Anritsu Spectrum Master MS2711D Specs Provided by www.AAATesters.com

Product Brochure

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Spectrum Master™ MS2711D

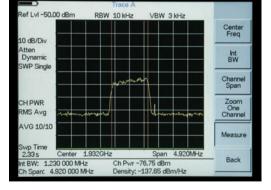
Fast, Accurate, Repeatable, Portable Spectrum Analysis



Accurate | Rugged | Easy to use - Powerful

The Anritsu Spectrum Master MS2711D provides ultimate measurement flexibility in a package that is ruggedized for field environments and light enough for mobile applications. Unlike traditional spectrum analyzers, the MS2711D features a rugged, ultra-lightweight, battery-operated design that allows users to conduct spectrum analysis measurements – anywhere, anytime.

With the MS2711D, you can locate, identify, record, and solve communication systems problems quickly and easily, and with incredible accuracy. Whether you are installing, maintaining, or troubleshooting, the MS2711D provides exceptional performance combined with ease-of-use and broad functionality – making it a perfect solution for conducting field measurements in the 100 kHz to 3.0 GHz frequency range. For instance, it is perfect for locating the source of interfering signals. The addition of Option 25, Interference Analysis, makes the instrument particularly well suited for the application.



Rugged and Reliable

Because the MS2711D was designed specifically for field environments, it can easily withstand the day-to-day punishment of field use. The analyzer is almost impervious to the bumps and bangs typically encountered by portable field-based equipment.

Easy-to-Use

At less than five pounds, the MS2711D is the lightest fully-functional spectrum analyzer available. Operation is straightforward; measurements are obtained through a menu-driven user interface that is easy to use and requires little training. The daylight viewable TFT display is large and high-resolution, making interpreting test results easy and quick.

A full range of marker capabilities — such as peak, center, and delta functions — give users fast and comprehensive analysis of displayed signals. Limit lines simplify amplitude measurements, allowing users to create quick, simple, pass/fail tests. Frequency, span, and amplitude functions are easily configured for optimum performance. Used together with the Save Setup feature, these functions make testing easier and faster for users of all experience levels.

Spectrum Analysis For Field Applications

Options

The MS2711D's capabilities expand to meet your needs. Available options include High Accuracy Power Meter, Internal Power Meter, and Channel Scanner. The optional Interference Analyzer provides users with everything they need to locate and identify interfering signals. An internal source for transmission measurements enable users to make 2-port measurements of active and passive devices.

Powerful Trace Management

The unit's internal memory stores up to 10 test setups and 300 measurement traces. The stored data can be easily downloaded to a personal computer (PC) or a printer via an RS-232 serial cable. A notebook computer can be used with the RS-232 interface for automated control and data collection in the field. Handheld Software Tools[™] is a powerful data analysis software that comes with every MS2711D. This software allows you to print professional reports for your customers documenting your measurements and saving the traces for future comparison.



To meet the challenges of today's wireless systems, the revolutionary MS2711D handheld spectrum analyzer incorporates a pre-amp which increases the analyzer's sensitivity and dynamic range, and improves measurement time. The built-in pre-amp makes the MS2711D particularly effective in measuring low-level signals.

The handheld spectrum analyzer's sensitivity is \leq -135 dBm (100 Hz RBW; full span). With the preamplifier turned on, the MS2711D can identify and make measurements on low-level signals much faster than previously possible.

+43 dBm Maximum Safe Input Level

Unlike many other spectrum analyzers on the market today, the MS2711D can tolerate an input signal of +43 dBm (20 watts) – without damage. You can be assured that the MS2711D can survive in even the toughest RF environments.









MA24104A Inline High Power Sensor

Light Weight

Weighing less than five pounds fully loaded including a NiMH battery, this fully functional handheld spectrum analyzer is light enough to take anywhere, including up a tower.

"Smart" Measurements

The MS2711D has dedicated routines for one-button measurements of field strength, channel power, occupied bandwidth, Adjacent Channel Power Ratio (ACPR), C/I, and interference analysis. These are increasingly critical measurements for today's wireless communication systems. The simple interface for these complex measurements significantly reduces test time and increases analyzer usability.

Fast Sweep Speed

The MS2711D can do a full span sweep in ≤ 1.1 seconds, and sweep speed in zero span can be set from less than 50 μ s up to 200 seconds. Fast sweeps simplify the capture of intermittent interfering signals.

AM/FM/SSB Demodulator

A built-in demodulator for AM, narrowband FM, wideband FM and single sideband (selectable USB and LSB) allows a technician to easily identify interfering signals.

Dynamic Attenuation

With Dynamic Attenuation enabled, the MS2711D automatically activates or de-activates the built-in preamplifier according to the overall input signal amplitude. Dynamic attenuation tracks the input signal level, automatically adjusting the attenuation level to protect the MS2711D in situations of high RF signal levels, or enhancing the instrument's sensitivity in situations of low-level RF signal input.

High Accuracy Power Meter (Option 19)

Anritsu's High Accuracy Power Meter option enables users to make high accuracy RMS measurements, perfect for both CW and digitally modulated signals such as CDMA/EV-DO, GSM/EDGE, and WCDMA/HSDPA. This option requires sensor PSN50 or MA24104A. The PSN50 sensor provides high accuracy measurements from 50 MHz to 6 GHz with a dynamic range from –30 to +20 dBm. The MA24104A is an Inline High Power Sensor with a frequency range from 600 MHz to 4 GHz and can measure signals as high as 150 W. Both of the sensors are equipped with an RS-232 interface for fast and easy connection to the Spectrum Master.

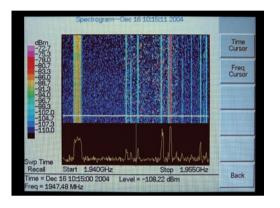
Transmission Measurement (Option 21)

An optional built-in 25 MHz to 3 GHz signal source provides the capability to measure loss or gain of two-port devices such as filters, cables, attenuators and amplifiers.

00 dBm	RBW 3 kHz		Hz	
				Set IA
AN	ALYSIS RESUL			Freq
IA Freq=1932.38 MHz Cell Standard = 1250 kHz CDMA				Measure
Press ENTER to continue			IA Freq To Center	
				IA Freq As Marker M1
	<u>i</u>			
Center 1	.932GHz	Span 3	8.874MHz	Back
	AN IA Fr Cell Fress	0 dBm RBW 3 kHz ANALYSIS RESUL IA Freq=1932.38 M Cell Standard = 125 Est. Bandwidth = 1.0	0 dBm RBW 3 kHz VBW 1 k ANALYSIS RESULT IA Freq=1932.36 MHz Cel Standard = 1250 kHz CDMA Est. Bandwidth = 1.020 MHz Press ENTER to continue	0 dBm RBW 3 kHz VBW 1 kHz ANALYSS RESULT IA Freq=1932.38 MHz Cell Standard = 1250 kHz CDMA Est. Bandwidth = 1.020 MHz Press ENTER to continue

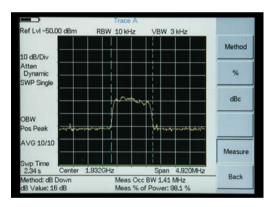
Carrier to Interference Measurement

As more 802.11 access points are installed, there will be an increasing level of interference in the 2.4 GHz band occupied by this service and other devices such as cordless telephones. This measurement capability makes it simple for an access point installer to determine if the level of interference is sufficient to cause difficulty for users in the intended service area, and can show the need to change to another access channel.



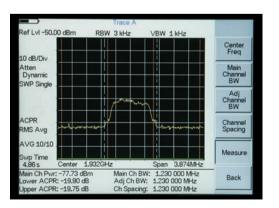
Interference Analysis

Interference Analysis is Option 25 in the MS2711D. The capabilities delivered by this option are a spectrogram display that shows multiple sweeps over time with color being used to show signal amplitude. This is a powerful means of seeing interfering signals as they come and go. A received signal strength indicator (RSSI) is part of this option. RSSI shows a graph of the signal strength at a single frequency over time. Also included is an audible signal strength indicator used with a directional antenna to determine the direction of arrival of a signal. The audible output can be heard using the built-in speaker or, for privacy, a set of headphones.



Occupied Bandwidth

This measurement calculates the bandwidth containing the total integrated power occupied in a given signal bandwidth. There are two different methods of calculation depending on the technique used to modulate the carrier. The user can specify percent of power or the "x" dB down point, where "x" can be from 3 dB to 120 dB below the carrier.

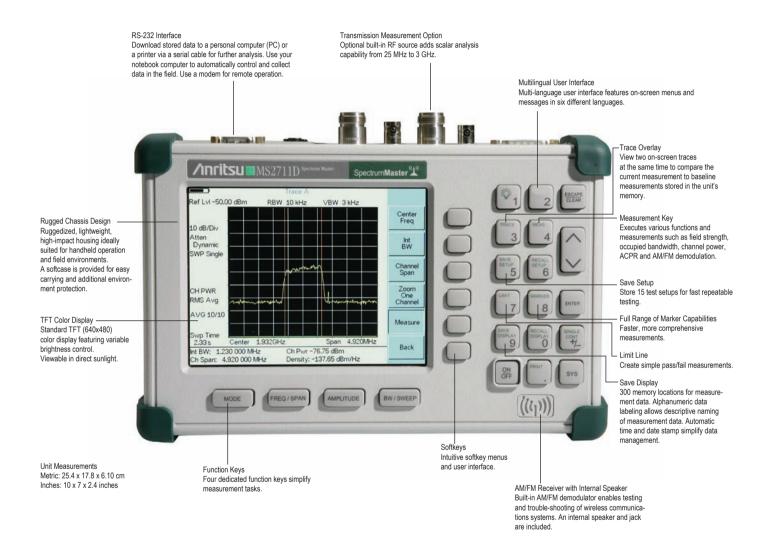


Adjacent Channel Power Ratio

A common transmitter measurement is that of adjacent channel leakage power. This is the ratio of the amount of leakage power in an adjacent channel to the total transmitted power in the main channel. This measurement is used to replace the traditional two-tone intermodulation distortion (IMD) test for system non-linear behavior.

The result of an ACPR measurement can be expressed either as a power ratio or a power density. In order to calculate the upper and lower adjacent channel values, the MS2711D allows the adjustment of four parameters to meet specific measurement needs: main channel center frequency, measurement channel bandwidth, adjacent channel bandwidth and channel spacing. When an air interface standard is specified in the MS2711D, all these values are automatically set to the normal values for that standard.

Spectrum Master – Fast, Accurate, Repeatable, Portable Spectrum Analysis



Specifications

Frequency

Frequency		
Frequency Range	100 kHz to 3.0 GHz (tuneable to 9 kHz)	
Frequency Reference	Aging: ±1 ppm/yr, Accuracy: ±2 ppm	
Frequency Span	10 Hz to 2.99 GHz in 1, 2, 5 step selections in auto mode, plus zero span	
Sweep Time	\leq 1.1 sec full span; \leq 50 µsec to 20 sec selectable in zero span	
Resolution bandwidth (-3 dB width)	100 Hz to 1 MHz in 1-3 sequence, ±5%	
Video bandwidth (-3 dB)	3 Hz to 1 MHz in 1-3 sequence, $\pm 5\%$ typical	
SSB Phase Noise (1 GHz) at 30 kHz Offset:	≤-75 dBc/Hz	
Spurious Responses Input Related	≤-45 dBc	
Spurious Residual Responses	≤-90 dBm, ≥10 MHz ≤-80 dBm, <10 MHz (10 kHz RBW, pre-amp on)	
Amplitude		
Total Level Accuracy	±1 dB typical (±1.5 dB max), ≥10 MHz to 3 GHz, ±2 dB typical <10 MHz for input signal levels ≥-60 dBm, excluding input VSWR mismatch	
Measurement Range	+20 dBm to -135 dBm	
Input Attenuator Range	0 to 51 dB, selected manually or automatically coupled to the reference level. Resolution in 1 dB steps.	
Displayed Average Noise Level (Input terminated, 0 dB attenua- tion, RMS detection, 100 Hz RBW)	<-135 dBm, ≥10 MHz (preamp on) ≤-115 dBm, <10 MHz (preamp on)	
Dynamic Range	>65 dB typical	
Display Range	1 to 15 dB/division, in 1 dB steps, 10 divisions displayed	
Scale Units	dBm, dBV, dBmV, dBµV, V, W	
RF Input VSWR	(with \geq 20 dB attenuation), 1.5:1 typical, (10 MHz to 2.4 GHz)	
General		
Internal Trace Memory	300 maximum	
Setup Storage	15 test setups	
Display	VGA Color (option 3) with adjustable backlight	
Inputs and Outputs Ports	RF Out: Type N, female, 50 Ω Maximum Input without Damage: +23 dBm, ± 50 VDC RF In: Type N, female, 50 Ω Maximum Input without Damage: +43 dBm (peak), ± 50 VDC	
Serial Interface	RS-232 9 pin D-sub, three wire serial	
Electromagnetic Compatibility	Meets European community requirements for CE marking.	
Safety	Conforms to EN 61010-1 for Class 1 portable equipment	
Temperature	Operating: -10 °C to 55 °C, humidity 85% or less Non-operating: -51 °C to +71 °C (Recommend the battery be stored separately between 0 °C and 40 °C for any prolonged storage period.)	
Environmental	MIL-PRF-28800F Class 2	
Power Supply	External DC Input: +12 to +15 VDC, 3A max Internal: NiMH battery: 10.8 VDC, 1800 mAh	
Dimensions	Size (W x H x D): 25.4 cm x 17.8 cm x 6.10 cm (10.0 in x 7.0 in x 2.4 in) Weight: 2.14 kg (4.7 lbs.) includes battery, 2.28 kg (5 lbs) includes transmission measurement signal source	

Option 19 – High Accuracy Power Meter

Compatible Sensors PSN50 and MA24104A	PSN50 High Accuracy Power Sensor Frequency Range: 50 MHz to 6 GHz Measurement Range: -30 to +20 dBm Linearity: ± 0.13 dB Connector: Type N, male, 50 Ω Complete Technical Datasheet: p/n 11410-00423	
	MA24104A Inline High Power Sensor Frequency Range: 600 MHz to 4 GHz Measurement Range: +3 dBm to +51.76 dBm (2 mW to 150 W) Linearity: \pm 0.13 dB Connectors: Type N, female, 50 Ω Complete Technical Datasheet: p/n 11410-00483	

Option 21 – Transmission Measurement Specifications

Frequency Range	25 MHz to 3 GHz
Frequency Resolution	10 Hz
Output Power Level	-10 dBm typical
Dynamic Range	80 dB, 25 MHz to 2 GHz 60 dB, >2 GHz to 3 GHz (when using dynamic attenuation)
Output Impedance	50 Ω

Option 25 – Interference Analyzer

Signal Strength with audible tone option

RSSI

Spectrogram

Option 27 – Channel Scanner

Frequency Range	100 kHz to 3.0 GHz
Frequency Accuracy	± 10 Hz + Time base error, 99% Confidence level
Measurement Range	+20 dBm to -110 dBm
Channel Power	± 1 dB typical (± 1.5 dB max)
Adjacent Channel Power Accuracy	± 0.75 dBc

Option 29 – Power Meter Specifications

Frequency Range	3 MHz to 3.0 GHz	
Measurement Range	-80 dBm to +20 dBm (+80 dBm with 60 dB external attenuator)	
Display Range	-80 dBm to +80 dBm	
Offset Range	0 to +60 dB	
Accuracy**	\pm 1 dB typical (± 1.5 dBm max), ≥ 10 MHz to 3 GHz ± 2 dB typical, 3 MHz to <10 MHz	
VSWR	1.5:1 typical ($P_{in} > -30 \text{ dBm}$, >10 MHz to 2.4 GHz)	
Maximum Power	+20 dBm (0.1W) without external attenuator	
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**(Excludes Input VSWR)

Ordering Information

Model: MS2711D - Handheld Spectrum Analyzer: 100 kHz to 3 GHz

Options	
Option 19	High Accuracy Power Meter (sensor not included)
Option 21	Transmission Measurement
Option 25	Interference Analyzer (best with directional antenna)
Option 27	Channel Scanner
Option 29	Power Meter
Standard Acce	essories
65717	Soft Carrying Case
633-27	Rechargeable Battery, Ni-MH
40-168-R	AC-DC Adapter
806-141	Automotive Cigarette Lighter 12 Volt DC Adapter
2300-347	Handheld Software Tools CDROM
800-441	Serial Interface Cable (null modem type)
551-1691-R	USB to RS-232 Adapter Cable
10580-00097	MS2711D Spectrum Master User's Guide
	One Year Warranty
Precision Adap	oters
34NN50A	Precision Adapter, N(m)-N(m), DC to 18 GHz, 50 Ω
34NFNF50	Precision Adapter, N(f)-N(f), DC to 18 GHz, 50 Ω
Adapters	
510-90-R	Adapter, 7/16 DIN(f)-N(m), DC to 7.5 GHz, 50 Ω
510-91-R	Adapter, 7/16 DIN(f)-N(f), DC to 7.5 GHz, 50 Ω
510-92-R	Adapter, 7/16 DIN(m)-N(m), DC to 7.5 GHz, 50 Ω
510-93-R	Adapter, 7/16 DIN(m)-N(f), DC to 7.5 GHz, 50 Ω
510-96-R	Adapter, 7/16 DIN(m)-7/16 DIN(m), DC to 7.5 GHz, 50 Ω
510-97-R	Adapter, 7/16 DIN(f)-7/16 DIN(f), DC to 7.5 GHz, 50 Ω
1091-26-R	Adapter, N(m)-SMA(m), DC to 18 GHz, 50 Ω
1091-27-R	Adapter, N(m)-SMA(f), DC to 18 GHz, 50 Ω
1091-80-R	Adapter, N(f)-SMA(m), DC to 18 GHz, 50 Ω
1091-81-R	Adapter, N(f)-SMA(f), DC to 18 GHz, 50 Ω
1091-172-R	Adapter, N(m)-BNC(f), DC to 1.3 GHz, 50 Ω
Test Port Cabl	es, Armored
15NN50-1.5C	Test Port Cable Armored, 1.5 meters, N(m)-N(m), 6 GHz, 50 Ω
15NN50-3.0C	Test Port Cable Armored, 3.0 meters, N(m)-N(m), 6 GHz, 50 Ω
15NNF50-1.5C	Test Port Cable Armored, 1.5 meters, N(m)-N(f), 6 GHz, 50 Ω
15NNF50-3.0C	Test Port Cable Armored, 3.0 meters, N(m)-N(f), 6 GHz, 50 Ω
15ND50-1.5C	Test Port Cable Armored, 1.5 meters, N(m)-7/16 DIN(m), 6 GHz, 50 Ω
15NDF50-1.5C	Test Port Cable Armored, 1.5 meters, N(m)-7/16 DIN(f), 6 GHz, 50 Ω

Ordering Information (Continued)

2000-1200 Portable Antenna, SMA (m), 806-866 MHz, 50 Ω 2000-1473 Portable Antenna, SMA (m), 870-960 MHz, 50 Ω 2000-1035 Portable Antenna, SMA (m), 870-960 MHz, 50 Ω 2000-1030 Portable Antenna, SMA(m), 171 to 1.88 GHz, 50 Ω 2000-1031 Portable Antenna, SMA(m), 1.71 to 1.88 GHz, 50 Ω 2000-1031 Portable Antenna, SMA(m), 1.92 to 1.98 and 2.11 to 2.17 GHz, 50 Ω 2000-1032 Portable Antenna, SMA(m), 24 to 2.4835 GHz, 50 Ω 2000-1032 Portable Antenna, SMA(m), 24 to 2.4835 GHz, 50 Ω 2000-141.R Portable Yagi Antenna, N(f), 822 to 900 MHz, 10 dBd 2000-141.R Portable Yagi Antenna, N(f), 885 to 975 MHz, 10 dBd 2000-141.R Portable Yagi Antenna, N(f), 1920 to 2170 MHz, 10 dBd 2000-141.R Portable Yagi Antenna, N(f), 1920 to 2170 MHz, 10 dBd 2000-141.R Portable Yagi Antenna, N(f), 1920 to 2170 MHz, 12 dBd 2000-141.R Portable Yagi Antenna, N(f), 1920 to 2170 MHz, 12 dBd 2000-141.FR Portable Yagi Antenna, N(f), 1920 to 2170 MHz, 12 dBd 2000-141.FR Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω 2000-151.FR 500 MHz to 3 GHz, 10g periodic Filter Bandpass, 800 to 915 MHz, N(m)-SMA(f), 50 Ω	Antennas	
2000-1035 Portable Antenna, SMA (m), 896-941 MHz, 50 Ω 2000-1030 Portable Antenna, SMA(m), 1.71 to 1.88 GHz, 50 Ω 2000-1474 Portable Antenna, SMA(m), 1.71 to 1.88 GHz, 50 Ω 2000-1475 Portable Antenna, SMA(m), 1.85 to 1.99 GHz, 50 Ω 2000-1475 Portable Antenna, SMA(m), 2.2 to 1.98 and 2.11 to 2.17 GHz, 50 Ω 2000-1475 Portable Antenna, SMA(m), 2.4 to 2.4835 GHz, 50 Ω 2000-1476 Portable Antenna, SMA(m), 2.4 to 2.4835 GHz, 50 Ω 2000-1417 Portable Yagi Antenna, N(f), 822 to 900 MHz, 10 dBd 2000-141.R Portable Yagi Antenna, N(f), 885 to 975 MHz, 10 dBd 2000-141.R Portable Yagi Antenna, N(f), 1920 to 2170 MHz, 10 dBd 2000-141.R Portable Yagi Antenna, N(f), 1920 to 2170 MHz, 12 dBd 2000-141.R Portable Yagi Antenna, N(f), 1920 to 2000 MHz, 12 dBd 2000-141.R Portable Yagi Antenna, N(f), 1920 to 2000 MHz, 12 dBd 2000-1415.R Portable Yagi Antenna, N(f), 1920 to 2170 MHz, 12 dBd 2000-1415.R Portable Sol MHz to 3 GHZ, log periodic Filters Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-N(f), 50 Ω 1030-105-R Filter, Bandpass, 1850 to 1910 MHz, N(m)	2000-1200	Portable Antenna, SMA (m), 806-866 MHz, 50 Ω
2000-1030 Portable Antenna, SMA(m), 1.71 to 1.88 GHz, 50 Ω 2000-1474 Portable Antenna, SMA(m), 1.71 to 1.88 GHz, 50 Ω 2000-1031 Portable Antenna, SMA(m), 1.92 to 1.98 and 2.11 to 2.17 GHz, 50 Ω 2000-132 Portable Antenna, SMA(m), 1.92 to 1.98 and 2.11 to 2.17 GHz, 50 Ω 2000-132 Portable Antenna, SMA(m), 2.4 to 2.4835 GHz, 50 Ω Directional Antennas Portable Yagi Antenna, N(f), 822 to 900 MHz, 10 dBd 2000-1412-R Portable Yagi Antenna, N(f), 185 to 1990 MHz, 10 dBd 2000-1412-R Portable Yagi Antenna, N(f), 1710 to 1880 MHz, 10 dBd 2000-1414-R Portable Yagi Antenna, N(f), 1710 to 1880 MHz, 10 dBd 2000-1414-R Portable Yagi Antenna, N(f), 1920 to 2170 MHz, 12 dBd 2000-1415-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1415-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1415-R Portable Sol GHZ, log periodic Filters S00 MHz to 3 GHz, log periodic Filters S00 MHz N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 806 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 1210 to 1790 MHz, N(m)-N(f), 50 Ω 1030-110-R Filter, Bandpass, 1210 to 1790 MHz, N(m)-N(f), 50 Ω <td>2000-1473</td> <td>Portable Antenna, SMA (m), 870-960 MHz, 50 Ω</td>	2000-1473	Portable Antenna, SMA (m), 870-960 MHz, 50 Ω
2000-1474 Portable Antenna, SMA(m), 1.71 to 1.88 GHz, 50 Ω 2000-1031 Portable Antenna, SMA(m), 1.85 to 1.99 GHz, 50 Ω 2000-1475 Portable Antenna, SMA(m), 1.92 to 1.98 and 2.11 to 2.17 GHz, 50 Ω 2000-1032 Portable Antenna, SMA(m), 2.4 to 2.4835 GHz, 50 Ω Directional Antennas SMA(m), 2.4 to 2.4835 GHz, 50 Ω 2000-141-R Portable Yagi Antenna, N(f), 822 to 900 MHz, 10 dBd 2000-141-R Portable Yagi Antenna, N(f), 1710 to 1880 MHz, 10 dBd 2000-1413-R Portable Yagi Antenna, N(f), 1850 to 1990 MHz, 9.3 dBd 2000-1414-R Portable Yagi Antenna, N(f), 120 to 2170 MHz, 12 dBd 2000-1415-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1415-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1415-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1415-R Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 800 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 800 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-103-R Filter, Bandpass, 150 to 1910 MHz, N(m)-N(f), 50 Ω 1030-103-R Filter, Bandpass, 1710 to 1790 MHz, N(m)-N(f), 50 Ω 1030-102-R Filter, Bandp	2000-1035	Portable Antenna, SMA (m), 896-941 MHz, 50 Ω
2000-1031 Portable Antenna, SMA(m), 1.85 to 1.99 GHz, 50 Ω 2000-1475 Portable Antenna, SMA(m), 1.92 to 1.98 and 2.11 to 2.17 GHz, 50 Ω 2000-1032 Portable Antenna, SMA(m), 2.4 to 2.4835 GHz, 50 Ω Directional Antennas Portable Yagi Antenna, N(f), 822 to 900 MHz, 10 dBd 2000-141-R Portable Yagi Antenna, N(f), 825 to 975 MHz, 10 dBd 2000-141-R Portable Yagi Antenna, N(f), 1710 to 1880 MHz, 10 dBd 2000-141-R Portable Yagi Antenna, N(f), 1710 to 1880 MHz, 0.3 dBd 2000-141-R Portable Yagi Antenna, N(f), 1850 to 1990 MHz, 9.3 dBd 2000-141-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1415-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1415-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1414-R Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω 1030-119-R Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 806 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-N(f), 50 Ω 1030-105-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-107-R	2000-1030	Portable Antenna, SMA(m), 1.71 to 1.88 GHz, 50 Ω
2000-1475 Portable Antenna, SMA(m), 1.92 to 1.98 and 2.11 to 2.17 GHz, 50 Ω 2000-1032 Portable Antenna, SMA(m), 2.4 to 2.4835 GHz, 50 Ω Directional Antennas Portable Yagi Antenna, N(f), 822 to 900 MHz, 10 dBd 2000-1412-R Portable Yagi Antenna, N(f), 885 to 975 MHz, 10 dBd 2000-1412-R Portable Yagi Antenna, N(f), 1710 to 1880 MHz, 10 dBd 2000-1414-R Portable Yagi Antenna, N(f), 1550 to 1990 MHz, 9.3 dBd 2000-1416-R Portable Yagi Antenna, N(f), 120 to 2170 MHz, 12 dBd 2000-1416-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1415-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1519-R 500 MHz to 3 GHz, log periodic Flitters Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 824 to 849 MHz N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 810 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-101-R Filter, Bandpass, 810 to 910 MHz, N(m)-SMA(f), 50 Ω 1030-102-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-103-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-103-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-112-R Filter, B	2000-1474	Portable Antenna, SMA(m), 1.71 to 1.88 GHz, 50 Ω
2000-1032 Portable Antenna, SMA(m), 2.4 to 2.4835 GHz, 50 Ω Directional Antennas 2000-1411-R Portable Yagi Antenna, N(f), 822 to 900 MHz, 10 dBd 2000-1412-R Portable Yagi Antenna, N(f), 885 to 975 MHz, 10 dBd 2000-1413-R Portable Yagi Antenna, N(f), 1710 to 1880 MHz, 10 dBd 2000-1414-R Portable Yagi Antenna, N(f), 1850 to 1990 MHz, 9.3 dBd 2000-1416-R Portable Yagi Antenna, N(f), 1920 to 2170 MHz, 12 dBd 2000-1415-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1415-R S00 MHz to 3 GHz, log periodic Filters S00 MHz to 3 GHz, log periodic Filters Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 806 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 805 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-105-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-SMA(f), 50 Ω 1030-105-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-SMA(f), 50 Ω 1030-105-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-105-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-112-R	2000-1031	Portable Antenna, SMA(m), 1.85 to 1.99 GHz, 50 Ω
Directional Antennas 2000-1411-R Portable Yagi Antenna, N(f), 822 to 900 MHz, 10 dBd 2000-1412-R Portable Yagi Antenna, N(f), 885 to 975 MHz, 10 dBd 2000-1413-R Portable Yagi Antenna, N(f), 1710 to 1880 MHz, 10 dBd 2000-1414-R Portable Yagi Antenna, N(f), 1850 to 1990 MHz, 9.3 dBd 2000-1416-R Portable Yagi Antenna, N(f), 1850 to 1990 MHz, 9.3 dBd 2000-1416-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1519-R 500 MHz to 3 GHz, log periodic Filters 1030-114-R 1030-110-R Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 800 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-101-R Filter, Bandpass, 800 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-SMA(f), 50 Ω 1030-105-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-N(f), 50 Ω 1030-105-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-N(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-N(f) 3-1010-119 Attenuator, 20 dB	2000-1475	Portable Antenna, SMA(m), 1.92 to 1.98 and 2.11 to 2.17 GHz, 50 Ω
2000-1411-R Portable Yagi Antenna, N(f), 822 to 900 MHz, 10 dBd 2000-1412-R Portable Yagi Antenna, N(f), 885 to 975 MHz, 10 dBd 2000-1413-R Portable Yagi Antenna, N(f), 1710 to 1880 MHz, 10 dBd 2000-1414-R Portable Yagi Antenna, N(f), 1850 to 1990 MHz, 9.3 dBd 2000-1416-R Portable Yagi Antenna, N(f), 1920 to 2170 MHz, 12 dBd 2000-1415-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1519-R 500 MHz to 3 GHz, log periodic Filters Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 824 to 849 MHz N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 880 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 890 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 890 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 1950 to 1910 MHz, N(m)-SMA(f), 50 Ω 1030-101-R Filter, Bandpass, 1950 to 1910 MHz, N(m)-SMA(f), 50 Ω 1030-102-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-102-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-102-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-N(f), 50 Ω 1030-102-R Filter, Bandpass, 2400 to 2	2000-1032	Portable Antenna, SMA(m), 2.4 to 2.4835 GHz, 50 Ω
2000-1412-R Portable Yagi Antenna, N(f), 885 to 975 MHz, 10 dBd 2000-1413-R Portable Yagi Antenna, N(f), 1710 to 1880 MHz, 10 dBd 2000-1414-R Portable Yagi Antenna, N(f), 1850 to 1990 MHz, 9.3 dBd 2000-1416-R Portable Yagi Antenna, N(f), 1920 to 2170 MHz, 12 dBd 2000-1415-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1415-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1519-R 500 MHz to 3 GHz, log periodic Filters Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω 1030-114-R Filter, Bandpass, 824 to 849 MHz N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 824 to 849 MHz N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 820 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 820 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-100-R Filter, Bandpass, 150 to 1910 MHz, N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 1710 to 1790 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 3-1010-112 Attenuator, 10 dB, 2 W, DC to 6 GHz 3-1010-112 Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m	Directional An	tennas
2000-1413-R Portable Yagi Antenna, N(f), 1710 to 1880 MHz, 10 dBd 2000-1414-R Portable Yagi Antenna, N(f), 1850 to 1990 MHz, 9.3 dBd 2000-1416-R Portable Yagi Antenna, N(f), 1920 to 2170 MHz, 12 dBd 2000-1415-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1519-R 500 MHz to 3 GHz, log periodic Filters Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω 1030-114-R Filter, Bandpass, 800 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 800 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 800 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 800 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-N(f), 50 Ω 1030-111-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-N(f), 50 Ω 1030-112-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 3-1010-112 Attenuator, 10 dB, 2 W, DC to 6 GHz 3-1010-122 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)	2000-1411-R	Portable Yagi Antenna, N(f), 822 to 900 MHz, 10 dBd
2000-1414-R Portable Yagi Antenna, N(f), 1850 to 1990 MHz, 9.3 dBd 2000-1416-R Portable Yagi Antenna, N(f), 1920 to 2170 MHz, 12 dBd 2000-1415-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1519-R 500 MHz to 3 GHz, log periodic Filters Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 824 to 849 MHz N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 800 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-108-R Filter, Bandpass, 890 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-107-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-SMA(f), 50 Ω 1030-106-R Filter, Bandpass, 1710 to 1790 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 3-1010-119 Attenuator, 10 dB, 2 W, DC to 6 GHz 3-1010-119 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 42N50-20 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-123 Attenuator, 30 dB, 50 W, DC to 3 GHz, N(m)-N(f)	2000-1412-R	Portable Yagi Antenna, N(f), 885 to 975 MHz, 10 dBd
2000-1416-R Portable Yagi Antenna, N(f), 1920 to 2170 MHz, 12 dBd 2000-1415-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1519-R 500 MHz to 3 GHz, log periodic Filters I030-114-R 1030-114-R Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 824 to 849 MHz N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 820 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 890 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-105-R Filter, Bandpass, 890 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-106-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 1910 to 1790 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 3-1010-119 Attenuator, 10 dB, 2 W, DC to 6 GHz 3-1010-119 Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f) 42N50-20 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-123 Attenuator, 30 dB, 50 W, DC to 3 GHz, N(m)-N(f) 42N50A-30	2000-1413-R	Portable Yagi Antenna, N(f), 1710 to 1880 MHz, 10 dBd
2000-1415-R Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd 2000-1519-R 500 MHz to 3 GHz, log periodic Filters 1030-114-R Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 824 to 849 MHz N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 824 to 849 MHz N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 820 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-107-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-SMA(f), 50 Ω 1030-111-R Filter, Bandpass, 1710 to 1790 MHz, N(m)-N(f), 50 Ω 1030-106-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 1030-112-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 3-1010-112 Attenuator, 10 dB, 2 W, DC to 6 GHz 3-1010-112 Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f) 42N50-20 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-123 Attenuator, 30 dB, 50 W, DC to 3 GHz, N(m)-N(f) 42N50A-30 Attenuator, 30 dB, 50 W, DC to 3 GHz, N(m)-N(f) 1010-127-R Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 3-1010-124 Attenuator, 40 dB, 100 W, DC	2000-1414-R	Portable Yagi Antenna, N(f), 1850 to 1990 MHz, 9.3 dBd
2000-1519-R 500 MHz to 3 GHz, log periodic Filters 1030-114-R Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 824 to 849 MHz N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 880 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-105-R Filter, Bandpass, 890 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-111-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-N(f), 50 Ω 1030-106-R Filter, Bandpass, 1710 to 1790 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-N(f), 50 Ω 3-1010-112 Attenuator, 10 dB, 2 W, DC to 6 GHz 3-1010-119 Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f) 3-1010-122 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-123 Attenuator, 30 dB, 50 W, DC to 3 GHz, N(m)-N(f) 3-1010-124 Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 3-1010-127-R Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 3-1010-124 Attenuator, 40 dB, 100 W, D	2000-1416-R	Portable Yagi Antenna, N(f), 1920 to 2170 MHz, 12 dBd
Filters 1030-114-R Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 824 to 849 MHz N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 880 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-105-R Filter, Bandpass, 890 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-111-R Filter, Bandpass, 890 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-105-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-SMA(f), 50 Ω 1030-106-R Filter, Bandpass, 1710 to 1790 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω Attenuators Sudpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω Attenuator Sudpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 1010-112 Attenuator, 10 dB, 2 W, DC to 6 GHz 3-1010-119 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-122 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-123 Attenuator, 30 dB, 50 W, DC to 3 GHz, N(m)-N(f) 1010-127-R Attenuator, 30	2000-1415-R	Portable Yagi Antenna, N(f), 2400 to 2500 MHz, 12 dBd
1030-114-R Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 824 to 849 MHz N(m)-SMA(f), 50 Ω 1030-109-R Filter, Bandpass, 824 to 849 MHz, N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 880 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-105-R Filter, Bandpass, 890 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-111-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-N(f), 50 Ω 1030-106-R Filter, Bandpass, 1710 to 1790 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω Attenuators Sandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω Attenuator Sandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω Attenuator Sandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 3-1010-119 Attenuator, 10 dB, 2 W, DC to 6 GHz 3-1010-122 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-123 Attenuator, 30 dB, 50 W, DC to 18 GHz, N(m)-N(f) </td <td>2000-1519-R</td> <td>500 MHz to 3 GHz, log periodic</td>	2000-1519-R	500 MHz to 3 GHz, log periodic
1030-109-R Filter, Bandpass, 824 to 849 MHz N(m)-SMA(f), 50 Ω 1030-110-R Filter, Bandpass, 880 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-105-R Filter, Bandpass, 890 to 915 MHz, N(m)-N(f), 50 Ω 1030-111-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-SMA(f), 50 Ω 1030-106-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-SMA(f), 50 Ω 1030-106-R Filter, Bandpass, 1710 to 1790 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω Attenuators Attenuator, 10 dB, 2 W, DC to 6 GHz 3-1010-119 Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f) 3-1010-122 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-123 Attenuator, 30 dB, 50 W, DC to 8.5 GHz, N(m)-N(f) 42N50A-30 Attenuator, 30 dB, 50 W, DC to 3 GHz, N(m)-N(f) 1010-127-R Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 3-1010-124 Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f)	Filters	
1030-110-R Filter, Bandpass, 880 to 915 MHz, N(m)-SMA(f), 50 Ω 1030-105-R Filter, Bandpass, 890 to 915 MHz, N(m)-N(f), 50 Ω 1030-111-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-SMA(f), 50 Ω 1030-106-R Filter, Bandpass, 1710 to 1790 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω 3-1010-119 Attenuator, 10 dB, 2 W, DC to 6 GHz 3-1010-122 Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f) 42N50-20 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-123 Attenuator, 30 dB, 50 W, DC to 18 GHz, N(m)-N(f) 42N50A-30 Attenuator, 30 dB, 50 W, DC to 3 GHz, N(m)-N(f) 1010-127-R Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 3-1010-124 Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f)	1030-114-R	Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω
1030-105-R Filter, Bandpass, 890 to 915 MHz, N(m)-N(f), 50 Ω 1030-111-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-SMA(f), 50 Ω 1030-106-R Filter, Bandpass, 1710 to 1790 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-112-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-N(f), 50 Ω Attenuators Standpass, 2400 to 2484 MHz, N(m)-N(f), 50 Ω 3-1010-119 Attenuator, 10 dB, 2 W, DC to 6 GHz 3-1010-122 Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f) 42N50-20 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-123 Attenuator, 30 dB, 50 W, DC to 8.5 GHz, N(m)-N(f) 42N50A-30 Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 1010-127-R Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 3-1010-124 Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional	1030-109-R	Filter, Bandpass, 824 to 849 MHz N(m)-SMA(f), 50 Ω
1030-111-R Filter, Bandpass, 1850 to 1910 MHz, N(m)-SMA(f), 50 Ω 1030-106-R Filter, Bandpass, 1710 to 1790 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω Attenuators Sandpass 3-1010-119 Attenuator, 10 dB, 2 W, DC to 6 GHz 3-1010-122 Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f) 42N50-20 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-123 Attenuator, 30 dB, 50 W, DC to 18 GHz, N(m)-N(f) 42N50A-30 Attenuator, 30 dB, 50 W, DC to 3 GHz, N(m)-N(f) 1010-127-R Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 3-1010-124 Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional	1030-110-R	Filter, Bandpass, 880 to 915 MHz, N(m)-SMA(f), 50 Ω
1030-106-R Filter, Bandpass, 1710 to 1790 MHz, N(m)-N(f), 50 Ω 1030-107-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω Attenuators 3-1010-119 Attenuator, 10 dB, 2 W, DC to 6 GHz 3-1010-122 Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f) 42N50-20 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-123 Attenuator, 30 dB, 50 W, DC to 8.5 GHz, N(m)-N(f) 42N50A-30 Attenuator, 30 dB, 50 W, DC to 18 GHz, N(m)-N(f) 1010-127-R Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 3-1010-124 Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional	1030-105-R	Filter, Bandpass, 890 to 915 MHz, N(m)-N(f), 50 Ω
1030-107-R Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω Attenuators 3-1010-119 Attenuator, 10 dB, 2 W, DC to 6 GHz 3-1010-122 Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f) 42N50-20 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-123 Attenuator, 30 dB, 50 W, DC to 8.5 GHz, N(m)-N(f) 42N50A-30 Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 1010-127-R Attenuator, 30 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional	1030-111-R	Filter, Bandpass, 1850 to 1910 MHz, N(m)-SMA(f), 50 Ω
Instruction Instruction 1030-112-R Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω Attenuators 3-1010-119 Attenuator, 10 dB, 2 W, DC to 6 GHz 3-1010-122 Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f) 42N50-20 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-123 Attenuator, 30 dB, 50 W, DC to 8.5 GHz, N(m)-N(f) 42N50A-30 Attenuator, 30 dB, 50 W, DC to 18 GHz, N(m)-N(f) 1010-127-R Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 3-1010-124 Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional	1030-106-R	Filter, Bandpass, 1710 to 1790 MHz, N(m)-N(f), 50 Ω
Attenuators 3-1010-119 Attenuator, 10 dB, 2 W, DC to 6 GHz 3-1010-122 Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f) 42N50-20 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-123 Attenuator, 30 dB, 50 W, DC to 8.5 GHz, N(m)-N(f) 42N50A-30 Attenuator, 30 dB, 50 W, DC to 18 GHz, N(m)-N(f) 1010-127-R Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 3-1010-124 Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional	1030-107-R	Filter, Bandpass, 1910 to 1990 MHz, N(m)-N(f), 50 Ω
3-1010-119 Attenuator, 10 dB, 2 W, DC to 6 GHz 3-1010-122 Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f) 42N50-20 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-123 Attenuator, 30 dB, 50 W, DC to 8.5 GHz, N(m)-N(f) 42N50A-30 Attenuator, 30 dB, 50 W, DC to 18 GHz, N(m)-N(f) 1010-127-R Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 3-1010-124 Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional	1030-112-R	Filter, Bandpass, 2400 to 2484 MHz, N(m)-SMA(f), 50 Ω
3-1010-122 Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f) 42N50-20 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-123 Attenuator, 30 dB, 50 W, DC to 8.5 GHz, N(m)-N(f) 42N50A-30 Attenuator, 30 dB, 50 W, DC to 18 GHz, N(m)-N(f) 1010-127-R Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 3-1010-124 Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional	Attenuators	
42N50-20 Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f) 3-1010-123 Attenuator, 30 dB, 50 W, DC to 8.5 GHz, N(m)-N(f) 42N50A-30 Attenuator, 30 dB, 50 W, DC to 18 GHz, N(m)-N(f) 1010-127-R Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 3-1010-124 Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional	3-1010-119	Attenuator, 10 dB, 2 W, DC to 6 GHz
3-1010-123 Attenuator, 30 dB, 50 W, DC to 8.5 GHz, N(m)-N(f) 42N50A-30 Attenuator, 30 dB, 50 W, DC to 18 GHz, N(m)-N(f) 1010-127-R Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 3-1010-124 Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional	3-1010-122	Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f)
42N50A-30 Attenuator, 30 dB, 50 W, DC to 18 GHz, N(m)-N(f) 1010-127-R Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 3-1010-124 Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional	42N50-20	Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f)
1010-127-R Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f) 3-1010-124 Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional	3-1010-123	Attenuator, 30 dB, 50 W, DC to 8.5 GHz, N(m)-N(f)
3-1010-124 Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional	42N50A-30	Attenuator, 30 dB, 50 W, DC to 18 GHz, N(m)-N(f)
	1010-127-R	Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f)
1010-121 Attenuator, 40 dB, 100 W, DC to 18 GHz, N(m)-N(f)	3-1010-124	Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional
	1010-121	Attenuator, 40 dB, 100 W, DC to 18 GHz, N(m)-N(f)
1010-128-R Attenuator, 40 dB, 150 W, DC to 3 GHz, N(m)-N(f)	1010-128-R	Attenuator, 40 dB, 150 W, DC to 3 GHz, N(m)-N(f)

Ordering Information (Continued)

Miscellaneous Accessories

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633-27	Rechargeable Battery, Ni-MH			
806-141	Automotive Cigarette Lighter/12 Volt DC Adapter			
40-168-R	AC/DC Adapter			
2000-1029	Battery Charger, NiMH, w/ Universal Power Supply			
551-1691-R	USB to RS-232 Adapter Cable			
800-441	Serial Interface Cable			
65717	Soft Carrying Case			
67135	Site Master Backpack			
760-243-R	Transit Case			
2300-347	Handheld Software Tools CDROM			
High Accuracy	Power Accessories			
PSN50	High Accuracy Power Sensor, 50 MHz to 6 GHz			
MA24104A	Inline High Power Sensor, 600 MHz to 4 GHz			
40-168-R	AC-DC Adapter			
800-441	Serial Interface Cable			
3-1010-122	Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f)			
1010-127-R	Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f)			
3-1010-123	Attenuator, 30 dB, 50 W, DC to 8.5 GHz, N(m)-N(f)			
3-1010-124	Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional			
1010-128-R	Attenuator, 40 dB, 150 W, DC to 3 GHz, N(m)-N(f)			
Literature Ma	nuals			
10580-00097	User Guide			
10580-00098	Programming Manual			

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