

## TEST DATA

Model Name	: VX-4000U		
FCC ID	: K66VX-4000UE		
Serial Number	: 1H000003		
Specification is Referenced	: EIA/TIA-603		
Type	: D expand		
Emission Type	: 16K0F3E/11K0F3E		
Channel Spacing	: 25 / 12.5		[kHz]
Description	: Mobile		
Mode	: FM		
Test Voltage	Nominal	: 13.8 [V]	
	Extrem	*.85	: 11.7 [V]
		*1.15	: 15.9 [V]
Temperature	Nominal	: 25 [°C]	
	Extrem	: -30 - +60 [°C]	
Test Frequency	1	TX	: 489.9500 [MHz]
		RX	: 489.9500 [MHz]
			[MHz]
			[MHz]
			[MHz]
			[MHz]
			[MHz]
			[MHz]
1st IF Frequency	RX	: 43.95	[MHz]
2nd IF Frequency	RX	: 0.45	[kHz]
Microphone Impedance	: 600		[Ω]
Speaker Impedance	: 4		[Ω]
Manufacturer	: VERTEX STANDARD CO., LTD.		
Test Operator	: M.Kurihara		
Test Date	Start	: 2001/6/7	
	Finish	: 2001/6/17	

VX-4000U Channel Settings

CH No.	Shown on LCD	Transmit Frequency [MHz]	Receive Frequency [MHz]	CH Spacing	Power	
					High (default)	Low (press ACC)
1	48995WH	489.95	489.95	25k	40W	
2	48995WL	489.95	489.95	25k	5W	
3	48995NH	489.95	489.95	12.5k	40W	
4	48995NL	489.95	489.95	12.5k	5W	
5						
6						
7						
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10						
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13						
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15						
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17						
18						
19						
20						

Model Name :VX-4000U  
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Emission Type :16K0F3E/11K0F3E  
Channel Spacing :25 / 12.5 [kHz]  
Band Type :D expand

Carrier Power Output Rating (PARAGRAPH 2.2.1)

Carrier Frequency [MHz]	RF Power HIGH [W]	RF Power LOW 1 [W]	RF Power LOW 2 [W]	RF Power LOW 3 [W]
489.950	40.10	5.00		
0.000				
0.000				

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 Serial Number :1H000003

Emission Type :16K0F3E/11K0F3E  
 Channel Spacing :25 / 12.5 [kHz]  
 Band Type :D expand

Conducted Spurious Emission (PARAGRAPH 2.2.13)

POWER: HIGH

	489.950 MHz		Carrier Freq			
	Emission Frequency [MHz]	Spurious Attenuation [dBm]				
2nd	979.90	-69.50				
3rd	1469.85	Noise Floor				
4th	1959.80	Noise Floor				
5th	2449.75	Noise Floor				
6th	2939.70	Noise Floor				
7th	3429.65	Noise Floor				
8th	3919.60	Noise Floor				
9th	4409.55	Noise Floor				
10th	4899.50	Noise Floor				

POWER: LOW

	489.950 MHz		Carrier Freq			
	Emission Frequency [MHz]	Spurious Attenuation [dBm]				
2nd	979.90	-70.10				
3rd	1469.85	-69.50				
4th	1959.80	Noise Floor				
5th	2449.75	Noise Floor				
6th	2939.70	Noise Floor				
7th	3429.65	Noise Floor				
8th	3919.60	Noise Floor				
9th	4409.55	Noise Floor				
10th	4899.50	Noise Floor				

Field Strength of Spurious Radiation (PARAGRAPH 2.2.12)

POWER: HIGH

489.950 MHz						
Emission Frequency [MHz]	ERP S/G level [dBm]	Cable Loss [dB]	Correction Factor (ref. to 1/2 dipole) [dB]	Emission level [dBm]	Limit Mask D [dBm]	Margin [dB]
979.90	-66.76	2.97	32.37	-31.42	-20.00	11.42
1469.85	-41.26	3.60	1.01	-36.65	-20.00	16.65
1959.80	-39.61	4.38	3.11	-32.12	-20.00	12.12
2449.75	-53.13	4.94	9.13	-39.06	-20.00	19.06
2939.70	Noise floor			<-47		
3429.65	-53.48	6.66	6.66	-40.16	-20.00	20.16
3919.60	-52.84	6.67	6.67	-39.50	-20.00	19.50
4409.55	Noise floor			<-47		
4899.50	Noise floor			<-47		

POWER: LOW

489.950 MHz						
Emission Frequency [MHz]	ERP S/G level [dBm]	Cable Loss [dB]	Correction Factor (ref. to 1/2 dipole) [dB]	Emission level [dBm]	Limit Mask D [dBm]	Margin [dB]
979.90	Noise floor			<-40		
1469.85	Noise floor			<-40		
1959.80	-44.57	4.38	3.11	-37.08	-20.00	17.08
2449.75	Noise floor			<-40		
2939.70	Noise floor			<-40		
3429.65	Noise floor			<-40		
3919.60	-50.26	6.67	6.67	-36.92	-20.00	16.92
4409.55	Noise floor			<-40		
4899.50	Noise floor			<-40		

Model Name :VX-4000U  
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 Serial Number :1H000003

Emission Type :16K0F3E/11K0F3E  
 Channel Spacing :25 / 12.5 [kHz]  
 Band Type :D expand

Conducted Spurious Emission  
 (PARAGRAPH 2.1.2)

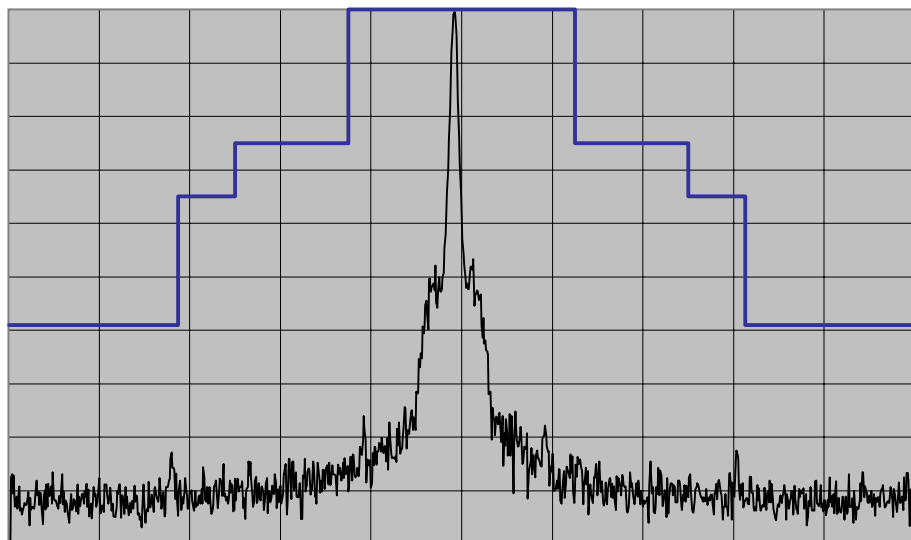
Frequency Tuned [MHz]	Frequency Emission [MHz]	Level [nW]
489.9500	446.0000	0.0018

Field Strength of Spurious Radiation From Internal Radiators (PARAGRAPH 2.1.1)

Frequency Tuned [MHz]	489.950 MHz		Turntable Azimuth [deg]	Antenna Hight [m]	Analyzer Reading [dBuV]	Correction Factor [dB/m]	Emission level [dBuV/m]	Limit [dBuV/m]	Margin [dB]
	Test Detector	Antenna Polarity (H/V)							
446.0400	QP	V	10.00	1.10	48.40	-12.80	35.60	46.00	10.40
892.0800	QP	V	20.00	1.20	50.30	-8.10	42.20	54.00	11.80
1338.1200	QP	V	0.00	1.20	45.25	-9.30	35.95	54.00	18.05
1784.1600	QP	V	20.00	1.10	47.60	-9.40	38.20	54.00	15.80
2230.2000	QP	V	20.00	1.00	42.93	-4.20	38.73	54.00	15.27

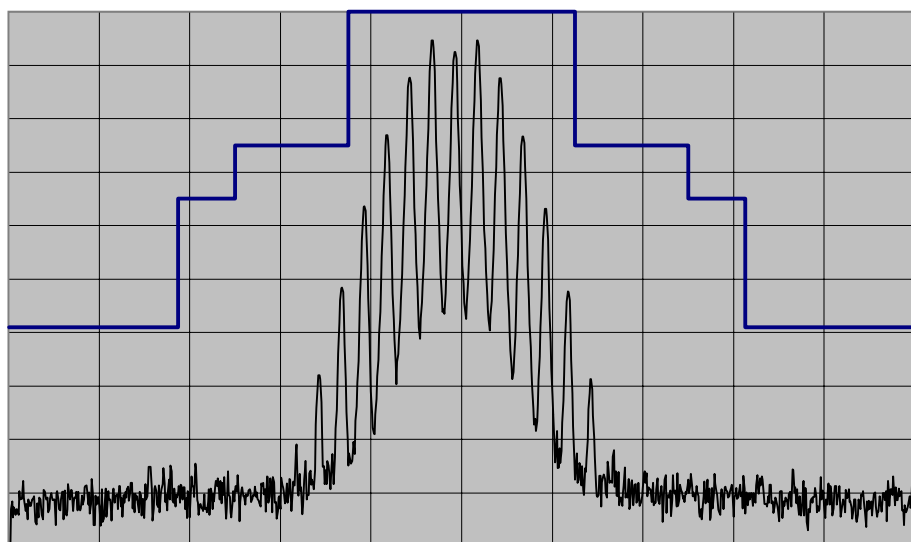
### Occupied Bandwidth

CENTER FREQ 489.95 MHz  
 SPAN 100 KHz  
 REF LEVEL 46 dBm  
 /DIV 10 dB/  
 ATT 20 dB  
 OFFSET 36.8 dB  
 RES BW 300 Hz  
 VIDEO BW 300 Hz  
 SWEEP TIME 5 s  
 AVG



Model Name	VX-4000U	Transmit Frequency	489.95 MHz
Serial Number	1H000003	Channel Spacing	25 kHz
Power Setting	High	Modulation	None

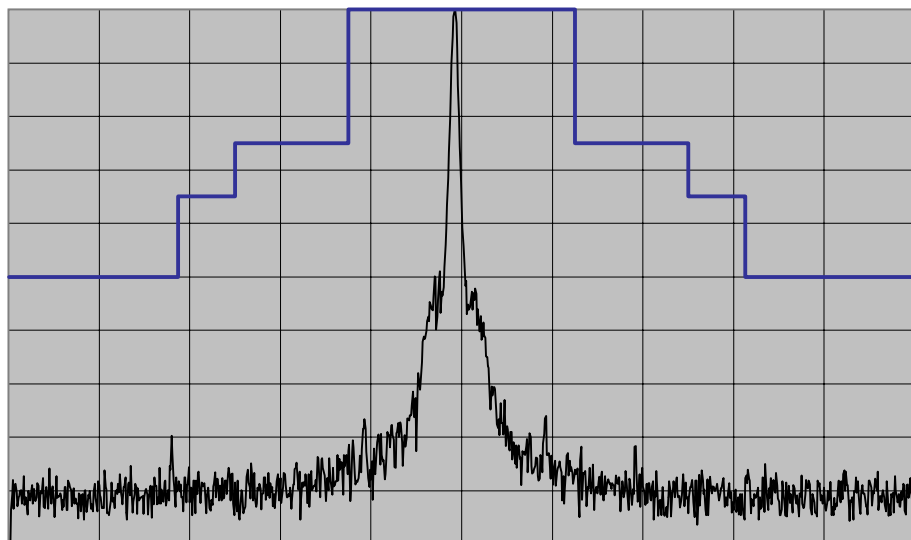
CENTER FREQ 489.95 MHz  
 SPAN 100 KHz  
 REF LEVEL 46 dBm  
 /DIV 10 dB/  
 ATT 20 dB  
 OFFSET 36.8 dB  
 RES BW 300 Hz  
 VIDEO BW 300 Hz  
 SWEEP TIME 5 s  
 AVG



Model Name	VX-4000U	Transmit Frequency	489.95 MHz
Serial Number	1H000003	Channel Spacing	25 kHz
Power Setting	High	Modulation	Voice

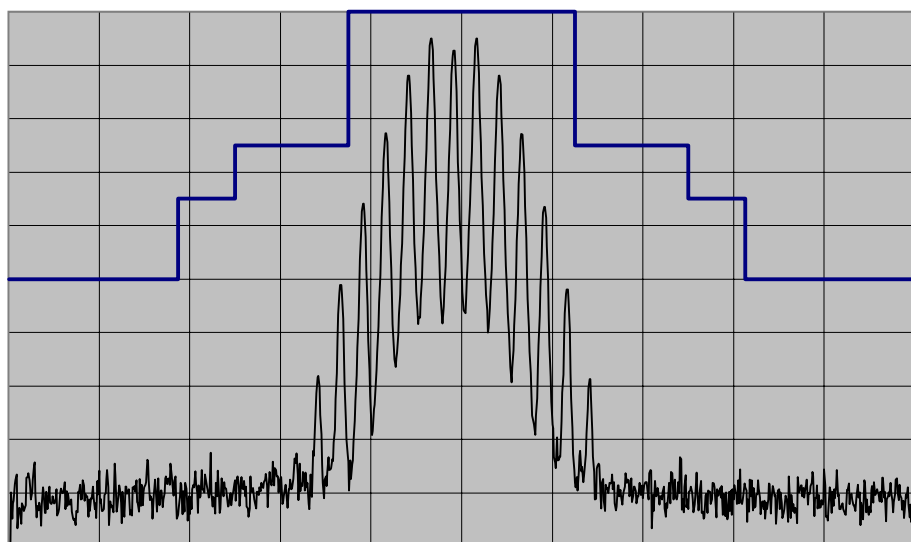
### Occupied Bandwidth

CENTER FREQ 489.95 MHz  
 SPAN 100 KHz  
 REF LEVEL 36.6 dBm  
 /DIV 10 dB/  
 ATT 20 dB  
 OFFSET 36.8 dB  
 RES BW 300 Hz  
 VIDEO BW 300 Hz  
 SWEEP TIME 5 s  
 AVG



Model Name	VX-4000U	Transmit Frequency	489.95 MHz
Serial Number	1H000003	Channel Spacing	25 kHz
Power Setting	Low	Modulation	None

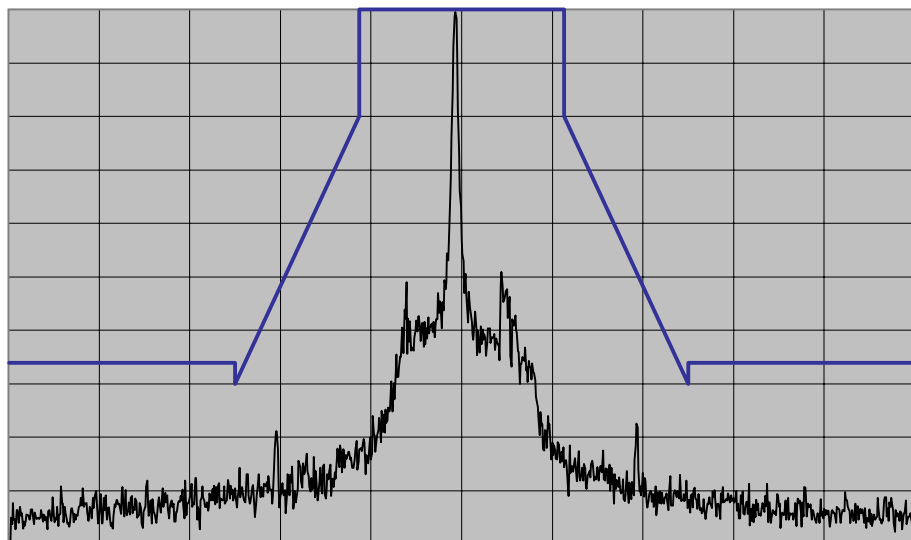
CENTER FREQ 489.95 MHz  
 SPAN 100 KHz  
 REF LEVEL 36.6 dBm  
 /DIV 10 dB/  
 ATT 20 dB  
 OFFSET 36.8 dB  
 RES BW 300 Hz  
 VIDEO BW 300 Hz  
 SWEEP TIME 5 s  
 AVG



Model Name	VX-4000U	Transmit Frequency	489.95 MHz
Serial Number	1H000003	Channel Spacing	25 kHz
Power Setting	Low	Modulation	Voice

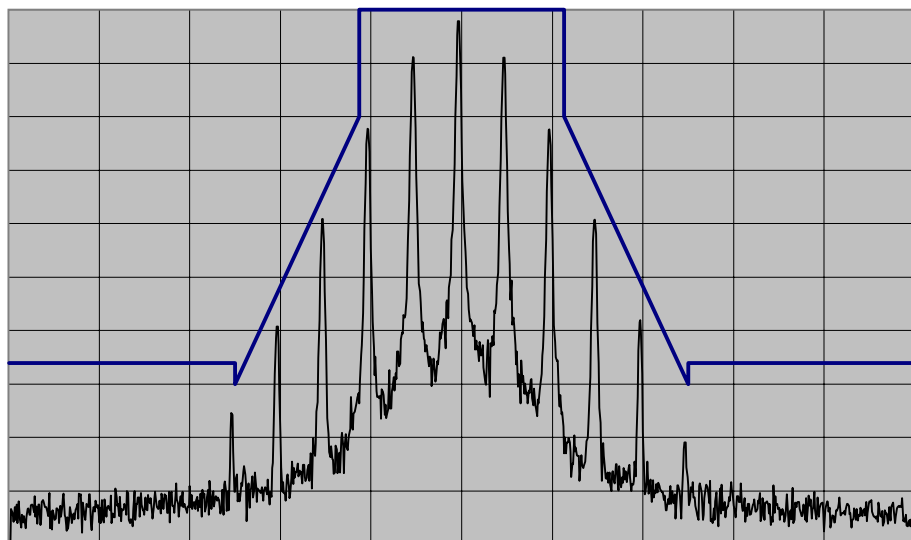
### Occupied Bandwidth

CENTER FREQ 489.95 MHz  
 SPAN 50 KHz  
  
 REF LEVEL 46 dBm  
 /DIV 10 dB/  
 ATT 20 dB  
 OFFSET 36.8 dB  
  
 RES BW 100 Hz  
 VIDEO BW 100 Hz  
  
 SWEEP TIME 30 s  
 AVG



Model Name	VX-4000U	Transmit Frequency	489.95 MHz
Serial Number	1H000003	Channel Spacing	12.5 kHz
Power Setting	High	Modulation	None

CENTER FREQ 489.9499 MHz  
 SPAN 50 KHz  
  
 REF LEVEL 46 dBm  
 /DIV 10 dB/  
 ATT 20 dB  
 OFFSET 36.8 dB  
  
 RES BW 100 Hz  
 VIDEO BW 100 Hz  
  
 SWEEP TIME 30 s  
 AVG

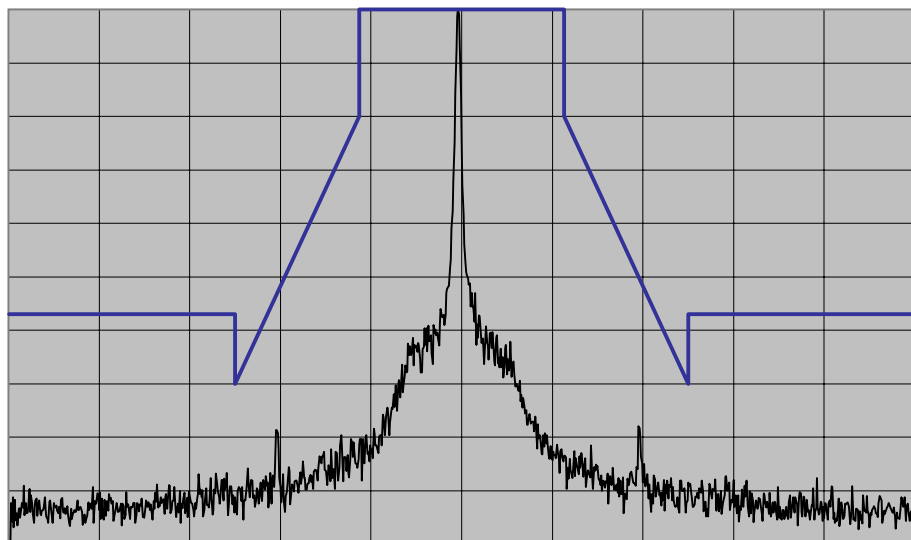


Model Name	VX-4000U	Transmit Frequency	489.95 MHz
Serial Number	1H000003	Channel Spacing	12.5 kHz
Power Setting	High	Modulation	Voice



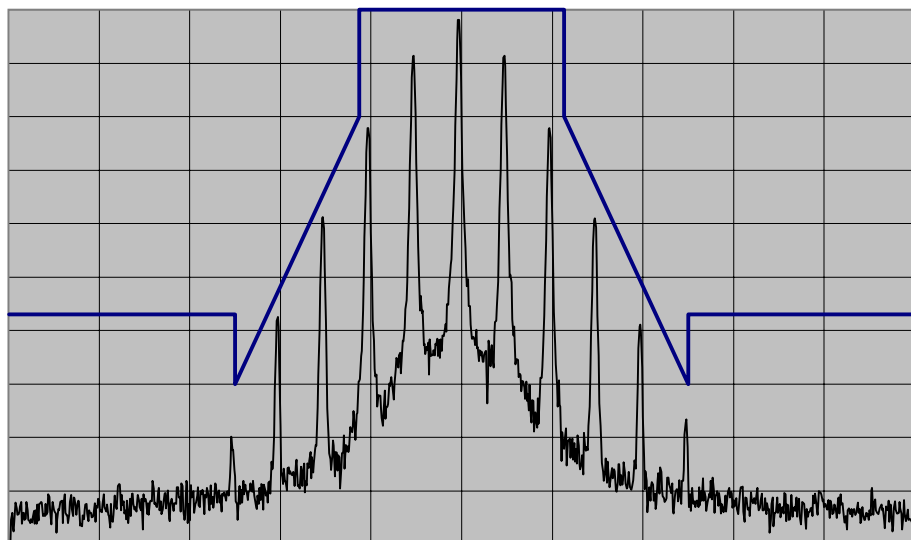
### Occupied Bandwidth

CENTER FREQ 489.9497 MHz  
 SPAN 50 KHz  
 REF LEVEL 36.5 dBm  
 /DIV 10 dB/  
 ATT 20 dB  
 OFFSET 36.8 dB  
 RES BW 100 Hz  
 VIDEO BW 100 Hz  
 SWEEP TIME 30 s  
 AVG



Model Name	VX-4000U	Transmit Frequency	489.95 MHz
Serial Number	1H000003	Channel Spacing	12.5 kHz
Power Setting	Low	Modulation	None

CENTER FREQ 489.9497 MHz  
 SPAN 50 KHz  
 REF LEVEL 36.5 dBm  
 /DIV 10 dB/  
 ATT 20 dB  
 OFFSET 36.8 dB  
 RES BW 100 Hz  
 VIDEO BW 100 Hz  
 SWEEP TIME 30 s  
 AVG



Model Name	VX-4000U	Transmit Frequency	489.95 MHz
Serial Number	1H000003	Channel Spacing	12.5 kHz
Power Setting	Low	Modulation	Voice

Test Equipment List

No.	Instrument	Type	Manufacturer	Serial Number
1	10 dB Attenuator	MODEL 49-10-43	Weinschel	KL458
2	3/6/10/20 dB Attenuator	AS-6	Weinschel	5834
3	30 dB Attenuator	8498A	Hewlett Packard	1801A02723
4	30 dB Attenuator	MODEL 53-30-33	Weinschel	KX496
5	Artificial Voice Generator	MG11A	Anritsu	M27878
6	Audio Analyzer	8903B	Hewlett Packard	2742A03633
7	Combiner	MP1612A	Anritsu	M10776
8	Combiner	B-D504	Iwatsu	520
9	Crystal Detector	8470B	Hewlett Packard	1822A16293
10	DC Power Supply	6033A	Hewlett Packard	3124A06236
11	DC Power Supply	6033A	Hewlett Packard	2728A02790
12	Environmental Chamber	FX4100	Etac	C8031K01
13	LISN	NNB-2/16Z	Telemeter Electronic	99021
14	LISN	NNB-2/16Z	Telemeter Electronic	99029
15	Measuring Receiver	ESPC	Rohde & Schwarz	8328271006
16	Modulation Analyzer	8901B	Hewlett Packard	3026A02806
17	Oscilloscope	54504A	Hewlett Packard	2944A00318
18	Power Meter	436A	Hewlett Packard	2604A25299
19	Power Sensor	8482A	Hewlett Packard	3318A24096
20	Power Sensor	8482B	Hewlett Packard	2349A02533
21	Pre Amplifier	8447D	Hewlett Packard	2944A09741
22	Pre Amplifier	8449B	Hewlett Packard	3008A00120
23	Sensor Module	11722A	Hewlett Packard	2716A02970
24	Signal Generator	MG3633A	Anritsu	M34780
25	Signal Generator	8642B	Hewlett Packard	2790A01050
26	Signal Generator	8642B	Hewlett Packard	2748A01491
27	Spectrum Analyzer	TR4173	Advantest	85580005
28	Spectrum Analyzer	8561B	Hewlett Packard	3040A00541
29	System Interface	8956A	Hewlett Packard	2931A00533
30	Terminator	MP752A	Anritsu	M66625
31	Terminator	M1426	Weinschel	BC3425

Reference Antennas (Substitute Antenna):

Frquency Range	Manufacturer	Model	Gain
30-250MHz	Anritsu	MP534A	0dB
250-1000MHz	Anritsu	MP651A	0dB
1000MHz-	EMCO	3115	6-16dBi

Measurement Antennas:

Frquency Range	Manufacturer	Model	Gain
30MHz-3GHz	Schaffner-Chase	CBL6143	1-8dB
3GHz-	EMCO	3115	6-16dBi