ANRITSU

MS2724C

The Anritsu Spectrum Master MS2724C is a high-performance handheld spectrum analyzer covering a frequency range from 9 kHz to 20 GHz. Designed for field environments, it delivers benchtop-grade performance in a compact, lightweight form factor of approximately 8 pounds. It offers multiple sweep modes, fast sweep speed, resolution bandwidths up to 10 MHz, and optional capabilities such as 3GPP/3GPP2 and WiMAX signal analyzers, GPS receiver, and interference analysis.

SPECIFICATIONS

General

Interfaces	RJ45 LAN (10/100 Mbps), 2x USB Type A (Host), 5-pin mini-B USB (Client)
Display	Normal, black and white, night vision, high contrast modes

Physical

Power Supply	12 to 15 VDC, < 5.0 A (via 5.5 mm barrel connector)
Operating Temperature	-10 °C to 55 °C °C
Dimensions (W×H×D)	315 mm × 211 mm × 77 mm mm
Weight	3.7 kg (8.1 lbs) kg

Frequency

Frequency Range	9 kHz to 20 GHz (usable to 0 Hz)
Frequency Range with Preamp	100 kHz to 20 GHz
Tuning Resolution	1 Hz
Frequency Span Range	10 Hz to 20 GHz, plus 0 Hz (zero span)
External Reference Frequencies	1, 1.2288, 1.544, 2.048, 2.4576, 4.8, 4.9152, 5, 9.8304, 10, 13, 19.6608 MHz
Frequency Reference Temperature Stability	±0.5 ppm (-10 °C to 55 °C)
Frequency Reference Aging	±1.0 ppm/10 years
Frequency Reference GPS Lock Accuracy	±25 ppb

Bandwidth

Resolution Bandwidth (RBW) Range	1 Hz to 10 MHz
Resolution Bandwidth (RBW) Steps	1-3 sequence ± 10% (-3 dB bandwidth)
Video Bandwidth (VBW) Range	1 Hz to 10 MHz
Video Bandwidth (VBW) Steps	1-3 sequence (-3 dB bandwidth)
Quasi-Peak RBW	200 Hz, 9 kHz, 120 kHz (-6 dB bandwidth)
Quasi-Peak VBW	Auto VBW is On, RBW/VBW = 1

Amplitude

Measurement Range	DANL to +30 dBm
Display Range	1 to 15 dB/div in 1 dB steps
Reference Level Range	-120 dBm to +30 dBm
Attenuator Range	0 to 65 dB
Attenuator Step Size	5 dB
Amplitude Units (Log Scale)	dBm, dBV, dBmv, dBµV
Amplitude Units (Linear Scale)	nV, µV, mV, V, kV, nW, µW, mW, W, kW

Displayed Average Noise Level (DANL)

DANL (Preamp Off, 10 MHz to 4 GHz)	-141 dBm (1 Hz RBW)
DANL (Preamp Off, >4 GHz to 9 GHz)	-134 dBm (1 Hz RBW)
DANL (Preamp Off, 9 GHz to 13 GHz)	-129 dBm (1 Hz RBW)
DANL (Preamp Off, >13 GHz to 20 GHz)	-123 dBm (1 Hz RBW)
DANL (Preamp On, 10 MHz to 4 GHz)	-160 dBm (1 Hz RBW)
DANL (Preamp On, 4 GHz to 9 GHz)	-156 dBm (1 Hz RBW)
DANL (Preamp On, >9 GHz to 13 GHz)	-152 dBm (1 Hz RBW)
DANL (Preamp On, >13 GHz to 20 GHz)	-145 dBm (1 Hz RBW)

SSB Phase Noise (at 1 GHz)

Phase Noise @ 10 kHz Offset	-100 dBc/Hz (-104 dBc/Hz typical)
Phase Noise @ 100 kHz Offset	-102 dBc/Hz (-107 dBc/Hz typical)
Phase Noise @ 1 MHz Offset	-107 dBc/Hz (-114 dBc/Hz typical)
Phase Noise @ 10 MHz Offset	-120 dBc/Hz (-129 dBc/Hz typical)

Dynamic Range & Distortion

Dynamic Range	> 104 dB @ 2.4 GHz, 2/3 (TOI-DANL) in 1 Hz RBW
Third-Order Intercept (TOI) @ 2.4 GHz	+15 dBm
1 dB Gain Compression Point (< 4 GHz)	+5 dBm typical
1 dB Gain Compression Point (4 GHz to 20 GHz)	+5 dBm typical
Second Harmonic Distortion (50 MHz)	-54 dBc
Input VSWR	1.5:1 typical (< 13 GHz), 2.0:1 typical (13 GHz to 20 GHz)

Spurious Responses

Residual Spurs (Preamp Off, 9 kHz to 13 GHz)	-90 dBm (10 MHz to 13 GHz)
Residual Spurs (Preamp Off, 13 GHz to 20 GHz)	-85 dBm
Residual Spurs (Preamp On, 1 MHz to 20 GHz)	-100 dBm (10 MHz to 20 GHz)
Input-Related Spurs	-60 dBc (-70 dBc typical)

Sweep & Triggering

Sweep Time (Zero Span)	10 µs to 600 s
Sweep Modes	Fast, Performance, No FFT
Sweep Detection	Peak, RMS/Avg, Negative, Sample, Quasi-peak
Sweep Triggers	Free Run, External, Video, Delay, Level, Slope, Hysteresis, Holdoff, Force Trigger Once

Markers

Number of Markers	6 markers, each with a Delta Marker (or 1 Reference with 5 Delta Markers)
Marker Types	Style (Fixed/Tracking), Noise Marker, Frequency Counter Marker
Marker Auto-Position	Peak Search, Next Peak (Right/Left), Peak Threshold %, Set Marker to Channel, Marker Frequency to Center, Delta Marker to Span, Marker to Reference Level

Limit Lines

Limit Line Types	Upper/Lower
Limit Line Advanced Features	Absolute/Relative, Mirror, Save/Recall

Inputs & Outputs

RF Input Connector	Type N female, 50 Ω
Maximum Input (Damage Level)	+30 dBm, ± 50 VDC
GPS Connector	SMA Female
Headset Jack	2.5 mm barrel connector
External Reference Input	BNC female, 50 Ω, Maximum Input +10 dBm
External Trigger Input	BNC female, 10 kΩ impedance, Maximum Input ± 5 VDC
IF Output Port	BNC female, 50 Ω, 140 MHz center frequency, 30 MHz bandwidth

Measurements & Options

Smart Measurements	Field Strength, Occupied Bandwidth, Channel Power, ACPR, AM/FM/SSB Demodulation (audio out only), C/I, Emission Mask
Optional Signal Analyzers	LTE (up to 20 MHz), GSM/EDGE, W-CDMA/HSPA+, TD-SCDMA/HSDPA, CDMA2000 1X, CDMA2000 1xEV-DO, Fixed WiMAX, Mobile WiMAX
Optional Capabilities	High Accuracy Power Meter, Interference Analyzer with Interference Mapping, Channel Scanner, GPS Receiver

Environmental

Storage Temperature	-40 °C to 71 °C
Relative Humidity	95% RH at 40 °C, non-condensing
Operating Altitude	Up to 4,600 m

Power

Battery Operating Time	3 hours (typical)
Battery Chemistry	Lithium-Ion

Storage & Interfaces

Internal Memory Capacity	> 4000 traces, > 4000 setups

Compliance

Environmental Compliance	MIL-PRF-28800F Class 2
Shock and Vibration Standard	MIL-PRF-28800F Class 2

Performance

RF Input Impedance	50 Ω
Absolute Amplitude Accuracy (100 MHz)	±0.3 dB (Preamp Off, -30 dBm, 10 dB RF Attenuation)
Amplitude Accuracy (9 kHz to 13 GHz)	±1.3 dB
Amplitude Accuracy (>13 GHz to 20 GHz)	±1.3 dB
RBW Accuracy (1 Hz to 10 MHz)	±10% (typical)
Sweep Time (Span > 0 Hz)	10 µs to 600 s
Sweep Time Accuracy (Zero Span)	±2%
Trace Detectors	Peak, Negative Peak, Sample, RMS, RMS Average

Options & Features

GPS Position Accuracy	< 25 m (3D RMS) with GPS lock (Option 31)
GPS Lock Time	< 2.5 min typical (cold start) (Option 31)
IF Output Frequency	140 MHz (Option 89)
IF Output Bandwidth	Up to 30 MHz (Option 89)
Gated Sweep Delay Range	1 µs to 10 ms (Option 90)
Gated Sweep Length Range	1 µs to 10 ms (Option 90)

TECHNOLOGY

Spectrum Analysis

APPLICATIONS

RF and Microwave Spectrum Analysis, Interference Analysis, Wireless Signal Analysis