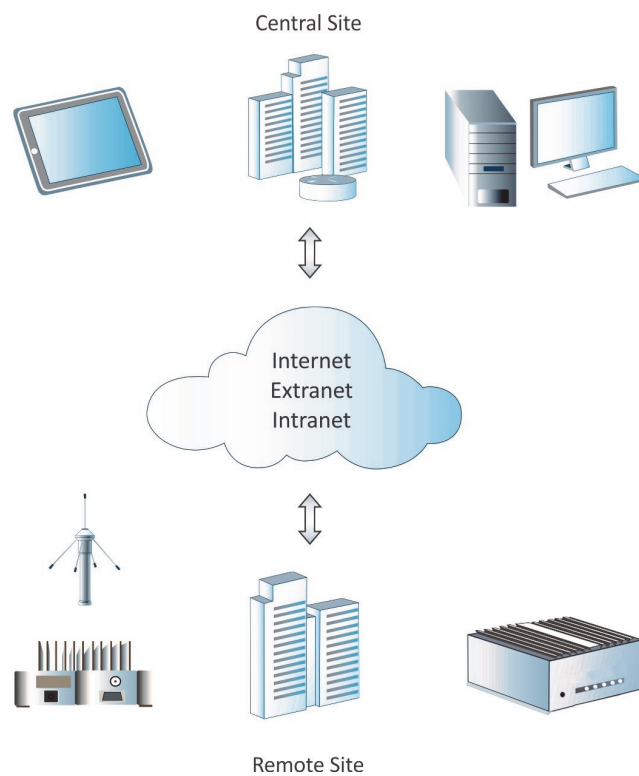


WAVECOM® W-CLOUD

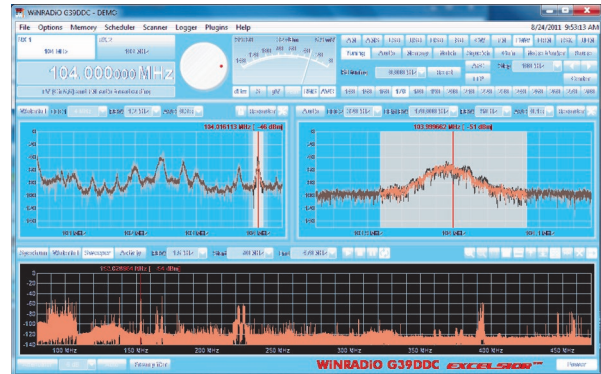


W-CLOUD works over any Internet, Extranet or Intranet connection with appropriate bandwidth and therefore allows reliable and input signal true decoding from any location in the world.

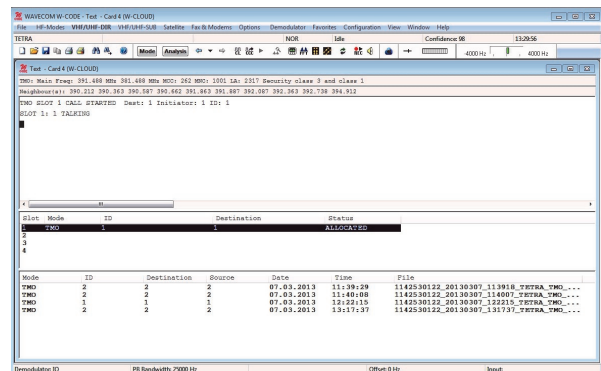


W-CLOUD Features and Facts

- ◆ Together with other Wavecom products W-CLOUD facilitates the implementation of monitoring networks with a large-scale geographical coverage and centralized evaluation of acquired signals
- ◆ Worldwide remote monitoring of radio transmissions in any frequency band, anywhere via Internet, Ethernet LAN or Wireless LAN
- ◆ W-CLOUD can be installed at any desired location offering an Internet, LAN or WAN connection
- ◆ Automatic network search for W-CLOUD servers, all GUI functions of W-PCI and W-PCIe are available exactly as for a local connection
- ◆ Direct I/Q support for WinRADIO G33DDC and G39DDC SDRs without additional hardware is available from release v8.3.00
- ◆ W-CLOUD streams I/Q formatted signals from a remotely installed W-PCI or W-PCIe to a W-CODE instance at a central site, and offers a full frequency range of transfers from AF to IF (50 Hz - 25 MHz) and 70 MHz IF (BW 35 MHz)
- ◆ W-CLOUD is a TCP/IP-based application which enables uninterrupted and encrypted transfer of high-quality I/Q data from a remote server to a local client
- ◆ Connections may be interrupted and restored at anytime
- ◆ The W-CLOUD server is based on Windows Embedded[®] Compact and runs as a Windows 7 32-bit or 64-bit application. W-CLOUD is a very stable application with a tiny footprint



I/Q Channel via IP



TETRA real-time decoding using W-CLOUD and W-CODE across a VDSL Internet connection

Signal Sources and Devices

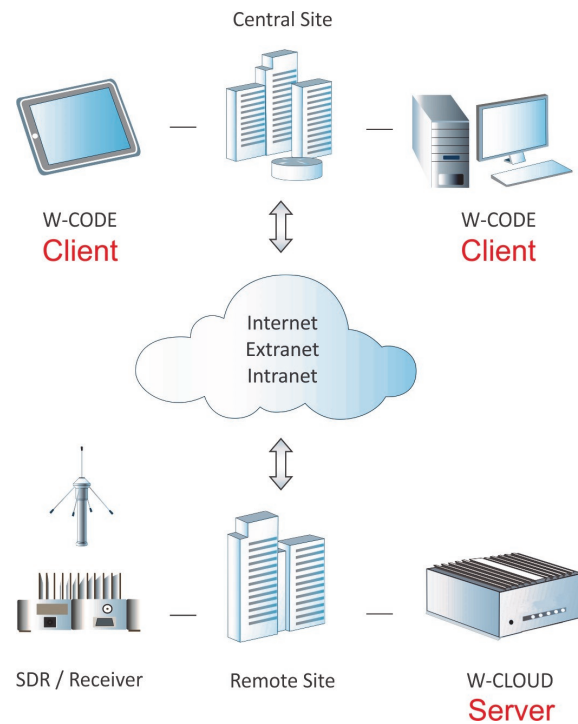
Most manufacturers of SDR and receivers only offer compressed signals across the Internet, which prevents decoding of many modes.

To avoid this, W-CLOUD forwards its input signal as I/Q data. Using W-PCIe or W-PCI the following options are available:

- ◆ IF from 8 kHz to 21.4 MHz
- ◆ IF from 52.5 bis 87.5 MHz
- ◆ Uncompressed AF from the receiver
- ◆ Uncompressed AF from the host sound card

Data transfer without additional hardware is also available:

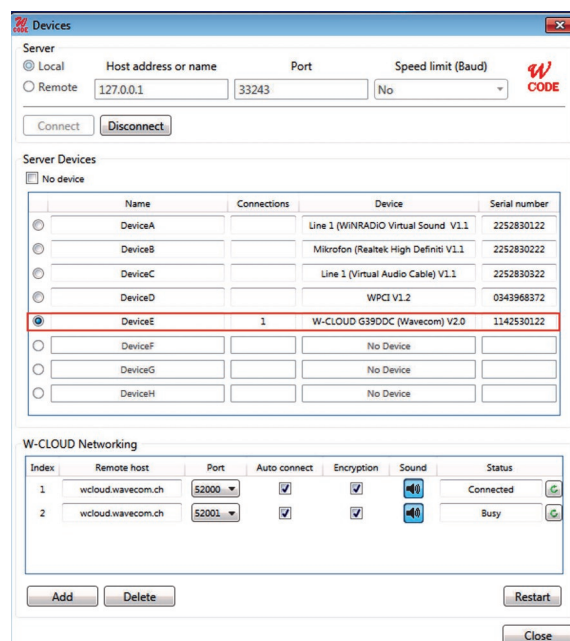
- ◆ Direkt transfer of WiNRADiO Virtual Audio Cable (VSC) I/Q data



W-CODE input devices appear exactly the same way independently of being accessed locally or via W-CLOUD networking and are integrated in the same menu.

W-CLOUD networking is initiated using Plug-and-Play and the IP address or device name of the remote server, here "wcloud.wavecom.ch".

The „W-CODE Devices and W-CLOUD Networking” menu contains all static and dynamic information on local and remote input devices and network connections.



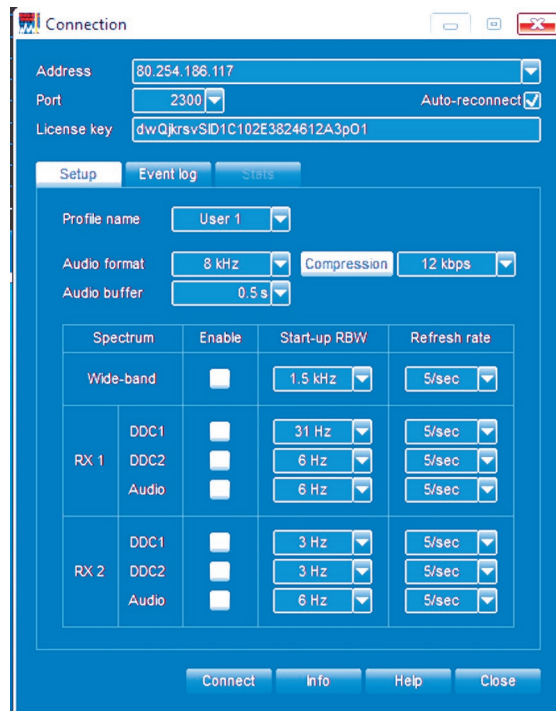
SDR and Receiver Remote Control

WiNRADiO also offers a fully-fledged client-server solution for remote control of the modern G33DDC and G39DDC SDRs. The illustration shows the start window of a G39DDC Internet connection. All remote receiver functions are locally available.

W-CLOUD offers an independent connection with digital I/Q quality.

The SDR or receiver is controlled by the software from the receiver producer. The transfer of SDR control data and W-CLOUD I/Q data takes place simultaneously and independently from each other.

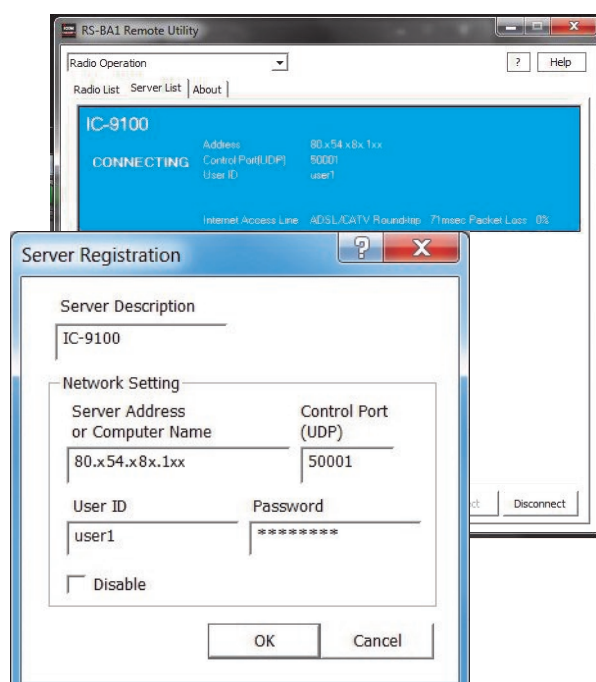
W-CODE and W-CLOUD are not locked in with any producer.



As a set-up example ICOM[®] offers RS-BA1, a client-server based application for remote control of transceivers via the Internet.

The producers of SDR and receivers only offer compressed signals for Internet connections. This makes the decoding of technically tasking HF and VHF/UHF DIR signals impossible.

To fully utilize its potential for all modes, ICOM[®] IC-9100 must be modified to output a 36 kHz IF. This receiver is well adapted for difficult receiving conditions.

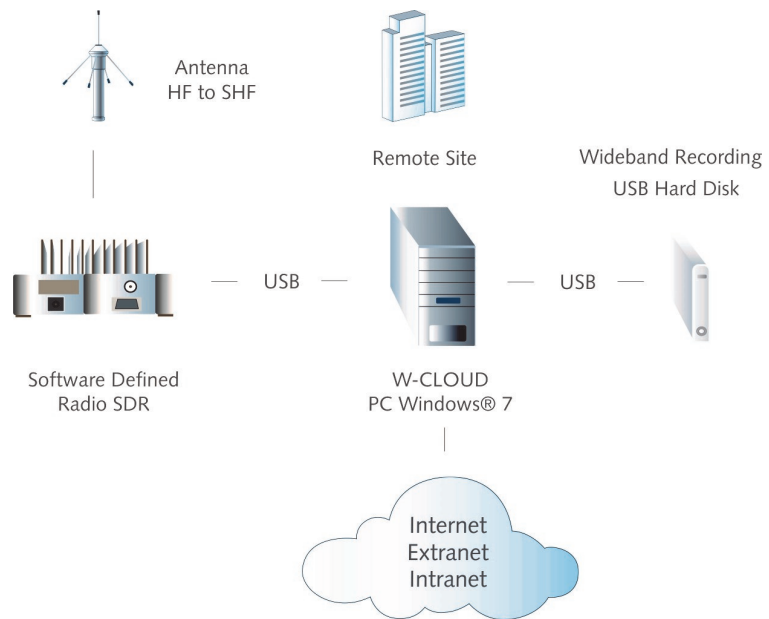


SDR and Receiver Applications

The example shows remote control of an WiNRADiO SDR and remote decoding using W-CLOUD and W-CODE.

The digital VSC data are forwarded via W-CLOUD as I/Q data.

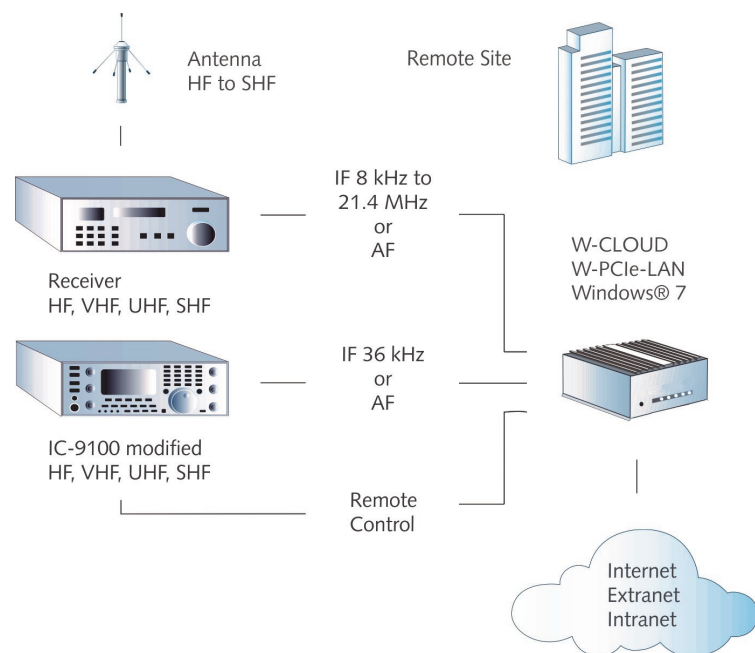
All HF, VHF/UHF DIR, VHF/UHF SUB and Satellite modes can be decoded with this setup.



The example shows remote control of a standard or an ICOM[®] Receiver and remote decoding using W-CLOUD and W-CODE.

The IF of the receiver is sent to the W-PCIe card acting as a DDC client which forwards the I/Q signal.

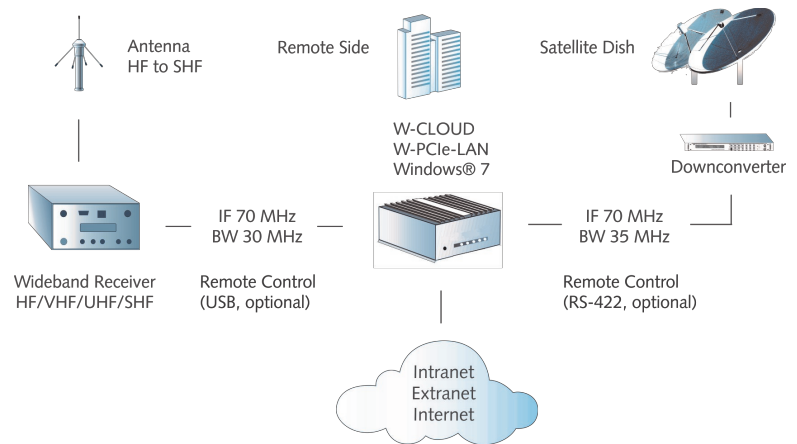
This configuration can also be used for all receivers with an IF between 8 kHz and 21.4 MHz. In addition AF can be forwarded as an uncompressed I/Q signal.



SDR and Receiver Applications

The example shows remote control of a wideband receiver and remote decoding using W-CLOUD. The 70 MHz IF of the receiver or down-converter is sent to the W-PCIe card acting as a DDC client which forwards the I/Q signal.

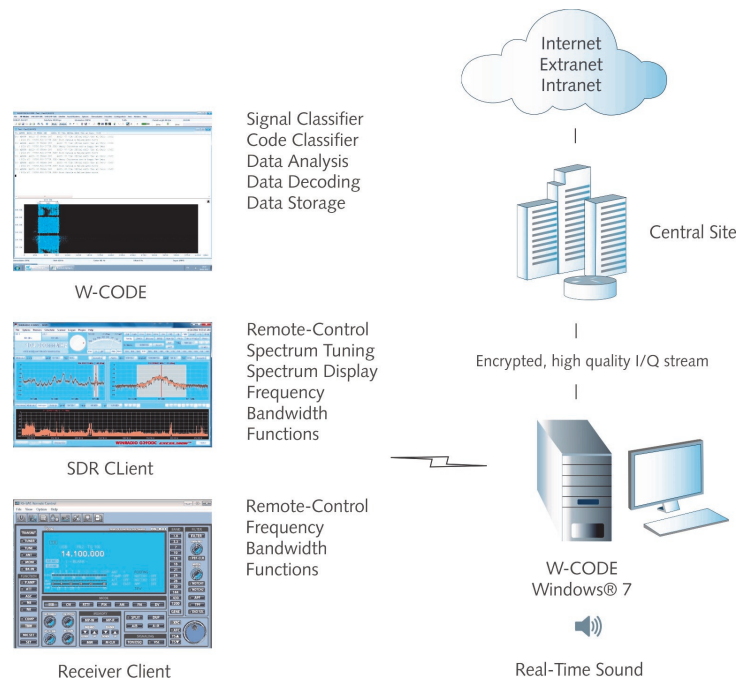
All HF, VHF, UHF and SHF modes can be decoded with this setup. W-CODE and W-CLOUD also offers automatic, remotely controlled reception of satellite signals.



Client Example

At the receiving end W-CODE acts as a client for W-CLOUD allowing access to all W-CODE functions. If so desired, remote control of the SDR or receiver is managed by a producer application.

Both applications work simultaneously and do not mutually interfere.

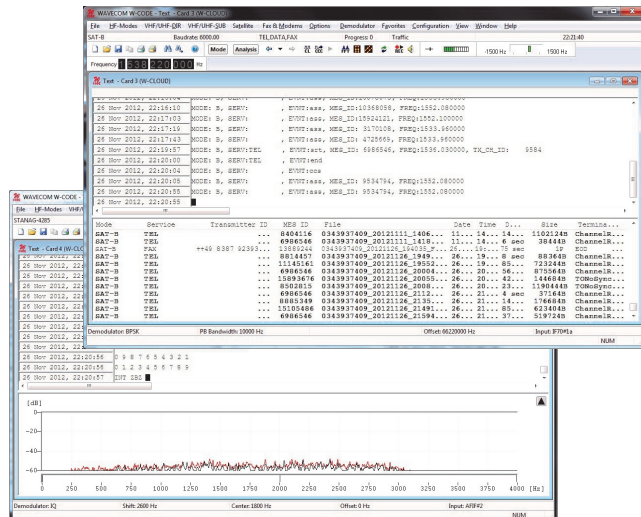


Simultaneous Processing and Signal Analysis

Simultaneous decoding of two or more modes is possible. This setup can be further expanded as required. W-PCI and W-PCIe also allows two inputs with complete DDC functionality.

W-CLOUD allows up to eight concurrent instances and inputs on the same host PC or workstation. The instances are completely independent which facilitates their use. An advantageous Workstation License is available for such setups.

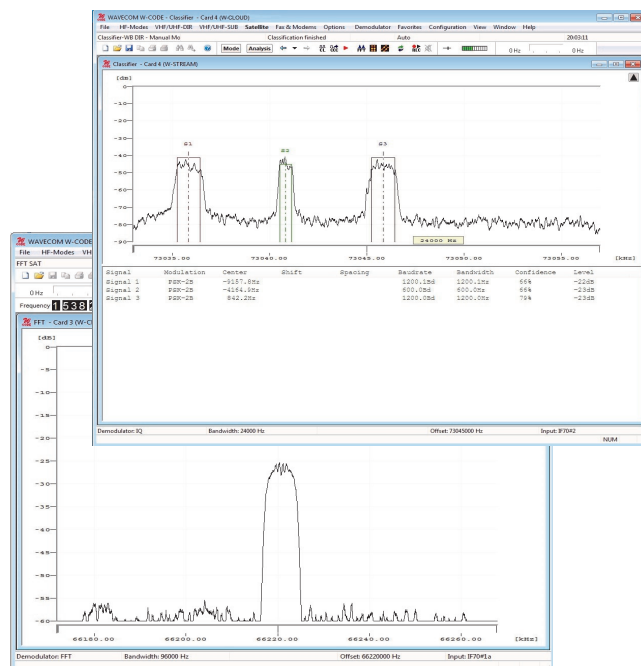
DDC or SDR may provide the input signal, additional hardware is not required.



Remote signal acquisition and frequency control works exactly as for a local connection. W-CLOUD and high-quality I/Q transfer enables the full functionality of all remote analysis functions.

Automatic signal classification is available using W-CLOUD, both the narrow and wide band classifiers (CL-NB and CL-WB) can be fully remotely controlled.

Also Classifier-Code-Check (CCC) is fully functional using W-CLOUD. The example shows a W-CLOUD connection of a 96 kHz satellite signal and a measurement with the wideband classifier.



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

| | <i>Minimum</i> | <i>Recommended</i> |
|--------|-----------------|-----------------------------|
| CPU | Core i7 3.2 GHz | Core i7-6700 3.4 GHz |
| Memory | 12 GB RAM | 16 - 32 GB RAM |
| OS | Windows 7 | Windows 10 32-bit or 64-bit |

| Product Code | Description |
|--------------|---|
| W-CLOUD | Intranet, Extranet and Internet signal streaming server for W74PC, W-PCI, W-PCIe and W-CODE |

Distributors and Regional Contacts

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