WR-G305i

Software-Defined VHF/UHF Receiver

- 9 kHz-1800 MHz frequency range
  (except cellular bands where required by law)
- Optional 3300 MHz downconverter
- Tracking front-end filters
- Dual-loop AGC and AFC
- Software-defined demodulation
- Excellent sensitivity
- Fast scanning speed
- Multiple squelch modes
- Real-time spectrum analyzer
- Powerful software features
- Standard PCI card
- Plug and Play installation

The WiNRADiO WR-G305i is the first software-defined VHF/UHF scanning receiver on a PCI card.

In a software-defined receiver, the entire last intermediate frequency stage and an all-mode demodulator are implemented entirely in signal-processing software running on a personal computer. This brings about significant advantages: performance, flexibility, configurability, reliability and convenience. There is also a reduced risk of obsolescence, as new demodulators for new types of digital modulations can be added by simply upgrading the software.

The receiver is constructed to be especially resistant to computer-generated noise. It comes on a standard 2/3 length PCI card and installs in minutes. Just plug the receiver in, install the supplied software and let this innovative receiver surprise you with its performance and amazing new features.

The WiNRADiO WR-G305i receiver is designed for demanding applications where the ability to locate even the weakest signals in background noise and extract the cleanest possible audio is important.

The numerous types of squelch, scanning modes and high scanning speed make this receiver a highly flexible and versatile scanner, eminently suitable for demanding VHF/UHF monitoring tasks. Its advanced software features and extensive multi-level software support provide the G305i receiver's user with an excellent communications intercept and experimentation tool of choice.

The WiNRADiO WR-G305i receiver's high sensitivity, very low phase noise and flat-passband internal filtering make it also ready for exploring modern digital modulations.

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Hardware

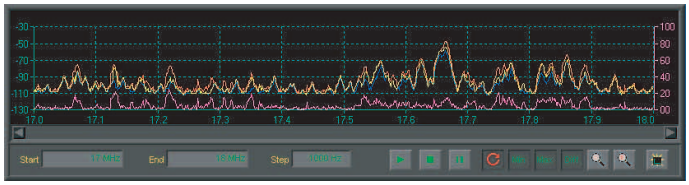
The construction of this receiver is truly groundbreaking and innovative. The remarkably sensitive receiver sets a new standard of cleanliness (in terms of suppression of interference and spurious signals) despite the fact that it is used in a potentially noisy PC environment.

The card complies to the PCI 2.2 standard. Being only two thirds of the full PCI length, it should fit in most modern desktop computers.

Software

The WR-G305i receiver front panel contains numerous unique features, as well as conventional displays and controls. There are many alternative tuning methods, three scanning modes, automatic step size selection and a truly remarkable S-meter which can show values in S-units, dBm or microvolts. There is a dual-loop AGC with selectable reaction speeds, as well as manual IF gain control. Memory is limited only by the capacity of your hard drive. An audio filter shapes the demodulated signal to your listening preferences.

There are also two spectrum scopes, invaluable in determining activity on the band and normally found only on much more expensive equipment. A multiple-parameter squelch and a graphical hit-counter are also included in the arsenal of this very powerful and flexible scanner.



Demodulators

The standard supplied demodulator provides the performance of a highly respectable scanner with more features than a conventional scanning receiver would typically provide, even synchronous AM demodulation and high-resolution real-time spectrum scope.

The optional Professional Demodulator provides even more: graphically and continuously adjustable IF filter (in 1Hz increments), user-definable audio filter, interactive block diagrams with two additional audio spectrum scopes, additional demodulation modes and even various built-in test and measurement facilities normally only available in expensive communication test equipment.

Options

Wide-FM Demodulator Option

The Wide-FM Option provides a separate wide-FM demodulator. The wide-FM demodulation is performed in hardware, using conventional hardware-based demodulation techniques, in order to ease the requirement of PC processing power which would otherwise be required for a signal of this bandwidth. In other words, the Wide-FM Option is an entirely separate receiver in its own right.

Software Options

In addition to the Professional Demodulator, there are numerous software options available for this receiver, for example various digital demodulation and decoding options, plug-ins to facilitate special monitoring, memory, database and exploratory functions, and even a "Radio Basic" programming language specially designed for computer-based radio receivers.

Antennas

WiNRADiO has an extensive range of antennas and antenna accessories to suit most indoor or outdoor applications of the G305i receiver.

Please visit our Web site **www.winradio.com** for the latest available options and accessories.

Specifications

Receiver type	DDS-based dual-conversion superheterodyne with software-defined last IF stage and demodulator
Frequency range	9 kHz - 1800 MHz
Tuning resolution	1 Hz
Mode *(See Note 1.)*	AM, AMN, AMS, LSB, USB, CW, FM6, FMN (FMW optional)
Image/Spurious rejection	60 dB
IP3	0 dBm @ 20 kHz
MDS	-135 dBm
Phase noise	-148 dBc/Hz @ 100 kHz
RSSI accuracy	5 dB
RSSI sensitivity	1 µV
Squelch modes	Level, Noise, Voice, CTCSS, DCS
Scanning modes	Direct, Range, Memory
Scanning speed	max 60 channels/s (may depend on CPU)
Intermediate frequencies	IF1: 109.65 MHz IF2: 12 kHz
Frequency stability	10 ppm (0 to 60˚ C)
Antenna input	50 ohm (SMA connector)

Selectivity (-6dB) *(See Note 2.)*	
AM	6 kHz
AMN	4 kHz
AMS	4 kHz
LSB, USB	2.5 kHz
CW	500 Hz
FM6	6 kHz
FMN	12 kHz
FMW	230 kHz (optional)

Sensitivity (AM/SSB/CW 10dB S/N) (FM 12dB SINAD) *(See Note 3.)*	**Mode**	**0.15-500 MHz**	**500-1800 MHz**
	AM, AMS	1.7uV	1.85uV
	LSB, USB	0.35uV	0.37uV
	CW	0.2uV	0.25uV
	FM6, FMN	0.7uV	0.8uV
	FWM (optional)	2.0uV	2.0uV

Interface type	PCI 2.2 compliant
Dimensions	Length: 195 mm (7.68") (excluding mounting bracket) Height: 99 mm (3.90") (excluding edge connector) Thickness: 19 mm (0.75") (incl. components on either side)
Weight	330 g (11.6 oz)

Notes:
1. The Professional Demodulator offers two additional demodulation modes, DSB and ISB.
2. The Professional Demodulator offers continuously adjustable IF bandwidth from 100 to 15000 Hz.
3. The AM sensitivity is specified at 30% modulation for 10 dB S/N ratio.For 80% modulation, typical AM sensitivity of WR-G305i is 0.60 µV in 0.15-500 MHz range. The Professional Demodulator improves sensitivity further by making it posible to extend filter lengths, and adjust the IF bandwidth for optimum reception of the received signal. This results in a typical improvement by 2-3 dB on AM/SSB/FM and up to 10 dB on CW.

System requirements	IBM PC compatible (CPU 500MHz or higher, PCI slot), Sound Blaster 16 (or compatible sound card), Windows 98/ME/2000/XP

Specifications are subject to change without notice due to continuous product development.

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