EMC Accessories Catalog

Transducers and Accessories

Agilent 11966 Series Antennas

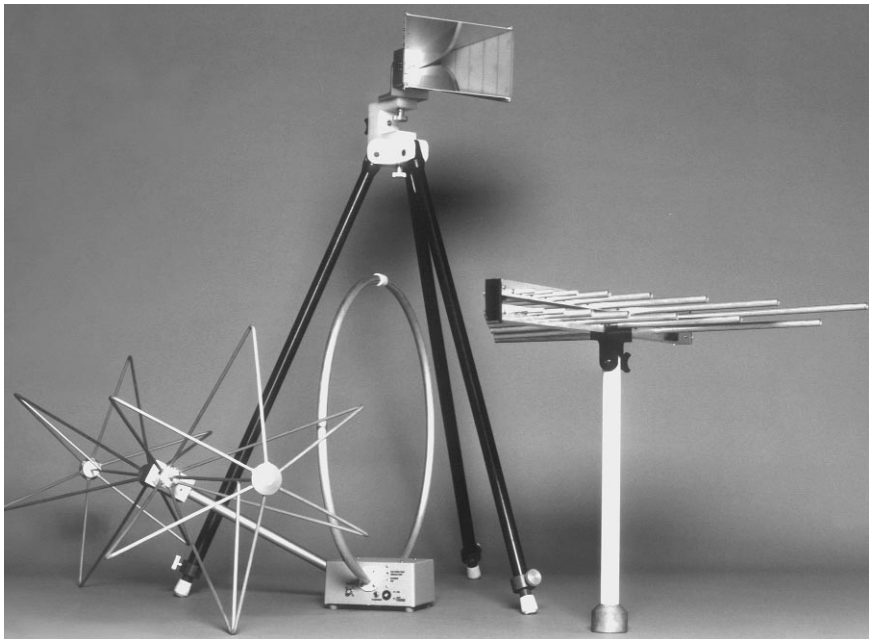
Agilent 11967 Series Conducted EMC Accessories

Agilent 11968 Series EMC Positioning Accessories

A fully equipped electromagnetic compatibility (EMC) laboratory requires a wide variety of instruments, equipment, and accessories to allow measurements to be made accurately and efficiently. On a smaller scale, design engineers and test technicians also need an assortment of measurement tools to evaluate their product designs prior to formal EMC compliance testing.

This EMC accessories catalog helps you quickly find the equipment you need to make your EMC measurements.

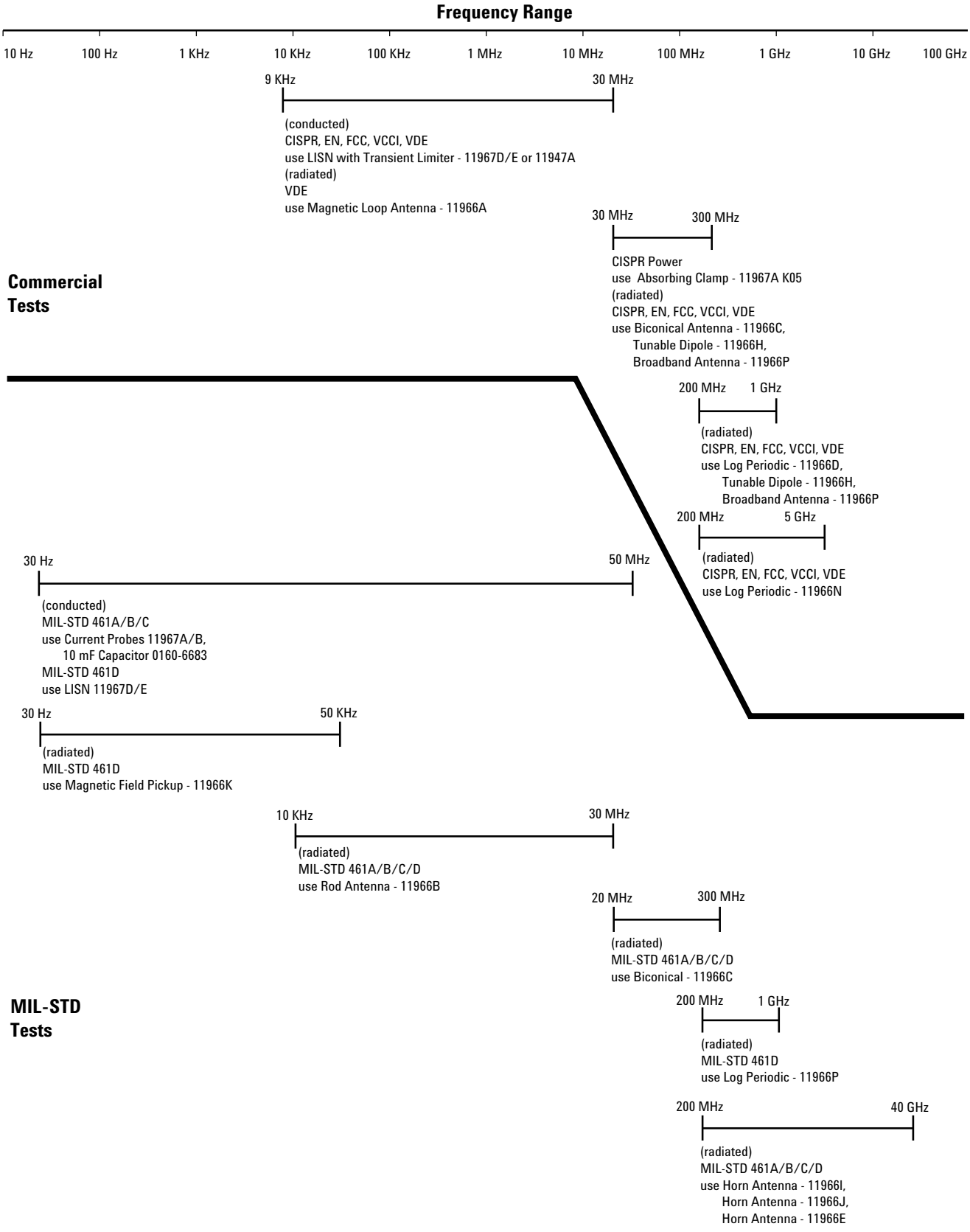
You'll find a large selection of antennas, current probes, LISNs, cables, tripods, preamplifiers, and other accessories. Each is designed to enhance your EMC measurement capabilities and provide lasting value.



Agilent Technologies is continually expanding its line of EMC accessories to ensure the most comprehensive line of EMC test equipment available. Be sure to check with your local Agilent sales representative if you need an item that is not listed in this product overview.

Agilent Technologies
Innovating the HP Way

Recommended Transducers for Commercial and MIL-STD EMI Testing



Antennas[1]

Agilent 11966A K24 Biconical Antenna

The rugged balun design of this antenna makes it especially suitable for susceptibility tests where high input powers are needed.

Frequency Range	20 MHz–300 MHz
Max Contin Power	2000
VSWR (avg)	1.9 : 1
Impedance	50 Ω
Connector Type	N female
Mounting Base	1/4 inch x 20 female thread

Agilent 11966A K38 Biconical Antenna

This versatile antenna is useful for both emissions and immunity measurements and can handle up to 300 watts of continuous power.

Frequency Range	30 MHz–300 MHz
Max Contin Power	300 W
VSWR (avg)	< 2.5 : 1
Impedance	50 Ω
Connector Type	N female
Mounting Base	1/4 inch x 20 female thread

Agilent 11955A Biconical Antenna

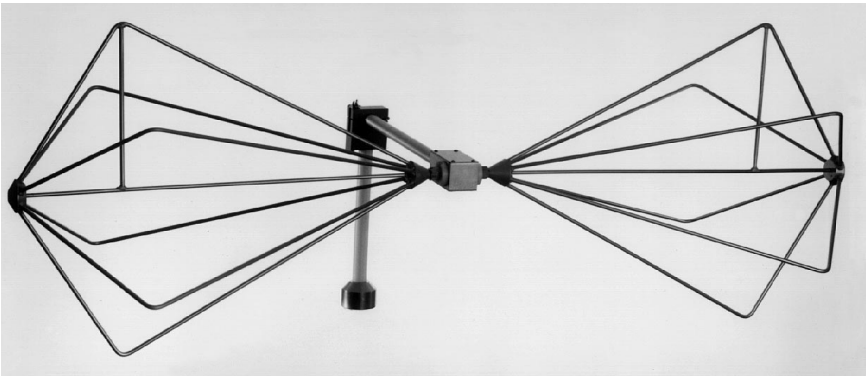
This economical antenna has typical antenna factors.

Frequency Range	30 MHz–300 MHz
Max Contin Power	0.5 W
VSWR (avg)	1.8 : 1
Impedance	50 Ω
Connector Type	N female
Mounting Base	1/4 inch x 20 female thread

Agilent 11966C Biconical Antenna

This state-of-the-art antenna uses ferrites in the balun and along the feedline to eliminate common-mode currents. It employs a novel element-cage design that allows an extremely smooth response curve.

Frequency Range	30 MHz–300 MHz
Max Contin Power	0.5 W
VSWR (avg)	< 1.8 : 1 (with 6 db pads)
Impedance	50 Ω
Connector Type	N female
Mounting Base	1/4 inch x 20 female thread



1. All antennas sold by Agilent are individually calibrated. They include a calibration certificate showing actual performance data. The antenna factors shown in this catalog are intended to show typical performance only.

	11966A K24	11966A K38
Frequency (MHz)	**Antenna Factors (dB)**	
20	11.5	—
30	13.0	13.5
40	14.7	15
50	12.2	12.7
60	10.1	10.4
70	8.9	8.9
80	8.0	8.5
90	8.9	8.8
100	9.6	9.6
110	11.3	11.3
120	12.8	12.6
130	14.5	14.1
140	15.9	16.0
150	16.5	16.6
160	16.0	16.5
170	15.3	15.6
180	14.5	14.8
190	14.5	14.5
200	13.8	14.1
210	14.0	14.1
220	14.5	14.4
230	15.8	15.8
240	16.8	17.0
250	18.3	18.9
260	19.9	20.3
270	21.4	22.0
280	22.6	23.1
290	20.9	21.0
300	24.6	22.7

Frequency (MHz)	**Typical Antenna Factor (dB)**
30	19.0
40	17.9
50	13.2
60	9.0
70	6.6
80	7.6
90	9.2
100	10.5
110	12.0
120	14.0
130	16.3
140	18.4
150	19.4
160	19 0
170	18.3
180	17.6
190	17.0
200	16.7
210	17.0
220	17.4
230	18.2
240	19.1
250	20.4
260	22.4
270	24.5
280	25.5
290	25.0
300	24.9

Antennas[1]

Agilent 11956A Log Periodic Antenna

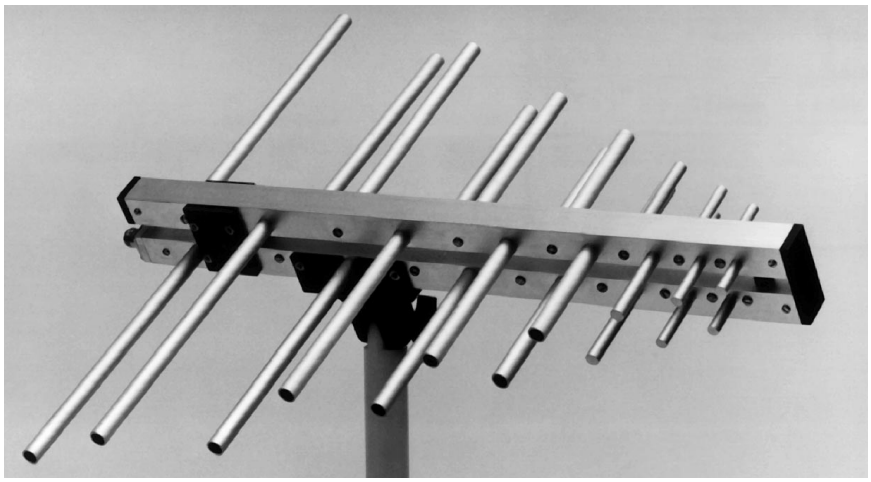
This economical antenna has typical antenna factors.

Frequency Range	200 MHz–1 GHz
VSWR (avg)	< 2 : 1
Impedance	50 Ω
Connector Type	Type-N
Mounting Base	1/4 inch x 20 female thread

Agilent 11966D Log Periodic Antenna

The 11966D is a broadband, relatively high-gain antenna that is suitable for both commercial and military EMC measurements.

Frequency Range	200 MHz–1 GHz
Max Contin Power	1000 W
VSWR (avg)	< 2 : 1
Impedance	50 Ω
Connector Type	N female
Mounting Base	1/4 inch x 20 female thread

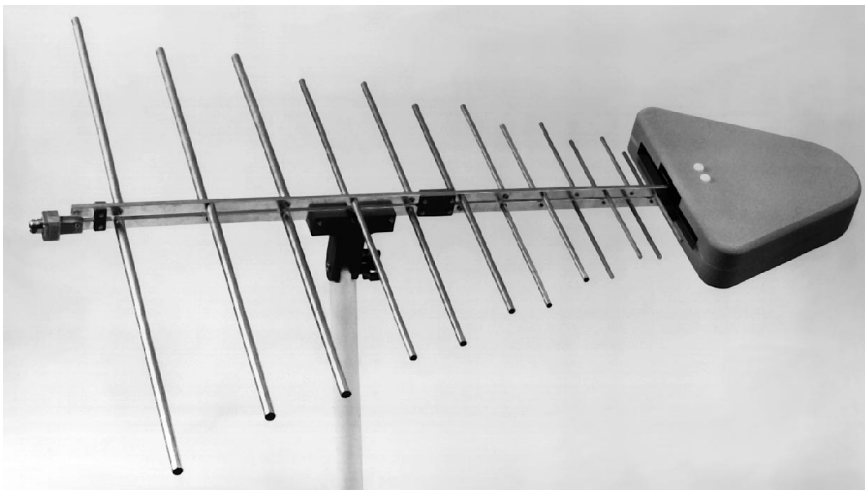


Frequency (MHz)	Typical Antenna Factor (dB)
200	17 0
225	14.8
250	14 3
275	14.9
300	16.8
325	17.5
350	18.7
375	17.5
400	17.1
425	17.4
450	18.4
475	19.8
500	20.5
525	19.2
550	19.5
575	19.7
600	20.7
625	21.5
650	22.0
675	21.6
700	21.6
725	22.1
750	22.7
775	22.8
800	22.6
825	22.6
850	23.2
875	24.0
900	24.4
925	24.3
950	23.9
975	24.4
1000	25.1

Agilent 11966N Log Periodic Antenna

This antenna has similar performance characteristics to the 11966D, but has an extended frequency range to 5 GHz. This is useful for some of the new commerical test requirements, such as FCC part 15 limits for high-speed unintentional radiators, which now extend beyond 1 GHz.

Frequency Range	200 MHz–5 GHz
Max Contin Power	80 W
VSWR (avg)	2 : 1
Impedance	50 Ω
Connector Type	N female
Mounting Base	1/4 inch x 20 female thread



Frequency (GHz)	Antenna Factor (dB)
0.2	10
0.5	17
1.0	23
1.5	27
2.0	29
2.5	32
3.0	34
3.5	37
4.0	38
4.5	41
5.0	42

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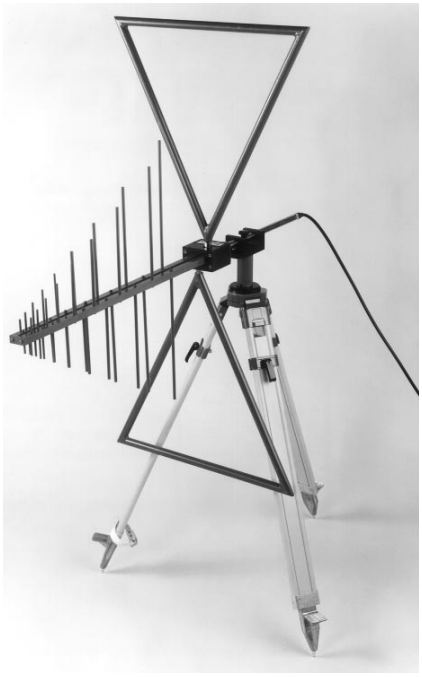
Antennas[1]

Agilent 11966P Broadband Antenna

The 11966P broadband antenna covers 30 MHz to 1 GHz. This broadband antenna removes the need to change antennas above 200 MHz when making radiated EMI measurements. The antenna's high power handling capability makes it ideal for immunity testing generating fields of up to 10 volts/meter.

Frequency (MHz)	Typical Antenna Factor (dB)
30	18.2
50	8.0
70	5.0
90	8.0
100	9.5
150	11.0
200	10.0
250	12.0
300	13.0
350	14.5
400	16.2
450	16.7
500	18.5
550	19.0
600	19.8
650	20.4
700	21.1
750	22.0
800	23.0
850	23.0
900	23.0
950	25.0
1000	25.0



Frequency Range	30 MHz–1 GHz
Maximum Continuous Power	130 W
VSWR (avg)	2 : 1
Impedance (nominal)	50 Ω
Connector Type	N (female)

Note: Tripod not included

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EMC Accessory Application Guide

Commercial Measurements

Agency	Test	Frequency Range	Recommended Accessories
FCC	Part 15		
	conducted	450 kHz–30 MHz	11967D or E LISN
	radiated	30 MHz–300 MHz	11966C Biconical Antenna
		200 MHz–1 GHz	11966D Log Periodic Antenna
			or
		28 MHz–1 GHz	11966H Dipole Antenna Set[1]
			11966P Broadband Antenna
		200 MHz–5 GHz	11966N Log Periodic Antenna
VDE	0871, 0875		
	conducted	10 kHz–30 MHz	11967D or E LISN
	radiated	10 kHz–30 MHz	11966A Active Loop
		30 MHz–300 MHz	11966C Biconical Antenna
		200 MHz–1 GHz	11966D Log Periodic Antenna
			or
		28 MHz–1 GHz	11966H Dipole Antenna Set[1]
CISPR	14		
	power	30 MHz–300 MHz	11967A KO5 Absorbing Clamp
	22		
	conducted	150 kHz–30 MHz	11967D or E LISN
	radiated	28 MHz–1 GHz	11966H Dipole Antenna Set[1]
VCCI			
	conducted	150 kHz–30 MHz	11967D or E LISN
	radiated	30 MHz–300 MHz	11966C Biconical Antenna
		200 MHz–1 GHz	11966D Log Periodic Antenna
			or
		28 MHz–1 GHz	11966H Dipole Antenna Set[1]
CENELEC	EN 55014		
	conducted	150 kHz–30 MHz	11967D or E LISN
	radiated	30 MHz–300 MHz	11966C Biconical Antenna
	EN 55022		
	conducted	150 kHz–30 MHz	11967D or E LISN
	radiated	30 MHz–1 GHz	11966C Biconical Antenna
			11966D Log Periodic Antenna
	EN 55011		
	conducted	150 kHz–30 MHz	11967D or E LISN
	radiated	150 kHz–1 GHz	11966A Active Loop Antenna
			11966C Biconical Antenna
			11966D Log Periodic Antenna

1. These adjustable dipole antennas are particularly suited for making accurate site attenuation measurements, such as those outlined in the FCC's OST-55 bulletin. They can also be used for making measurements of emissions from the equipment under test (EUT). Broadband antennas, such as biconical and log periodic antennas, are typically used for emissions measurements of the EUT because of their ease of use.

Military Measurements

Agency	Test	Frequency Range	Recommended Accessories
MIL-STD	461/462		
	CE-01	30 Hz–15 kHz	11967B Current Probe 0160-6683 10 µf Capacitor
	CE-03	15 kHz–50 MHz	11967A Current Probe 0160-6683 10 µf Capacitor
	CE-06	10 kHz–12.4 GHz	11729-60014 Preamplifier
	RE-01	30 Hz–15 kHz	11966K Magnetic Coil
	RE-02	14 kHz–30 MHz 30 MHz–300 MHz 200 MHz–1 GHz 1 GHz–10 GHz	11966B Active Rod 11966C Biconical Antenna 11966D Log Periodic Antenna[2] or 11966F Conical Spiral Antenna 11966E Waveguide Horn Antenna or 11966G Conical Spiral Antenna 8449B Preamplifier[3]
	RE-03	10 kHz–30 MHz 30 MHz–300 MHz 200 MHz–1 GHz 1 GHz–10 GHz 1 GHz–18 GHz 1 GHz–26.5 GHz	11966B Active Rod 11966C Biconical Antenna 11966D Log Periodic Antenna or 11966F Conical Spiral Antenna 11966G Conical Spiral Antenna 11966E Waveguide Horn Antenna 8449B Preamplifier[3]
	CE-101	30 Hz–10 kHz	11967B Current Probe 0160-668310 µf Capacitor
	CE-102	10 kHz–10 MHz	11967D or E LISN
	RE-101	30 Hz–50 kHz	11966K Magnetic Field Pickup Coil
	RE-102	10 kHz–30 MHz 30 MHz–200 MHz 200 MHz–2 GHz 25 Hz–18 GHz	11966B Active Rod 11966C Biconical Antenna 11966I Horn Antenna 11966E Double-ridged Horn Antenna

2. MIL-STD radiated emission 02 tests can be performed with either linearly polarized antennas, such as the log periodic, or circularly polarized antennas, such as the conical spiral. Linear antennas offer slightly better gain and antenna factor, but they require separate scans over the full frequency range once in horizontal polarization and again in vertical polarization. While circularly polarized antennas typically are slightly less sensitive, they allow the measurement to be made in a single scan because they can receive signals that have either horizontal or vertical polarization.
3. The 8449B microwave preamplifier offers improved sensitivity for microwave emissions measurements. With improved sensitivity, wider receiver bandwidths can be used, result in faster measurement times.

Ordering Information

Listed by Agilent Technologies Model Number

11500A	Six foot RG-214U Cable with Type-N Connector
11500F	150 cm Cable (APC 3.5 Male Connectors)
11940A	Close Field Probe 30 MHz to 1 GHz
11941A	Close Field Probe 9 KHz to 30 MHz
11945A	Close Field Probe Set
11947A	Transient Limiter
11955A	Biconical Antenna
11956A	Log Periodic Antenna
11960A	EMC Preselector
11961A	EMI Measurement Software
11966A	Active Magnetic Loop Antenna
11966A K12	Passive Loop Set
11966A K24	Biconical Antenna 20 MHz to 300 MHz (2000 Watts)
11966A K30	Passive Rod Antenna
11966A K38	Biconical Antenna 30 MHz to 300 MHz (300 Watts)
11966A K40	Royce Field Site Source
11966A K47	Five Meter Cable (APC 3.5 Male Connector)
11966A K48	Ten Meter Cable (APC 3.5 Male Connector)
11966B	Active Monopole Antenna
11966C	Biconical Antenna 30 MHz to 300 MHz
11966D	Log-Periodic Antenna 200 MHz to 1 GHz
11966E	Double-Ridged Waveguide Horn Antenna 1 to 18 GHz
11966F	Conical Log Spiral Antenna 200 MHz to 1 GHz
11966G	Conical Log Spiral Antenna 1 GHz to 10 GHz
11966H	Dipole Antenna Set 28 MHz to 1000 MHz
11966I	Horn Antenna 200 MHz to 2 GHz
11966J	Horn Antenna 18 GHz to 40 GHz
11966K	Magnetic Field Pickup Coil 20 Hz to 50 kHz
11966L	Coaxial Cable 10 Meter Type-N
11966M	Coaxial Cable 10 Meter BNC
11966N	Log Periodic Antenna 200 MHz to 5 GHz
11966P	Broadband Antenna
11967A K05	Absorbing Clamp
11967A K06	Cavity Rejection Network
11967A K23	Bridged-T Rejection Networks
11967A	Current Probe 15 kHz to 50 MHz
11967B	Current Probe 20 Hz to 2 MHz
11967D	10 Amp Line Impedance Stabilization Network
11967E	25 Amp Line Impedance Stabilization Network
11968A K07	Shielded Room Kit
11968B	Manual Antenna Positioning Mast
11968C	Antenna Tripod
11968E	Manual Equipment Test Turntable
8447F H64	Dual Preamplifier 0.1 to 1300 MHz
8449B	Microwave Preamplifier 1 GHz to 26.5 GHz
85650A	Quasi-Peak Adapter
85685A	RF Preselector
85876A	Commercial Radiated EMI Software
85878A	EMI Report Generator
0160-6683	10 µF Capacitor
8120-1840	122 Centimeter Coaxial Cable
11729-60014	Low Noise Preamplifier

Agilent Technologies' Test and Measurement Support, Services, and Assistance

Agilent Technologies aims to maximize the value you receive, while minimizing your risk and problems. We strive to ensure that you get the test and measurement capabilities you paid for and obtain the support you need. Our extensive support resources and services can help you choose the right Agilent products for your applications and apply them successfully. Every instrument and system we sell has a global warranty. Support is available for at least five years beyond the production life of the product. Two concepts underlie Agilent's overall support policy: "Our Promise" and "Your Advantage."

Our Promise

"Our Promise" means your Agilent test and measurement equipment will meet its advertised performance and functionality. When you are choosing new equipment, we will help you with product information, including realistic performance specifications and practical recommendations from experienced test engineers. When you use Agilent equipment, we can verify that it works properly, help with product operation, and provide basic measurement assistance for the use of specified capabilities, at no extra cost upon request. Many self-help tools are available.

Your Advantage

"Your Advantage" means that Agilent offers a wide range of additional expert test and measurement services, which you can purchase according to your unique technical and business needs. Solve problems efficiently and gain a competitive edge by contracting with us for calibration, extra-cost upgrades, out-of-warranty repairs, and on-site education and training, as well as design, system integration, project management, and other professional services. Experienced Agilent engineers and technicians worldwide can help you maximize your productivity, optimize the return on investment of your Agilent instruments and systems, and obtain dependable measurement accuracy for the life of those products.

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