
41	Regulating transformer	BR802	Block	-	480095
42	Power supply	TOE 8752	Toellner	31566	480010
43	Power supply	TOE 8852	Toellner	51712	480233
44	Power supply	TOE 8752	Toellner	31569	480009
46	Power supply	TOE 8852	Toellner	51786	490001
47	Climatic chamber	KS600/75L	RS-Simulatoren	19002901	490065
48	Climatic chamber	KS600/75	RS-Simulatoren	19004201	490070
49	Climatic chamber	ST2K220/75	RS-Simulatoren	9803901	490020
50	Climatic chamber	ST2K220/75	RS-Simulatoren	2002701	490072
51	Climatic chamber	GTS500.40	GTS	1660	490073
52	Double circulator	-	Motorola	-	-
53	Directional coupler	ZFDC-2O-5	Mini Circuits	-	410092
54	Directional coupler	4001B-20	Narda Microwave	02010	410150
55	Directional coupler	774D	Hewlett Packard	06375	410149
56	Impedance matching unit	-	Phoenix-Test-Lab	-	410091
57	High Pass Filter	HP-350	Dirk Fischer Elektronik	-	410151
58	High Pass Filter	HP-450	Dirk Fischer Elektronik	-	410152
59	High Pass Filter	HP-1000	Dirk Fischer Elektronik	-	410147

No.	Test equipment	Type	Manufacturer	Serial No.	PM-No
60	IF-Filter 20kHz/25kHz	MQF 10.7-1400/11	Telefilter	0043	480323
61	IF-Filter 12.5kHz	MQF 10.7-0850/11	Telefilter	0043	480324
62	Notch Filter	TTR 375-3EE	TELONIC Berkeley	-	480330
63	Notch Filter	TTR 190-3EE	TELONIC Berkeley	97284-6	480331
64	Notch Filter	TTR 95-3EE	TELONIC Berkeley	00104-2	480332
65	Mixer	ZP-1	Mini Circuits	15542	410148
66	Variable Attenuator / 0-11 dB	8494B	Hewlett Packard	3308A38264	480264
67	Variable Attenuator 0 - 110 dB	8496B	Hewlett Packard	3308A71365	480265
68	Attenuator / 3 dB / 5 W	WA2-3	Weinschel	8250	410115
69	Attenuator / 3 dB / 5 W	WA2-3	Weinschel	8251	410116
70	Attenuator / 3 dB / 5 W	WA2-3	Weinschel	8252	410117
71	Attenuator / 3 dB / 50 W	33-3-34	Weinschel	BH 5062	410131
72	Attenuator / 6 dB / 5 W	WA2-6	Weinschel	8253	410118
73	Attenuator / 6 dB / 5 W	WA2-6	Weinschel	8254	410119
74	Attenuator / 6 dB / 5 W	WA2-6	Weinschel	8255	410120
75	Attenuator / 6 dB / 25 W	33-6-34	Weinschel	BH 5536	410128
76	Attenuator / 10 dB / 1 W	6810.17A	Huber + Suhner	-	410067
77	Attenuator / 10 dB / 5 W	WA2-10	Weinschel	8259	410121
78	Attenuator / 10 dB / 5 W	WA2-10	Weinschel	8260	410122
79	Attenuator / 10 dB / 5 W	WA2-10	Weinschel	8261	410123
80	Attenuator / 10 dB / 10 W	WA8-10	Weinschel	7538	410112
81	Attenuator / 10 dB / 25 W	33-10-34	Weinschel	BH 4878	410129
82	Attenuator / 10 dB / 25 W	33-10-34	Weinschel	BH 4856	410130
83	Attenuator / 10 dB / 100 W	BN 745353	Spinner	20262	480274
84	Attenuator / 20 dB / 1 W	6820.17A	Huber + Suhner	-	410068
85	Attenuator / 20 dB / 5 W	WA2-20	Weinschel	8256	410124
86	Attenuator / 20 dB / 5 W	WA2-20	Weinschel	8257	410125
87	Attenuator / 20 dB / 5 W	WA2-20	Weinschel	8258	410126

No.	Test equipment	Type	Manufacturer	Serial No.	PM-No
88	Attenuator / 20 dB / 10 W	WA8-20	Weinschel	7539	410113
89	Attenuator / 30 dB / 200 W	BN 745395	Spinner	29971	480232
90	Termination / 50 Ω / 15 W	6515.17.A	Huber + Suhner	-	410078
91	Termination / 50 Ω / 0.5 W	6500.17.A	Huber + Suhner	-	410074
92	Termination / 50 Ω / 0.5 W	6500.17.A	Huber + Suhner	-	410075
93	RF-cable No. 1	RTK 081	Rosenberger	-	410093
94	RF-cable No. 2	RTK 081	Rosenberger	-	410094
95	RF-cable No. 3	RTK 081	Rosenberger	-	410095
96	RF-cable No. 4	RTK 081	Rosenberger	-	410096
97	RF-cable No. 5	RTK 081	Rosenberger	-	410097
98	RF-cable No. 6	RTK 081	Rosenberger	-	410098
99	RF-cable No. 7	Sucoflex	Huber + Suhner	-	410099
100	RF-cable No. 8	RG223	Phoenix-Test-Lab	-	410100
101	RF-cable No. 9	RG223	Phoenix-Test-Lab	-	410101
102	RF-cable No. 10	RG223	Phoenix-Test-Lab	-	410102
103	RF-cable No. 11	RG223	Phoenix-Test-Lab	-	410103
104	RF-cable No. 12	RG223	Phoenix-Test-Lab	-	410104
105	RF-cable No. 13	RG223	Phoenix-Test-Lab	-	410105
106	RF-cable No. 14	RG223	Phoenix-Test-Lab	-	410106
107	RF-cable No. 15	RG223	Phoenix-Test-Lab	-	410107
108	RF-cable No. 16	RG223	Phoenix-Test-Lab	-	410108
109	RF-cable No. 17	RG223	Phoenix-Test-Lab	-	410109
110	RF-cable No. 18	RG58	Phoenix-Test-Lab	-	410110
111	RF-cable No. 30	RTK 081	Rosenberger	-	410141
112	RF-cable No. 31	RTK 081	Rosenberger	-	410142
113	Oscilloscope	HM	HAMEG	-	480160
114	Probe	HM	HAMEG	-	410057
115	Power-Amplifier	AR 100	Amplifier Research	-	480022
116	Directional coupler	3060-20	Narda	-	480351
117	Signal generator	SMY 01	Rohde & Schwarz	-	580010
118	225 MHz Universal counter	53131 A	Hewlett & Packard	-	480134

6 LIST OF ANNEXES

ANNEX A	MEASUREMENT RESULTS (Output Power)	25 pages
ANNEX B	MEASUREMENT RESULTS (Spurious Emission)	10 pages