

## Audio Recording from FM-Radio

**Khronos-WS-FM is a radio capture system designed for simultaneous recording of multiple radio stations. The frequency of each station is set in software. RDS decoding is also supported.**

The card uses a high-speed A/D converter to digitise the entire FM band, with up to 32 individual tuners.

It achieves exceptionally low audio distortion through the use of linear phase filtering and mathematically precise FM demodulation and stereo decoding. FM demodulation and stereo decoding is done in FPGA fabric, while RDS decoding, if enabled, is performed in the driver using the host CPU's SSE-2 instruction set. This division of labour between the FPGA and driver allows greatest flexibility in catering for future baseband technologies while minimising the CPU overhead of the card.

The card can be configured to operate in stereo, mono or paired mono (two mono stations combined on a 2-channel audio stream) modes. Multiple cards can be used in a single PC, subject to available CPU bandwidth. The audio de-emphasis may also be set to either 50us or 75us. In Australia, New Zealand and Europe 50us is used, while in the USA and Canada 75us is used.

A utility called FMSpectrum is supplied. This displays the RF spectrum from 85MHz to 111MHz, using data from the card's front-end 256-point FFT and may be useful in selecting the best location for the antenna or resolving interference problems.

The system is factory-configured for 6, 12, 18, 24 or 32 stations, but may be expanded in the field for an additional charge.



## SYSTEM SPECIFICATION

### Hardware

Intel core i5, RAM 8GB, 250 GB OS disk, Lan 1Gb

### Internal Storage

Expandable to 8GB in Raid 0, 1 or 5

### Operating System

Windows 10

### Supported Formats

.mp3, .wav, .wma, .aac

### Supported Languages

English, French, Spanish, Italian, Arabic

### Dimension

Rack Mount 3U ( 482mm X 380mm X 133 mm)

### Ordering Code

**KR-WS-FM-6-x** : 6channels FM recorder

**KR-WS-FM-12-x** : 12channels FM recorder

**KR-WS-FM-18-x** : 18channels FM recorder

**KR-WS-FM-24-x** : 24 channels FM recorder

**KR-WS-FM-32-x** : 32 channels FM recorder

*Storage option -x*

**-2** 2x 2 TB HardDisk Raid 1

**-4** 4x 2 TB HardDisk Raid 1

**-8** 4x 3 TB HardDisk Raid 5

**-0** none

## ○ KHRONOS-A

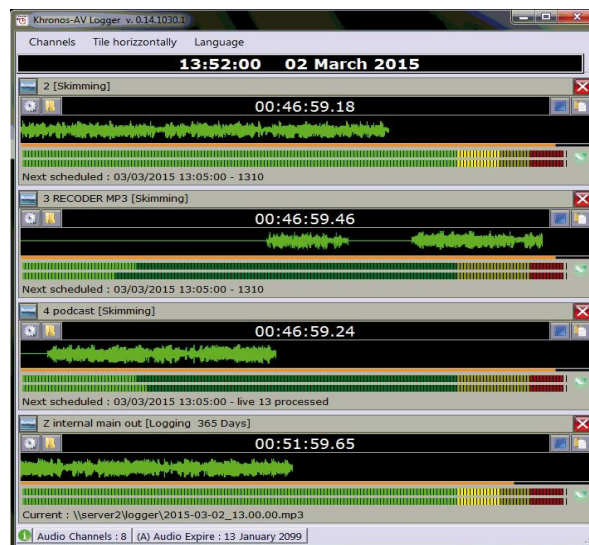
**Khronos-A** is an advanced audio logging software for all kind of recording. The acquired files are automatically indexed by date and time, a simple media player makes immediate access to content possible, even from a computer on the network. If disk space runs out **Khronos-A** will automatically delete the oldest files.

The multi-channel is acquired via audio input and based on real customer needs and storage capacity.

**Khronos-A** has a setup which allows complete customization of software use: you can choose the length of each file.

It's easy of use and his versatility make it an excellent tool for fulfilling the obligations established by law and other purposes.

Every audio input can be send to a Streaming Server like Shoutcast, Icecast, Window Media Server or in UDP stream or to a audio output device.



## ○ SOFTWARE FEATURES

- Multi-channel modular structure expandable up to 32 audio channels on the same server
- Storage records are configurable to specific customer needs
- Recording quality can be defined based on the available disk space, audio codec and bit rate
- Automatically deletes oldest files
- It supports Local Area Network (LAN) to view recordings from unlimited clients on the network or from remote computers
- It allows the recording of the same audio signal in different qualities and modes
- It can record the same source at low quality for logging, high quality for program replication and internet quality for podcasts
- Allows the programming time of the recordings or controlled via LAN or GPI
- Web server for listening to recordings remotely
- Ideal addition to a system for streaming
- Continuous system monitor and sending alerts and information via e-mail

## ○ RECEIVER SPECIFICATION

- Tuning Range: 87.5MHz to 108.5MHz in 25kHz steps
- Sensitivity: 10uV for 40dB S/N
- Maximum Input: 150mV RMS
- RF Input Impedance: 75Ω
- De-emphasis: Configurable as 50us or 75us
- Audio Distortion: <0.01%
- Audio Sampling Rate: 48kHz (all other rates automatically supported via Windows sampling rate converter)
- Number of Stations: 6, 12, 18, 24 or 32 (factory configured but end-user expandable)
- RDS Decoding: Optionally enabled in driver configuration