MODEL	OPTIONAL ACCESSORIES	MODEL	OPTIONAL EXTERNAL POWER SENSORS
7002A222-1	GPS Sensor		I OWER SENSORS
7002A225-1	Hard Transit Case, Watertight	5012	Wideband Power Sensor, 350 MHz to 4
7002A221	Connector Cover		GHz, 150 mW to 150 W Avg, 400 W Peak. Measures fwd/rfl avg, VSWR, return loss (dB), peak, burst avg, crest, CCDF. For- ward average power accuracy is 4% (0.2
USB-MOUSE	USB Mouse, Ultra-Portable, Optical		
USB-HUB	USB Hub, 4-Port, Micro		
TC-MNFN-1.5	Test Cable, 1.5 m, N(M) to N(F)		dB)
TC-MNFN-3.0	Test Cable, 3.0 m, N(M) to N(F)	5010B	Directional Power Sensor, 2 to 2700 MHz, 100 mW to 10 kW, requires elements. Measures fwd/rfl avg, VSWR, return loss (dB), and peak. Forward average power accuracy is 5% (o.2 dB)
TC-MNMN-1.5	Test Cable, 1.5 m, N(M) to N(M)		
TC-MNMN-3.0	Test Cable, 3.0 m, N(M) to N(M)		
TC-MNFE-1.5	Test Cable, 1.5 m, N(M) to 7/16 DIN(F)		
TC-MNFE-3.0	Test Cable, 3.0 m, N(M) to 7/16 DIN(F)	5010T	Directional Power Sensor, Tetra Version, 2 to 2700 MHz, 100 mW to 10 kW, req elements. Measures fwd/rfl avg, VSWR, return loss (dB), and peak. Forward aver- age power accuracy is 5% (0.2 dB)
TC-MNME-1.5	Test Cable, 1.5 m, N(M) to 7/16 DIN(M)		
TC-MNME-3.0	Test Cable, 3.0 m, N(M) to 7/16 DIN(M)		
PA-MNME	Adapter, N(M) to 7/16 DIN(M)		
PA-FNME	Adapter, N(F) to 7/16 DIN(M)	5011	Terminating Power Sensor, 40 MHz to 4
PA-MNFE	Adapter, N(M) to 7/16 DIN(F)	3011	GHz, 10µW to 10 mW (-20 dBm to +10 dBm). Measures forward average power.
PA-FNFE	Adapter, N(F) to 7/16 DIN(F)		
4240-550	Adapter Kit, 7/16 DIN		Accuracy is 5% (0.2 dB)
4240-500-1	Adapter, N(F) to N(F)	5011-EF	Terminating Power Sensor, 40 MHz to 12
4240-500-6	Adapter, N(M) to N(M)		GHz,10µW to 10 mW (-20 to +10 dBm) Measures forward average power. Accuracy is 5% (0.2 dB)
4240-500-10	Adapter, N(M) to SMA(F)*		
4240-401	Interseries Adapter Kit, N/SMA/T/BNC	5016	Wideband Power Sensor, 350 MHz to 4 GHz,
*Recommend N(M) to SMA(F) adapter (model 4240-500-10) for field strength antennas.			25 mW to 25 W Avg, 400 W Peak. Measures fwd/rfl avg, VSWR, return loss (dB), peak, burst avg, crest, CCDF. Forward

You're heard, loud and clear.

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5017

Bird SignalHawk

Model SH-362S: Spectrum Analyzer & 2-Port VNA Model SH-361S: Spectrum Analyzer & 1-Port VNA Model SH-362: 2-Port VNA (1.6 MHz to 3.6 GHz) Model SH-36S: Spec An (100 kHz to 3.6 GHz)

SPECTRUM ANALYZER / VNA

The SignalHawk™ Series of Spectrum Analyzers and VNA is the most user-friendly and accurate hand-held test solution available for installing, maintaining and troubleshooting all segments of RF communication systems. Field engineers, technicians, wireless equipment manufacturers, service providers, contractors, tower erectors and military field personnel alike have come to trust the efficiency and precision results of SignalHawk.

SOLUTIONS

PROBLEMS

Low fault location resolution

noise floor allows 11,265 points, or 20x the distance window (1488') at Low frequency resolution Slow sweeps

Poor lighting or bright light

Cross platform compatibility

Cable loss masking effect cable loss masking effect

the same 1.6" resolution More than 50% greater freq resolution (705 vs. 461 points) than others More than 2x faster sweep times than the competition (705 pts in 1.15 vs. 517 pts in 1.8s) Large 34 sq in high-resolution, fullcolor display for indoor or outdoor

-42 dB directivity and -135 dBm

Compatible with several sensors for additional apps at nearly half the cost of alternatives

Ability to add offsets to minimize

Laptop requirement

Lack of access to AC

Lack of universal connectivity and data storage Varying field tech skill levels

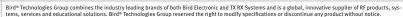
Physically demanding operations

Work orders can be viewed right on the instrument with a .pdf/.doc viewer. Can upload custom userwritten WordPad help file 40% longer battery life (5.5 hours per charge), with field-replaceable

USB drive stores up to 90,000 traces

Easy-to-use, intuitive menus with one-button setup and on-board help Five ways to look at mismatch

Rugged unit, drop tested per military and European standards



average power accuracy is 4% (0.2 dB)

Wideband Power Sensor, 25 MHz to 1 GHz,

Measures fwd/rfl avg, VSWR, return loss

(dB), peak, burst avg, crest, CCDF. Forward

500 mW to 500 W Avg. 400 W Peak.

average power accuracy is 4% (o.2 dB)



Applications

Cellular, PCS, DCS, 2G, 3G, 4G, CDMA, cdmaOne, CDMA 2000, 1X, 1X EV-DO, GSM, GPRS, EDGE, UMTS, HSDPA, W-CDMA, TDMA, AMPS as well as 802.11, Bluetooth, Broadcast, Emergency, Fire, GPS, HDTV, IBOC, In-Building, Lab, Microwave, NPSPAC, Paging, Police, Private, Project 25, Public Safety, Tactical Military, Telematics, Tetra, Trunking, Utilities, WiMAX, WLAN and WLL.



Frequency Range	100 kHz to 3.6 GHz
Frequency Resolution	1 Hz
Frequency Uncertainty	± 1 ppm
Reference Aging	± 1 ppm / year
Temperature Drift	± 1 ppm / °C
Data Points	705 displayed
Spectral Purity	–85 dBc @ 30 kHz
Sweep Time	2.2 s, full span; 1 ms, zero span
Resolution Bandwidth	100 Hz to 1 MHz RBW
Video Bandwidth	10 Hz to 300 kHz VBW
Amplitude Accuracy	± 1.0 dB typ, ± 1.5 dB max
Dynamic Range	66 dB, intermod-free
Noise Floor	–135 dBm DANL
Attenuator	o, 10, 20, or 30 dB; internal
Pre-Amplifier	+24 dB gain, internal
Single-Button Measurements	Occ BW, Channel Power, ACPR, Field Strength, AM/FM Demod, C/I



Power Meter Option: compatible with Models 5012, 5010B, 5010T, 5011, 5011-EF, 5016 and 5017 power sensors. These external power sensors provide ± 5% (± 0.2 dB) accuracy, with NIST Traceability.

SignalHawk Specifications

Display	8.4", TFT, 800 x 600 pixel
Battery	5.5 hour, field replaceable
Drop Test	1 meter per EN 61010-1
Transit Drop Test	10 drops per MIL-PRF-28800F
Explosive Atmosphere	Per MIL-PRF-28800F 4.5.6.3
CE Compliant	Yes
RF Input, N(F)	+20 dBm (100 mW) max
USB Connectivity	PC; USB drive and accessories
Size and Weight	11.5" x 10.5" x 3.8", 7.8 lbs
Saved Trace Storage	300 internal; 90,000 USB drive
Win CE Viewers	Word, Excel, PPT, PDF, Image
Power Meter	5012, 5010B, 5010T, 5011, 5011-EF, 5016 and 5017 External Sensors, Optional

VNA Specifications

Frequency Range	1.6 MHz to 3.6 GHz
Frequency	+/-2 ppm uncertainty, 40 kHz res
Data Points	705 default, 12 to 11265 selectable
Sweep Time	o.6 s with 705 data points
RF Output, N(F)	-40 dBm to +10 dBm, 1 dB steps
Interference Immunity	+13 dBm on frequency
Directivity	-42 dB calibrated
1-Port VNA Measurements	Match (VSWR & Return Loss dB) Distance-to-Fault (DTF), Cable Loss
2-Port VNA Loss/Gain	-90 to +50 dB, 12/24 V Int Bias-Tee
2-Port VNA Measurements	Gain & Loss (Amplifier Gain, Insertion Loss, Antenna Isolation)

Model	Standard Accessories
7002A220-1	Soft Carry Case
920-SH36-OPS	OPS Operators Manual
920-SH36-REF	Start-Up Instructions
5A2653-10	USB Cable, 10 ft, USB A (M) to USB B (M)
5A2743-1	AC Adapter/Charger
5A2238-3	Car Adapter/Charger
5A2720-2	Internal Li-Ion Battery, Field Replaceable
7002A210	PC Tool Software and Manual CD's
5A2745-1	USB Drive 1 GB, Win CE Compatible

Spare standard accessories are available as optional accessories. Manuals and soft/firmware updates available at www.bird-technologies.com.

Model	VNA Optional Accessories
CAL-MN-C	Calibration Combo, Open/Short/Load, N(M)
CAL-FN-C	Calibration Combo, Open/Short/Load, N(F)
CAL-ME-C	Calibration Combo, Open/Short/Load, 7/16 DIN(M)
CAL-FE-C	Calibration Combo, Open/Short/Load, 7/16 DIN(F)
2-T-MN	Load, 2 W, N(M)
2-T-FN	Load, 2 W, N(F)
5A2264-09-MF-10	RS-232 Cable, 10 ft, 9-pin, (M) to (F)

WATERFALL (SPECTROGRAPH)

