



FCC Test Report

Test report no.: EMC_662FCC15.247_2004_WLAN+BT

FCC Part 15.247 for DSSS systems / CANADA RSS-210

Model: 7900L0P

FCC ID: HD57900L0P

IC: 1693B79L0P



TTI-P-G 081/94-A0

Accredited according to **ISO/IEC 17025**



**Bluetooth Qualification
Test Facility
(BQTF)**

CTIA Authorized Test Lab

FCC listed # 101450

IC recognized # 3925

CETECOM Inc.

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1.1	Notes

The test results of this test report relate exclusively to the test item specified in 1.5. The CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. 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 CETECOM Inc USA.

TEST REPORT PREPARED BY:**EMC Engineer: Harpreet Sidhu**

1.2 Testing laboratory
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1.3 Details of applicant

Name : Hand Held Products, Inc.
Street : 700 Vision Drive
City / Zip Code : Skaneateles Falls, NY 13153
Country : U.S.A
Contact : Naveen Velagapudi
Telephone : +1 315 685 2931
Tele-fax : +1 315 685 1210
e-mail : velagapudin@hhp.com

1.4 Application details

Date of receipt test item : 2004-08-16
Date of test : 2004-08-16/17/18

1.5 Test item

Manufacturer : Applicant
Marketing Name : D7900
Model No. : **7900L0P**
[Description](#) : [Hand held computer with 802.11b WLAN and BT](#)
FCC-ID : HD57900L0P
IC ID : 1693B79L0P

Additional information

Frequency : 2412MHz – 2462MHz for WLAN
2402MHz – 2480MHz for BT
Type of modulation : DSSS
Number of channels : 11 for WLAN
79 for BT
Antenna : External
Output power : 16.0dBm (0.04W) conducted peak power for WLAN
-11.4dBm (0.00007W) max. conducted peak power for BT

1.6 Test standards: **FCC Part 15 §15.247 / CANADA RSS-210**

PROJECT OVERVIEW:

NOTE: This test report covers radiated measurements as per FCC15.247 for collocation of WLAN and BT module in HHP handheld computer model#7900L0P. For all other measurements please refer to under mentioned test reports.

Radiated WLAN FCC15.247: test report#EMC_662FCC15.247_2004_WLAN_7900L0P

Radiated BT FCC15.247: test report#EMC_662FCC15.247_2004_BT_7900L0P

Conducted WLAN: 2L0523RUS1_WLAN_cond

Conducted BT: BT_cond_Socket

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

Final Verdict:
(Only “passed” if all single measurements are “passed”)

Passed**Technical responsibility for area of testing:****2004-10-04 EMC & Radio Lothar Schmidt (Manager)****Date****Section****Name****Signature****Responsible for test report and project leader:****2004-10-04 EMC & Radio Harpreet Sidhu (EMC Engineer)****Date****Section****Name****Signature**

2.2 Test report

TEST REPORT

Test report no.: EMC_662FCC15.247_2004_WLAN+BT

TEST REPORT REFERENCE

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EMISSION LIMITATIONS
Transmitter (Radiated)**§ 15.247 (c) (1)****LIMITS**

In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. 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)).

NOTE:

1. The radiated emissions were done with different settings, using the relevant pre-amplifiers for the relevant frequency ranges. This is the reason that the graphs show different noise levels. In the range between 3 and 26.5 GHz very short cable connections to the antenna was used to minimize the noise level.

2. All measurements are done in peak mode unless specified with the plots.

Results for the radiated measurements below 30MHz according § 15.33

Frequency	Measured values	Remarks
9KHz – 30MHz	No emissions found, caused by the EUT	This is valid for all the tested channels

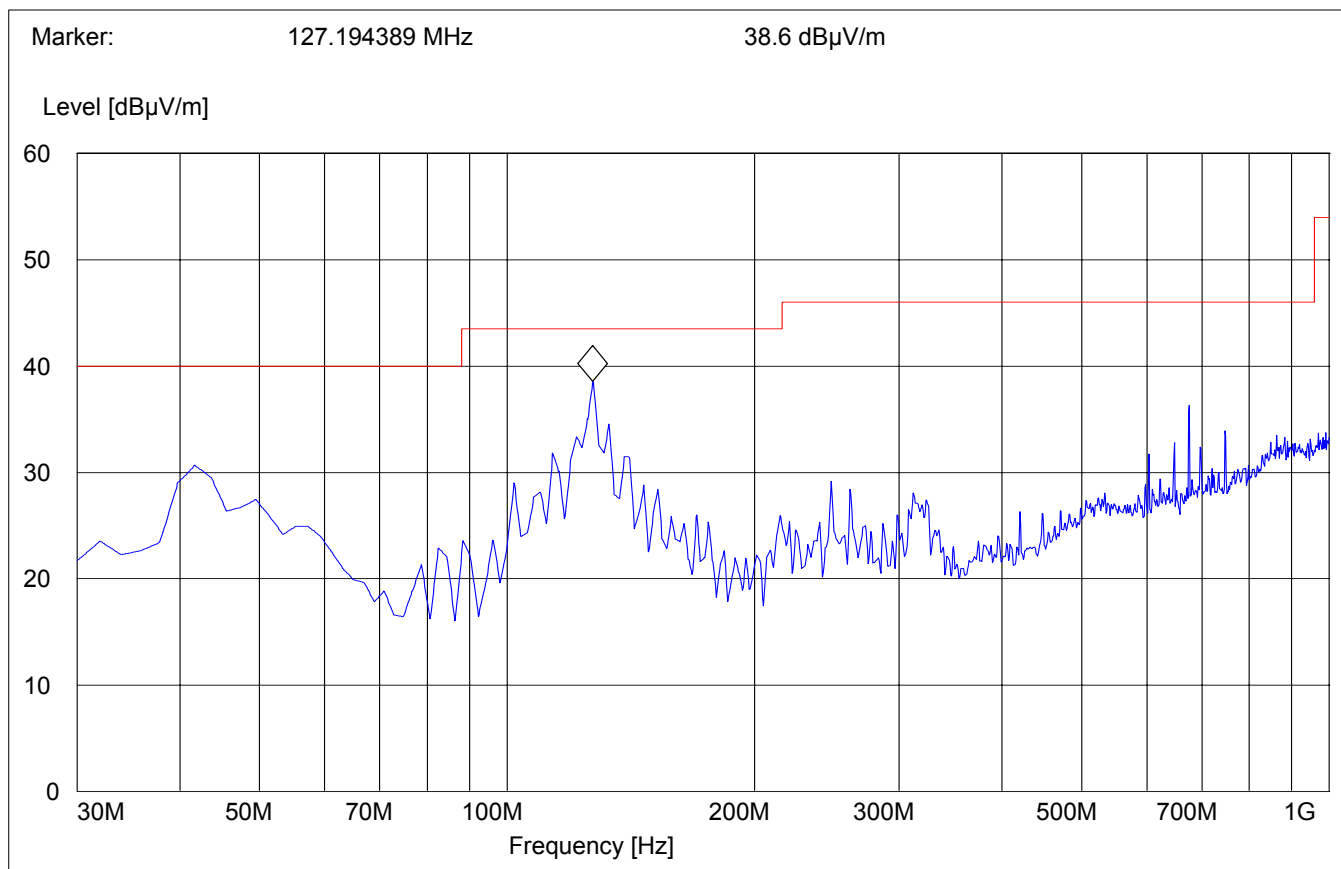
EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Antenna: Vertical

Operating Mode: BT @ CH 0 + WLAN @ CH 1

SWEEP TABLE:		"Spuri hi 30-1G"			
Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency		Time	VBW	
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186



EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

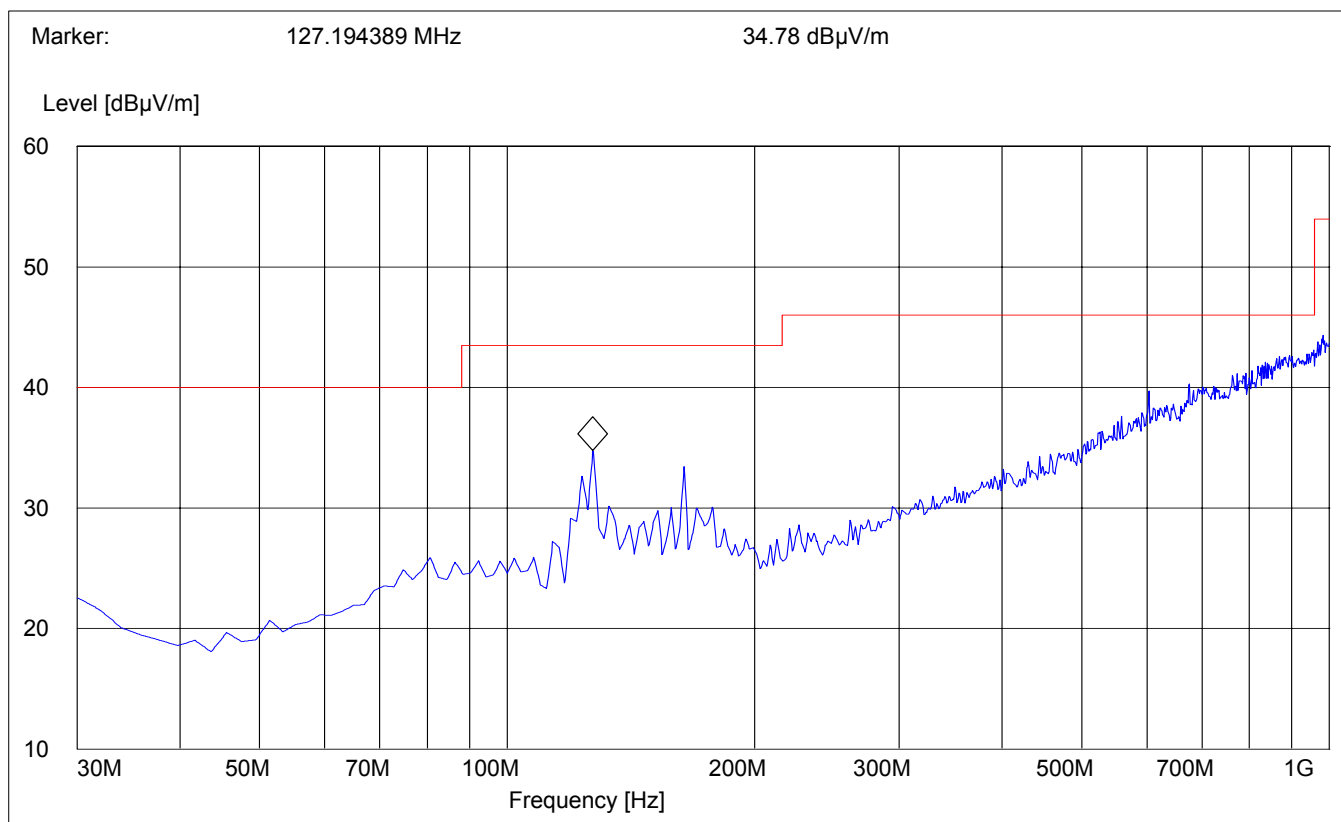
Antenna: Horizontal

Operating Mode: BT @ CH 0 + WLAN @ CH 1

SWEEP TABLE:

"Spuri hi 30-1G"

Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency		Time	VBW	
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186



EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

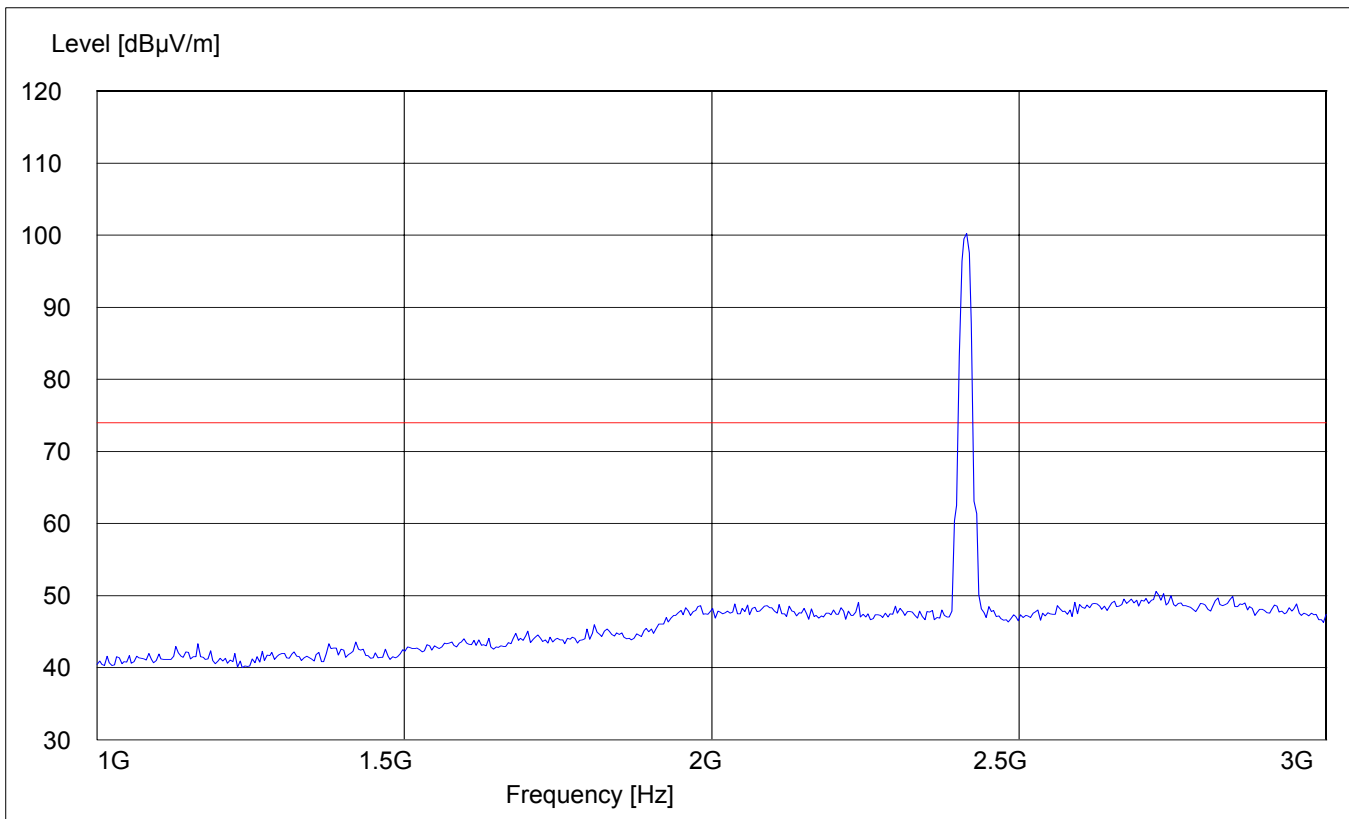
Operating Mode: BT @ CH 0 + WLAN @ CH 1

Note: Peak above the limit line is the WLAN carrier freq. BT carrier freq. is not in plot, since BT power is very low it is in the noise floor.

SWEEP TABLE:

"Spuri hi 1-3G"

Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW	VBW	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	10Hz	#326 horn (dBi)



EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

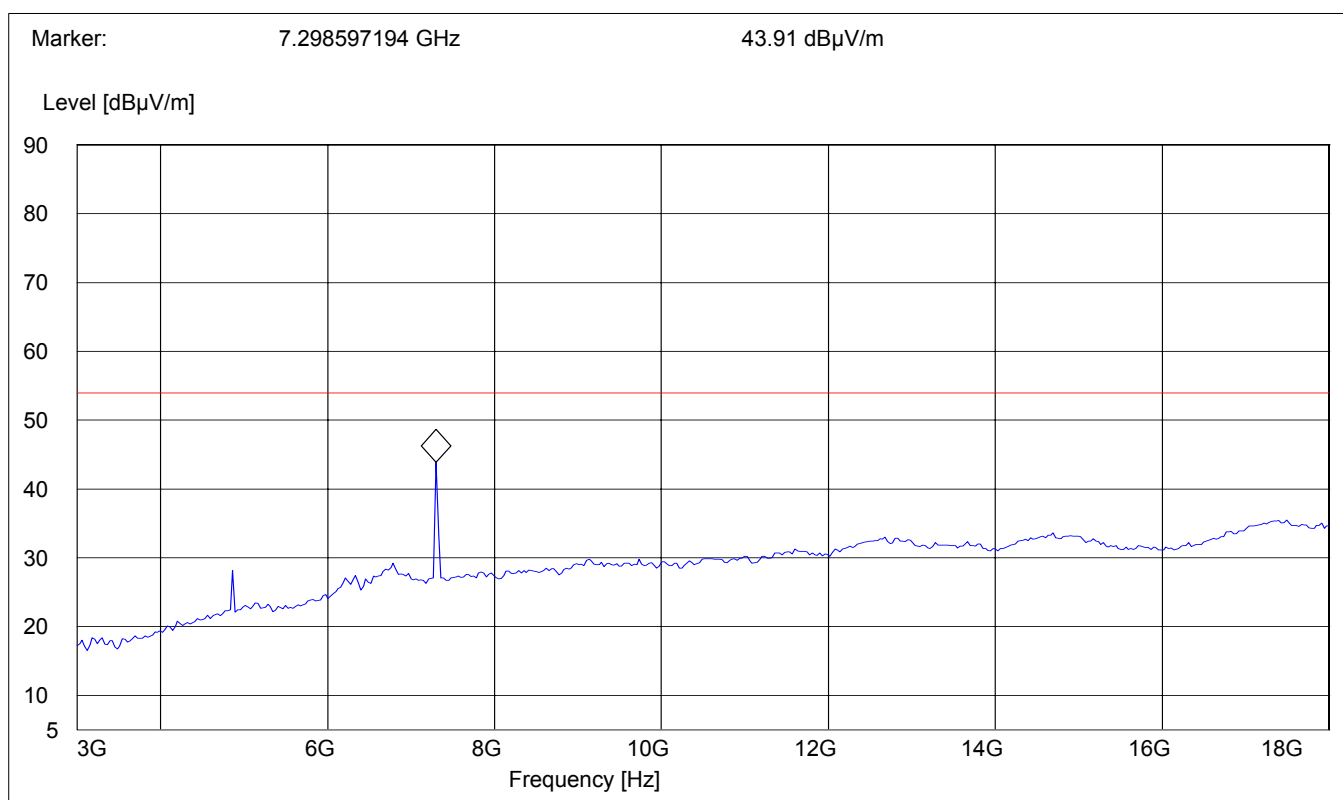
Operating Mode: BT @ CH 0 + WLAN @ CH 1

Average Measurement

SWEEP TABLE:

"Spuri hi 3-18G"

Start	Stop	Detector	Meas.	RBW	VBW	Transducer
Frequency	Frequency	Time	Bandw.			
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	10Hz	#326 horn (dBi)



EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

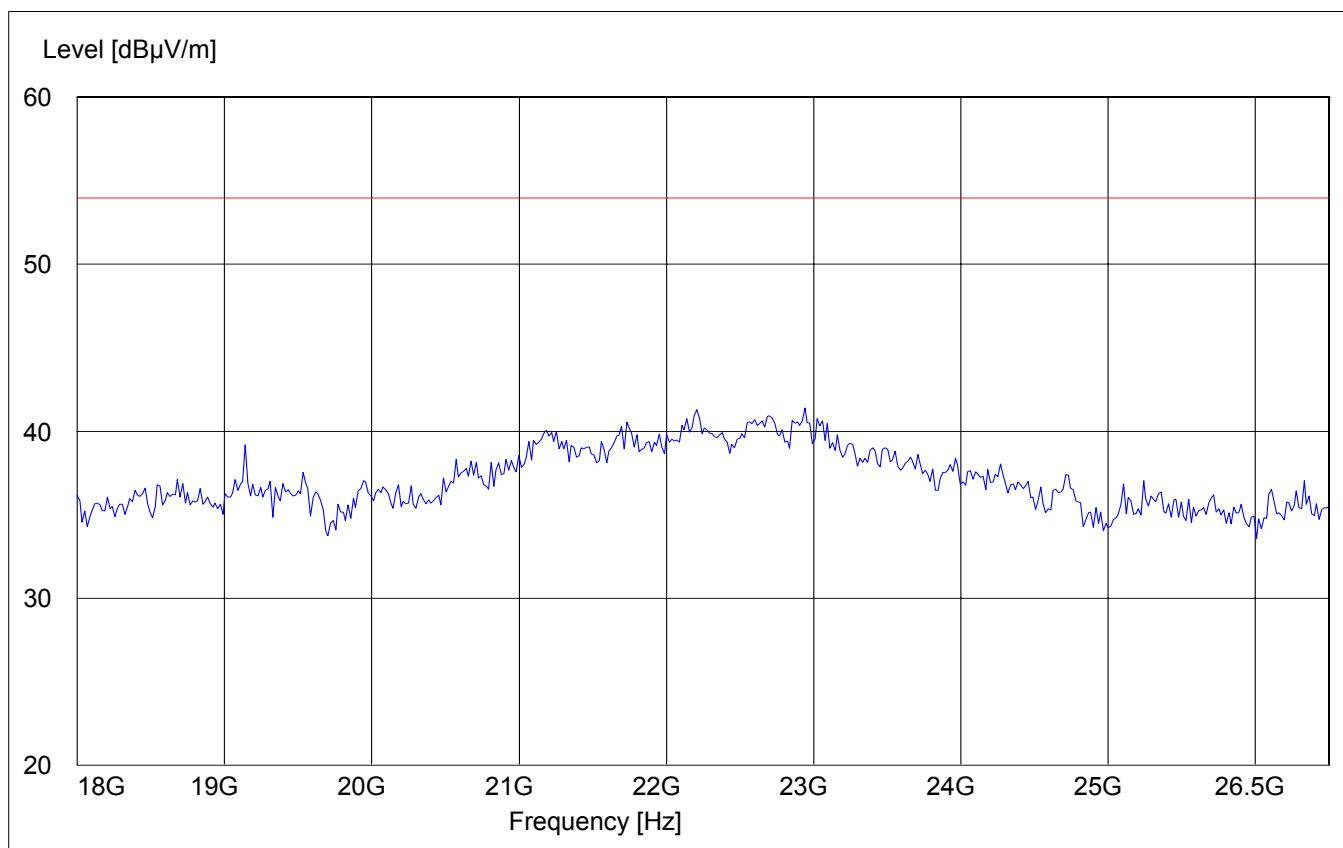
18GHz – 26.5GHz

Operating Mode: BT @ CH 0 + WLAN @ CH 1

SWEEP TABLE:

"Spuri hi 18-26.5G"

Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
18 GHz	26.5 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)



TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

No	Instrument/Ancillary	Type	Manufacturer	Serial No.
01	Spectrum Analyzer	ESIB 40	Rohde & Schwarz	100107
02	Spectrum Analyzer	FSEM 30	Rohde & Schwarz	826880/010
03	Biconilog Antenna	3141	EMCO	0005-1186
04	Horn Antenna (700M-18GHz)	SAS-200/571	AH Systems	325
05	Horn Antenna (18-26.5GHz)	3160-09	EMCO	1240
06	2-3GHz Band reject filter	BRM50701	Microtronics	6
07	Power-Meter	NRVD	Rohde & Schwarz	0857.8008.02
08	Pre-Amplifier	TS-ANA	Rohde & Schwarz	--
09	Pre-Amplifier	JS4-00102600	Miteq	00616

BLOCK DIAGRAMS
Radiated Testing

ANECHOIC CHAMBER

