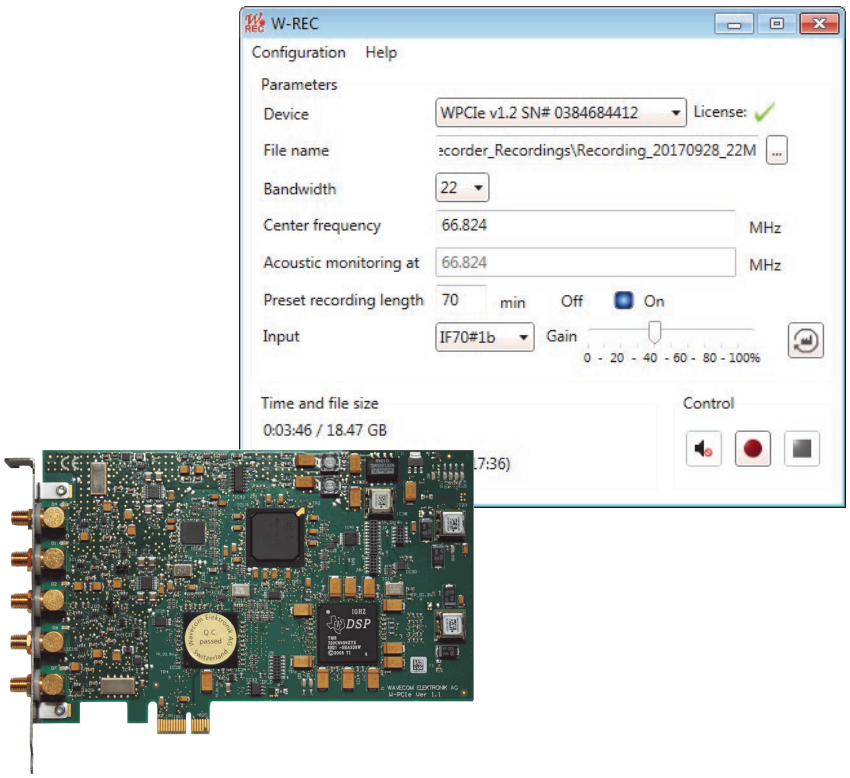
WAVECOM
NACHRICHTENTECHNIK

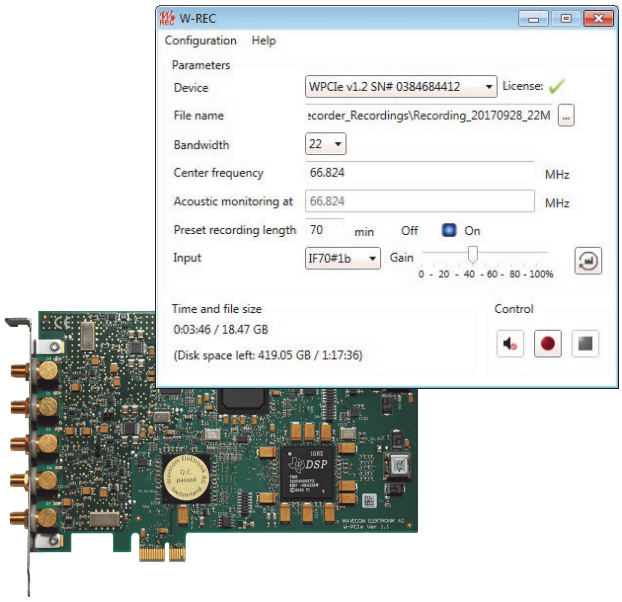
WAVECOM® Wideband Signal Recorder W-REC



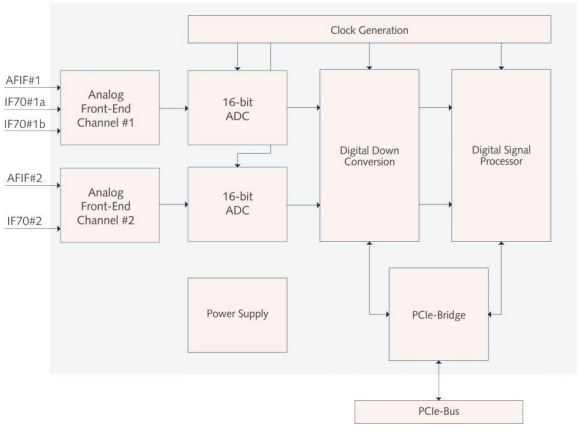
Wavecom wideband signal recorder W-REC records HF signals from an antenna, IF signals from a receiver or satellite signals from a down-converter directly. Together with various Wavecom tools and systems W-REC delivers a solution for long time wideband spectrum analysis and decoding.

W-REC Features and Facts

- W-REC runs on the Wavecom hardware W-PCIe. It records signals at the two AF/IF inputs (AFIF#1 and AFIF#2) and the three 70 MHz IF inputs (IF70#1a, #1b and #2) directly.
- The bandwidth of both AFIF inputs is 0—25 MHz and for the IF70 inputs is 35 MHz (52.5 MHz to 87.5 MHz).
- The recording bandwidth is selectable, from 4 MHz to 25 MHz.
- The signals can be from an HF antenna (3—25 MHz) directly or from various IF outputs of a receiver (e.g., 10.7 MHz).
- W-REC can record satellite signals from a down converter with 70 MHz IF output.
- W-REC has a simple graphical user interface (GUI) and uses an in-card license.
- User can set how long the recording should run by “Preset recording length (in minutes)”. The recording will stop automatically when the time is reached.
- The recording will stop when the target hard-disk is almost full.
- User can easily check if the wiring is correct by acoustic monitoring a signal at the speaker.
- W-REC records signals in the easy-to-understand WAV format and the versatile PxGF format.
- During the recording the user can change the “Center frequency”. The actual value will be written into the recording file on-the-fly.
- W-REC records signals in IQ (16-bit each part) on a dedicated (separate) Solid State Disk (SSD) without time limit.

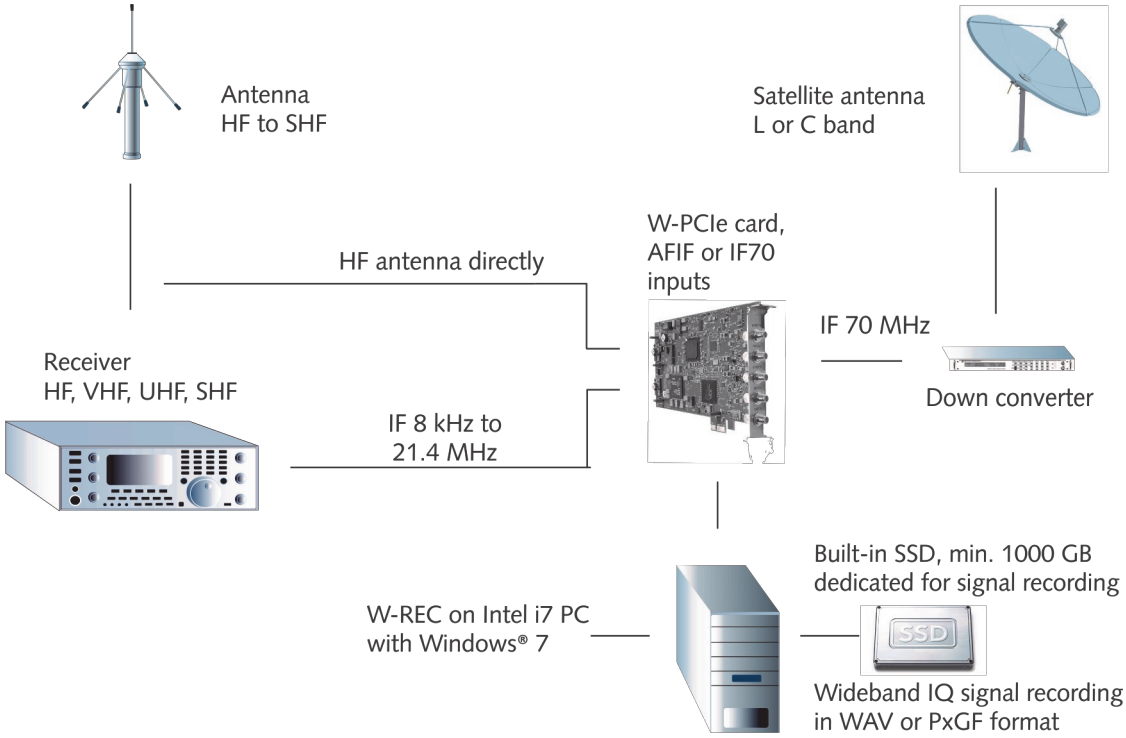


W-REC hardware and application GUI



W-REC hardware two-channel block diagram

Typical Application

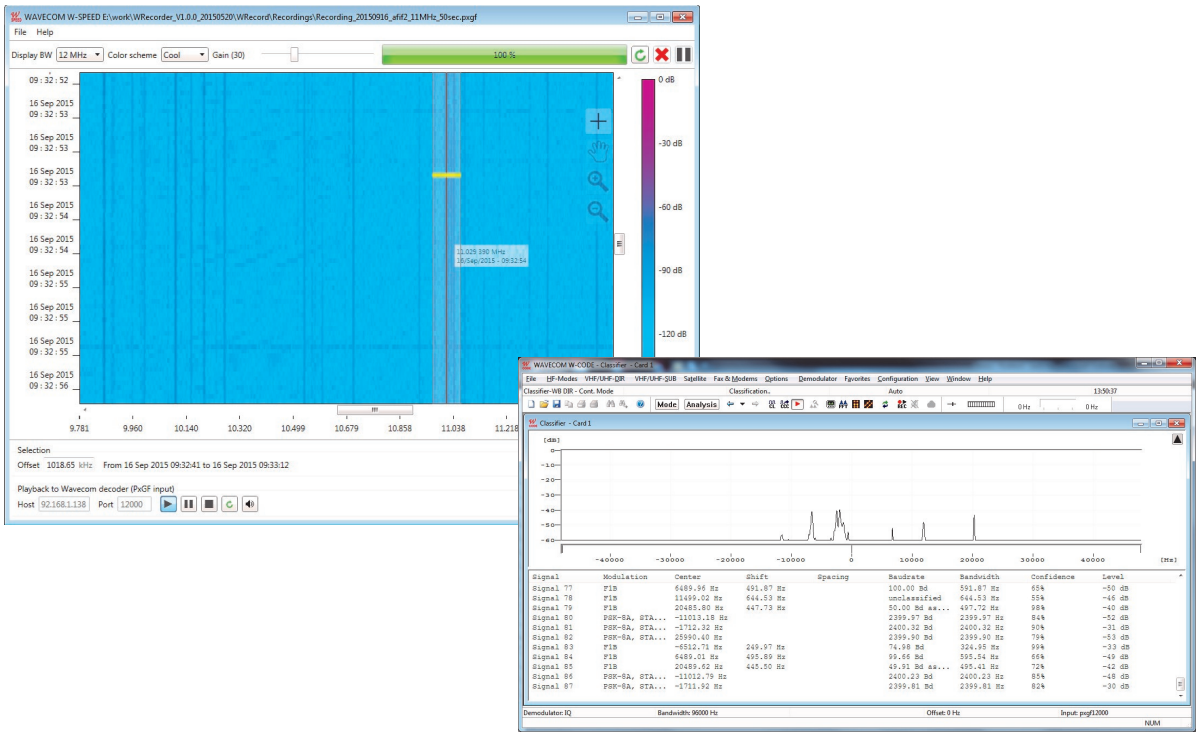


Typical connections to make wideband signal recording

- Connect an HF antenna or
- Connect various IF outputs of a receiver to the AFIF#1 or AFIF#2 input or
- Connect the 70 MHz IF output of a satellite down converter to the IF70 inputs of a W-PCIe card
- Run W-REC on an Intel i7 PC with 12 GB memory and Windows 7, select a proper recording bandwidth, set a file path and set the recording center frequency
- Preferably record the signal on a built-in dedicated SSD (min. 1 TB)
- Recording can be in WAV or PxGF format
- Define a recording length (in minutes). The recording will stop automatically when the time is reached
- “Center frequency” can be changed during recording. The actual value will be written to the recording file on-the-fly

- For performance reason, please record signals on a disk other than the system hard disk (usually c:\)
- Do not use an external USB hard disk for W-REC, because the speed can be too slow. Also a conventional built-in hard disk (HDD) may be too slow to make wideband recording

Typical Application
Wideband Spectrum Analysis with W-SPEED and W-CODE



Display a wideband recording in W-SPEED, choose a port of the spectrum and analyse in W-CODE classifier

- Load a wideband recording in the spectrum editing tool W-SPEED for 2-dimensional spectrum display: x-axis is the frequency with the center frequency in the middle; y-axis is the recording timestamp
- Select a 96 kHz signal stripe and stream the narrowband signal to other Wavecom decoder (e.g., W-CODE) or monitoring system (W-SPECTRA) for detail analysis

W-PCIe Card Specifications and Technical Data

Inputs	AFIF#1 and AFIF#2	IF70#1a, IF70#1b and IF70#2
Connector	SMA female	SMA female
Frequency range	50 Hz to 25 MHz	52.5 MHz to 87.5 MHz (SAW filter)
Bandwidth	5 kHz to 500 kHz	5 kHz to 500 kHz
Frequency raster DDC	1.0 Hz	1.0 Hz
Signal level	2 mVrms to 0.5 Vrms 20 mVrms to 2.5 Vrms with 20 dB attenuator (jumpered)	20 mVrms to 2.5 Vrms
Input impedance	> 1 kOhm	50 Ohm
Input max sampling rate	92.16 MHz	92.16 MHz
Input sampling rate jitter	1 ps (RMS 12 kHz to 20 MHz)	1 ps (RMS 12 kHz to 20 MHz)

Card type	Half-size PCIe card (PCI Express)
Number of concurrent, independent inputs	2 AFIF#1 or IF70#1a or IF70#1b -with- AFIF#2 or IF70#2
Dimensions (L x W x H)	168 x 106 x 22 mm
Weight	0.15 kg
Power requirement (typical values)	+3.3V max. 1.0 A +12V max. 0.5 A
Bus interface	PCIe x1 Link 2 Gbit/s
Operating temperature range	0 °C to 50 °C
Case temperature range	0 °C to 55 °C
Storage temperature range	0 °C to 70 °C
Relative humidity	10 to 90 % (non-condensing)
A/D converter	AD9268 dual 16 bit ADC
Dynamic range	> 60 dB
Digital down converter DDC	FPGA Cyclone IV 55K
DSP	TI DSP320C6454
Watchdog for on-board generated voltages	Yes
Conformity	CE ISO 9001 ISO 14001 RoHS

Since more than thirty years Wavecom Elektronik AG has developed, manufactured and distributed high quality devices and software for the decoding and retrieval of information from wireless data communication in all frequency bands. The nature of the data communication may be arbitrary, but commonly contains text, images and voice. The company is internationally established within this industry and maintains a longstanding, world-wide network of distributors and business partners.

Product Information

Products	http://www.wavecom.ch/product-summary.php
Datasheets	http://www.wavecom.ch/brochures.php
Specifications	http://www.wavecom.ch/product-specifications.php
Documentation	http://www.wavecom.ch/manuals.php
Online help	http://www.wavecom.ch/content/ext/DecoderOnlineHelp/default.htm
Software warranty	One year free releases and bug fixes, update by DVD
Hardware warranty	Two years hardware warranty
Prices	http://www.wavecom.ch/contact-us.php

System Requirements and Ordering Information

	Minimum	*Recommended*
CPU	Core i7 3.2 GHz	Core i7-6700 3.4 GHz
Memory	12 GB RAM	16 - 32 GB RAM
OS	Windows 7 32-bit or 64-bit	Windows 10 32-bit or 64-bit

Product Code	Description
WRECSYS	Wideband signal recorder. Complete system, including W-PCIe card as a recording hardware
WREC	Wideband signal recorder. Software only, recording hardware not included

Distributors and Regional Contacts

You will find a list of distributors and regional contacts at http://www.wavecom.ch/distributors.php

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