



DESCRIPTION

The Panther 9000 Series High-Speed Receiver is designed for high performance antenna testing where speed and accuracy are required. This two-channel system collects multi-port, multi-frequency data at up to 300,000 measurements per second, while freeing the measurement application software from stringent timing requirements.

The Panther 9000 series receiver is capable of high-speed pulsed measurements of $< 1 \mu\text{s}$ while improving on the high-performance specifications of the Panther 6000. The Panther 9100 receiver includes a front panel LED "Phi" display capable of simultaneously showing amplitude, phase and beam state. The Panther 9200 receiver adds a high resolution LCD display for monitoring real-time data acquisition and receiver performance.

COMPONENTS

- Panther 9000 Receiver with High Speed Beam Controller
- Driver software and test program
- Panther 9000 User's Guide

FEATURES

- High speed digital measurement receiver
- Reduces antenna test time - improves range productivity
- Up to 300,000 multi-beam measurements per second
- Frequency coverage from 5 MHz to 110 GHz with appropriate frequency converter
- Pulse measurements down to less than $1 \mu\text{s}$ pulse width
- Supports pulse profiling
- Supports a wide variety of RF sources from NSI, Agilent, and Comstron
- Supports multi-port switching, synchronization, and pulse mode options
- Simple DLL interface allows integration into automated test programs
- Digital interface option for Digital Beam Forming antenna test
- Fully integrated with NSI 2000 antenna measurement software

SPECIFICATIONS	
Measurement speed (max)	300,000 points per second
Receiver integration time (1 average)	320 ns
IF bandwidth (1 average)	> 1 MHz
Channels	2 (signal and reference)
IF frequency (nominal, others optional)	20 MHz
0.1 dB Compression (20 MHz IF level)	-13 dBm
Sensitivity (20 MHz IF level)	-78 dBm at 320 ns int. time (1 ave) -98 dBm at 32 μ s int. time (100 ave)
Dynamic range	> 65 dB at 320 ns int. time (1 ave) > 85 dB at 32 μ s int. time (100 ave)
IF input ports	4
IF samplers	2
Data buffer	1 GB
Data buffer size (memory for single cut)	> 64,000,000 measurement points
Beam controller setup time (min)	< 2 μ s
Beam controller timing resolution	10 ns
Minimum pulse width	< 1 μ s
Host computer interface	Ethernet
Switch control	Three (3) 8-bit ports, RS-422 differential
Frequency source control interfaces	Parallel (two 47-bit ports)
Trigger inputs / outputs	Eight (8) in, Eight (8) out, single-ended TTL
Size	6U, 10.5"H x 19"W x 22"D
Expansion ports	2 high-speed serial ports for beam control
USB ports	Model 9100 - 1 Rear Panel Model 9200 - 1 Rear Panel, 2 Front Panel
Non-volatile memory	Removable Compact Flash card for security
AC power requirements	100 - 120/200-240 VAC, 50/60 Hz
Controls and indicators	Model 9100 - LED Phi display Model 9200 - LED Phi display, LCD display



OPERATION

The Panther 9000 receiver collects amplitude and phase data from its Test and Reference IF inputs, and transfers the amplitude and phase data directly to the host computer through a LAN interface. It is compatible with frequency converter systems including Agilent's 85310A and NSI's IFC & DFC.

The beam controller integral in the Panther 9000 manages the critical timing for multi-port, multi-frequency measurements, relieving the host computer of exacting timing requirements. The Panther 9000 can control two sources and three 8-bit switches, and has TTL inputs and outputs for synchronization with external equipment. In pulse mode, the Panther 9000 will synchronize to an incoming pulse, providing a programmable trigger delay to set the receiver trigger to the desired point along the pulse.

NSI 2000 Antenna Measurement Software fully supports the advanced capabilities of the Panther 9000 System. For other applications, NSI provides a simple DLL programming interface, allowing integration of the Panther 9000 System with customer-supplied measurement application software.

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