



FM GUARD

for P75, P175 and P275 FM Analyzer

Version 1.10

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1 Installation

1. Download and run the installation exe file.
2. Select the setup language and finish the installation using Next button.
3. In the case of USB connection install the USB driver now. Pure RS-232 connection or Ethernet connection requires no additional driver.
4. Make sure the FM analyzer is connected and powered, all connectors are seated completely and where possible, use screws to fix the connection.
5. Run the FM Guard, go to Setup – Device List and add your FM analyzer device(s).
6. Close the application.

2 Minimum Requirements

- P75/P175/P275/P275R FM analyzer
- Screen resolution required: 1024x576 @ 256 colors
- Screen resolution recommended: 1280x800 or better @ 32bit colors
- USB or serial port or Ethernet adapter
- Windows XP or later

3 Purpose and Features

The FM Guard is a complex tool for FM station monitoring.

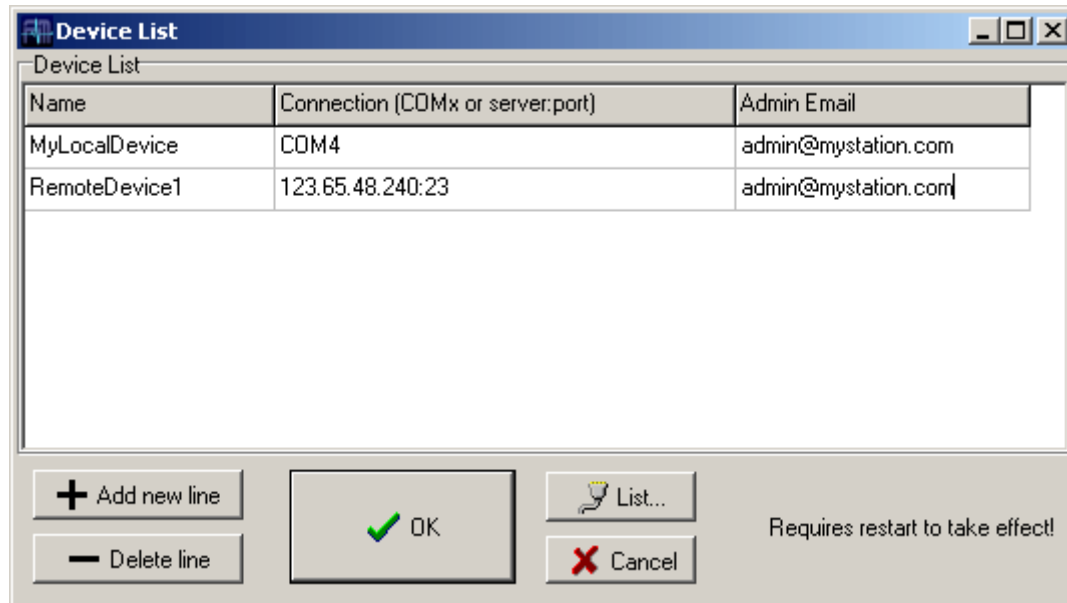
- Supports monitoring of several stations at once using appropriate number of analyzers
- Automated station's parameters monitoring and logging
- User configurable alarm conditions, email alerts
- Built-in graph engine
- No need of learning any script language

For understanding all symbols and terminology please read the device's original manual.

4 Adding your Analyzer into the Device List

Before you can use the application, the Device List must be filled, telling the application where your FM analyzer is connected and how to access it.

Select Setup – Device List ().



If your analyzer is connected to the same PC (either via USB or RS-232), enter COMx as the connection parameter where x is the number of the serial port. By clicking on the List button you get all COM ports installed in your system. Users of the **P275R FM Monitor** main USB port must enter COMx:115200

If your analyzer is connected on remote site, enter the remote site address or host name, followed by port number. As a bridge between the FM analyzer and PC you may use the Pira CZ Remote COM Port (<http://pira.cz/show.asp?art=piracom>) or any commercially available Ethernet to RS232 adapter.

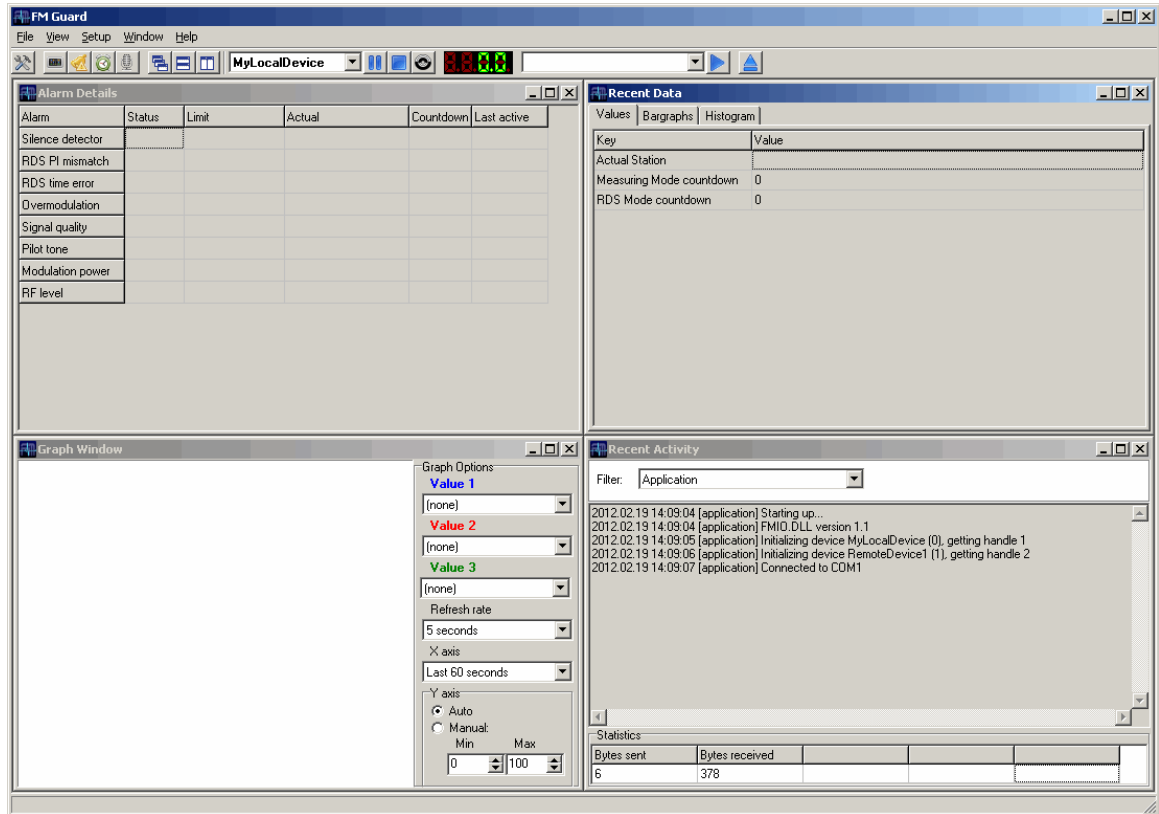
Admin Email is optional. It is used to report connection lost and sending daily reports. Leave empty if not to be used.

Note: A unique device name must always be filled!

Finally confirm the Device List changes by OK button and **restart the application** (close and run again).

Maximum number of devices depends on your operating system limits, thus it is not specified for the FM Guard.


5 First Steps

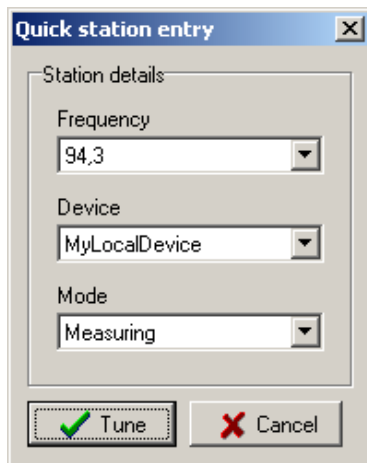


The application can work with several devices simultaneously. Select the device you want to control in the tool bar:



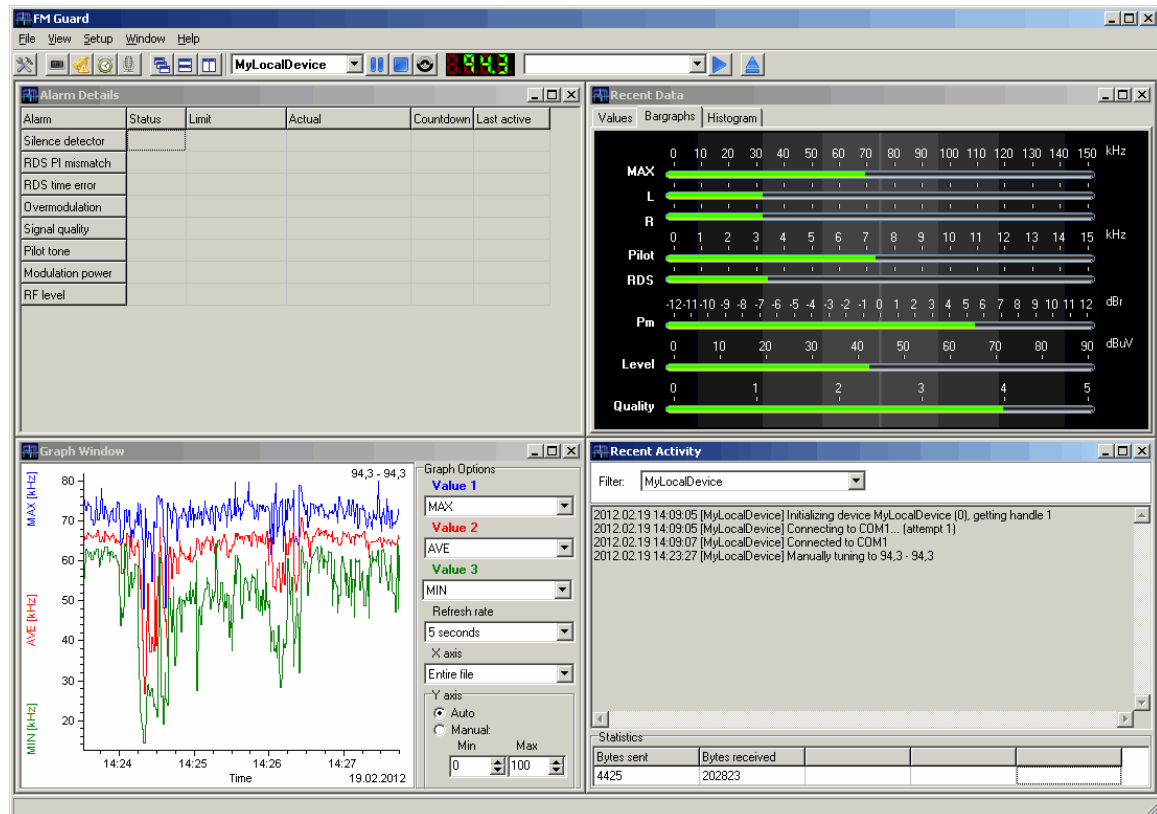
Other devices, if present, work in background.


To quick tune any frequency, click on the icon  :




Any device can occur in two basic modes: Measuring or RDS decoding. Select the Measuring to get station's numerical values and graphs. Select the RDS decoding to get RDS data.

Click on the Tune button. The station data will appear:



After you click on the Stop button (), the device becomes in idle state. All station data are saved in the application data folder.

Select View – Data Folder () in the main menu. The application data folder will appear. This folder contains:

- Application settings
- Application log files
- Copies of all emails sent by the application
- Station log files (measured data, graphs, RDS data, ... depending on configuration in Preferences)

The station log files with .csv extension can be directly opened in MS Excel and a graph can be simply created from any sequence of values, maintaining the original time data on X axis:

1)

Microsoft Excel - 94,3.csv

Soubor Úpravy Zobrazit Vložit Formát Nástroje Data Okno Nápověda

A1 datetime

	A	B	C	D	E	F	G	H	I	J
1	datetime	MAX	Pm	Signal Quality						
2	19.2.2012 14:23	75,3								
3	19.2.2012 14:23	75,3								
4	19.2.2012 14:23	72,8								
5	19.2.2012 14:23	74,9								
6	19.2.2012 14:23	74,2								
7	19.2.2012 14:23	74,2								
8	19.2.2012 14:23	73,7								
9	19.2.2012 14:23	70,2								
10	19.2.2012 14:23	70,2								
11	19.2.2012 14:23	69,4								
12	19.2.2012 14:23	76,2								
13	19.2.2012 14:23	76,2								
14	19.2.2012 14:23	70,4								
15	19.2.2012 14:23	71,8								
16	19.2.2012 14:23	78,3								
17	19.2.2012 14:23	73,3								
18	19.2.2012 14:23	70,7								
19	19.2.2012 14:23	73,8								
20	19.2.2012 14:23	73,8								
21	19.2.2012 14:23	72,1								
22	19.2.2012 14:23	71,5								
23	19.2.2012 14:23	70,6								
24	19.2.2012 14:23	72,3								
25	19.2.2012 14:23	73,3								
26	19.2.2012 14:23	70,3								
27	19.2.2012 14:23	69,7								

Průvodce grafem (1/4) - typ grafu

Standardní typy Vlastní typy

Typ grafu:

- Sloupcový
- Pruhový
- Spojnicový
- Výšečový
- XY bodový
- Plošný
- Prstencový
- Paprskový
- Povrchový
- Bublinový

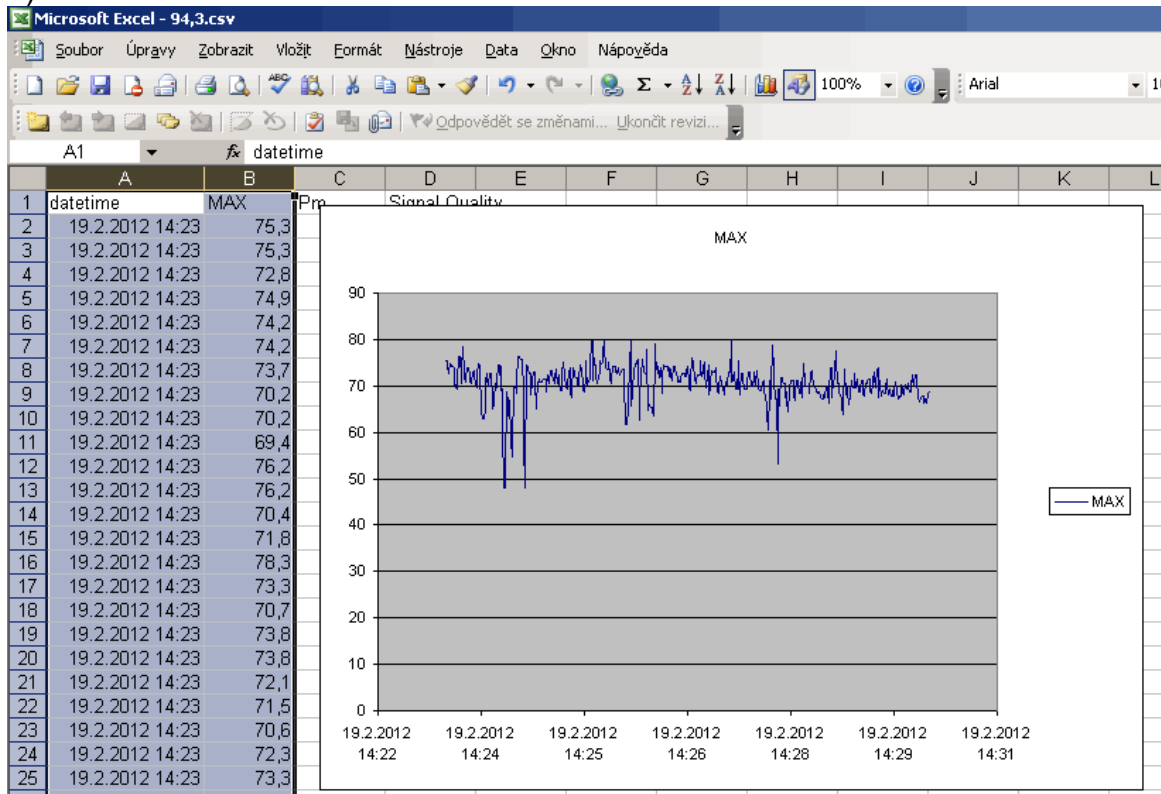
Podtyp grafu:

Bodový s datovými body spojenými pomocí hladkých spojnic a bez značek

Stisknutím zobrazíte ukázkou

Storno < Zpět Další > Dokončit

2)



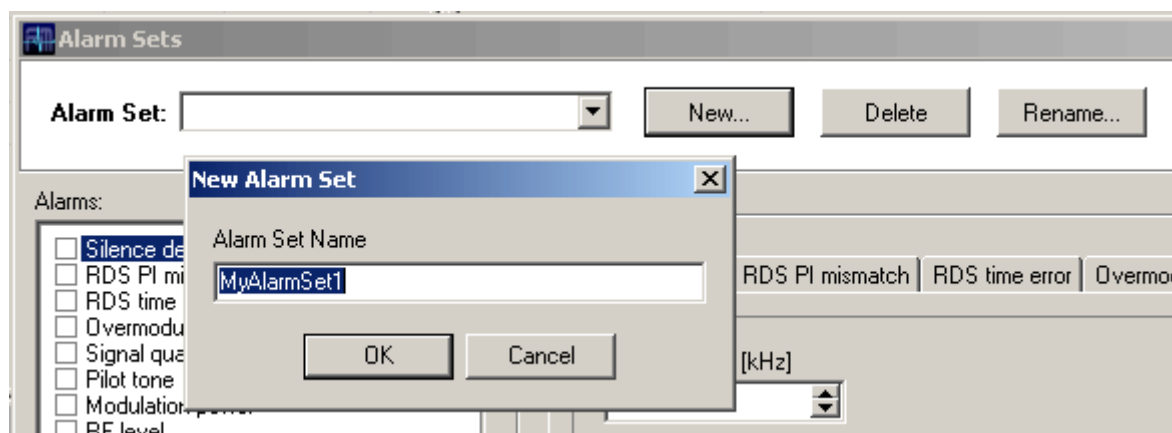
6 Alarm Sets

The application can perform specific operations (for example send email) upon specific conditions (for example if silence is detected in the station being monitored or if some parameters exceed limits given by broadcast standards).

The application allows several alarm sets to be established. Each alarm set can be assigned to one or more stations. The assignment is made in the Station List.

In the main menu select Setup – Alarm Sets (🔔).

In the dialogue window click on New button and enter the alarm set name:



Now you're editing the alarm set. In the list of alarms check all alarms you want to activate. Configure the alarm properties by clicking on the alarm name.

Time duration is associated with each alarm. This value specifies minimum time the alarm condition must remain to activate the alarm. Usually it has no sense to set very short values. Some conditions may occur in common operation for a short time although it does not automatically mean that an intervention is necessary. The duration time must be shorter than the total time dedicated for the station otherwise the alarm will never be activated.

Default email is used whenever no station email is defined.

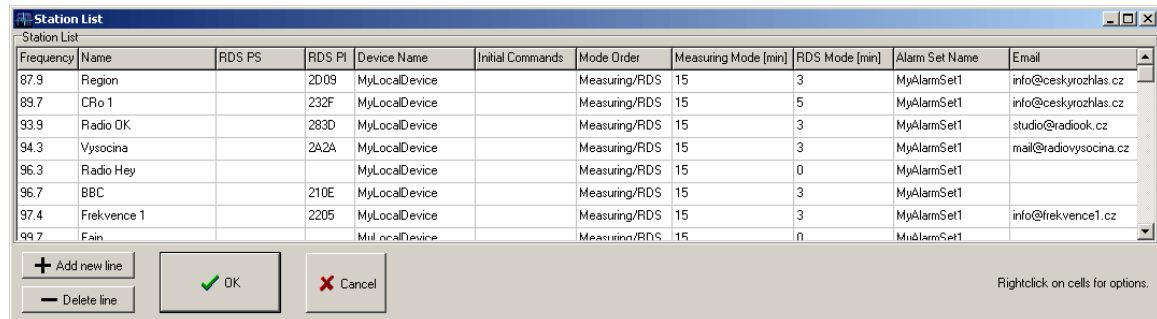
Click Close when done.

Note: Don't forget to configure the email feature in Preferences, otherwise no emails will be sent.

7 Station List

For the purposes of automated processing and easy access to the stations of interest the Station List is provided.

In the main menu select Setup – Station List ().



Frequency	Name	RDS PS	RDS PI	Device Name	Initial Commands	Mode Order	Measuring Mode [min]	RDS Mode [min]	Alarm Set Name	Email
87.9	Region		2D09	MyLocalDevice		Measuring/RDS	15	3	MyAlarmSet1	info@ceskyrozhlas.cz
89.7	CRo 1		232F	MyLocalDevice		Measuring/RDS	15	5	MyAlarmSet1	info@ceskyrozhlas.cz
93.9	Radio OK		283D	MyLocalDevice		Measuring/RDS	15	3	MyAlarmSet1	studio@radiook.cz
94.3	Vysocina		2A2A	MyLocalDevice		Measuring/RDS	15	3	MyAlarmSet1	mail@radiovysocina.cz
96.3	Radio Hey			MyLocalDevice		Measuring/RDS	15	0	MyAlarmSet1	
96.7	BBC		210E	MyLocalDevice		Measuring/RDS	15	3	MyAlarmSet1	
97.4	Frekvence 1		2205	MyLocalDevice		Measuring/RDS	15	3	MyAlarmSet1	info@frekvence1.cz
99.7	Fajn			MyLocalDevice		Measuring/RDS	15	0	MyAlarmSet1	

Use right mouse button on the cells to simply fill predefined values.

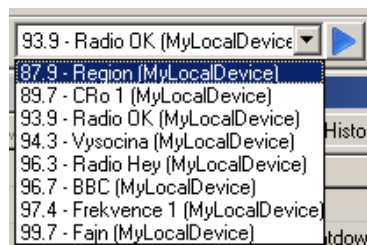
At least these parameters must be specified for each station:


- Frequency
- Unique station name
- Device name
- Measuring and RDS mode duration in minutes
- Alarm Set Name (if you want to perform the alarm tasks)

The station list effectively works as a task list for each device. The stations are tuned and monitored in the same order as they are entered in the Station List.

By default, the monitoring splits into Measuring mode and RDS mode. That solution is implemented for compatibility with P75 and P175. The P275 users may enter a value of -1 for the RDS mode so the RDS functions will be handled within the measuring mode.

After you click on OK button, the stations will appear in the application tool bar:




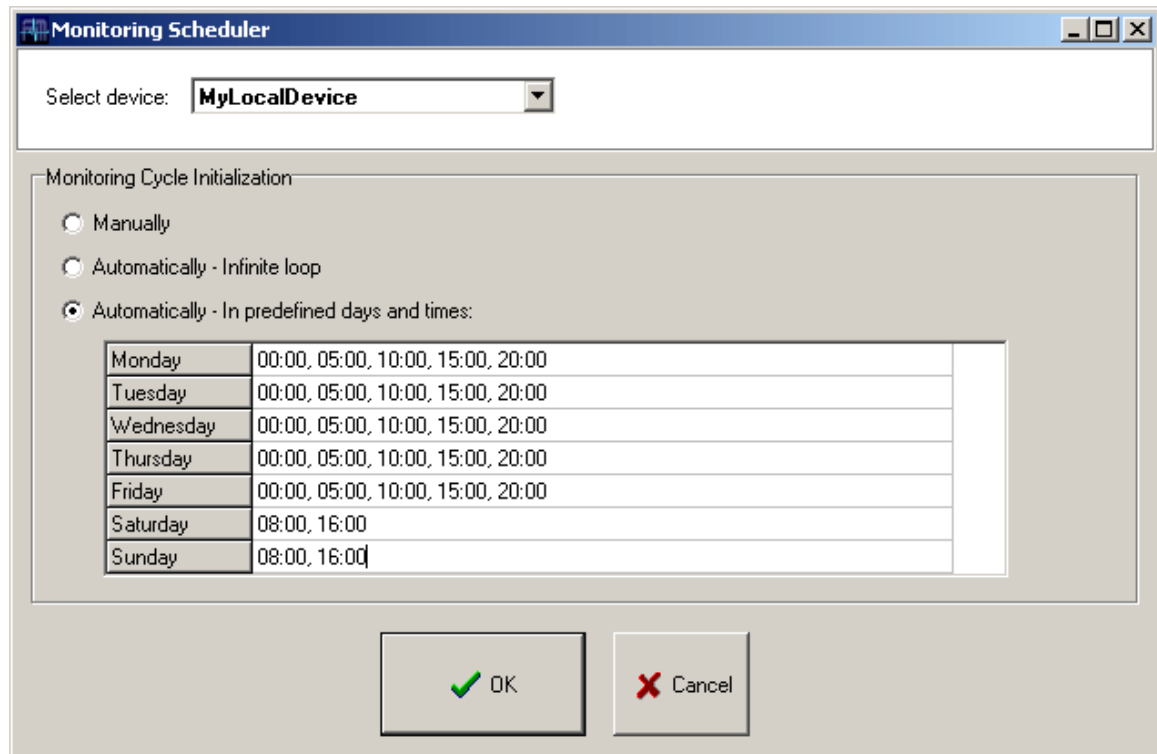
Each station can be tuned immediately on appropriate device using the Play button .

For automated monitoring the Monitoring Scheduler must be configured.

8 Monitoring Scheduler


Finally specify how each device will use the station list.

In the main menu select Setup – Monitoring Scheduler ().




The application provides these three options:

- Manual control – the user selects the stations from the list in the tool bar.
- Automatic monitoring in infinite loop – the application goes cyclically through the stations in the Station List. Start time is not guaranteed as it may occur anytime the option is selected or the application starts.
This option also allows for continuous monitoring of one station if that station is the only one defined in Station list for the device.
- Automatic in predefined times – the application starts monitoring the stations in the Station List at the times specified for each day in week. At the end of the list the device becomes idle until next scheduling event occurs.

User may pause the device using the button  so the device will continue monitoring actual station but it will not countdown jumping to another station from the list unless the user releases the Pause button.

9 Preferences

In the main menu select Setup – Preferences ().

9.1 General

Connection Timeout	Interval between two connection attempts to the device if last connection attempt fails.
Connection attempts	Total connection attempts before the application indicates connection problem via email.
Bytes sent without response	Total bytes sent to the device without any response before the application indicates connection problem via email.
RDS Spy options	The device selected can output its RDS data to the RDS Spy decoder via TCP/IP. Thus the RDS Spy may run either on local or remote PC. Visit http://rdsspy.com for more details.
Maintenance	Allows for automated deleting of all log files that are older than the number of days specified. The checking is performed at midnight and on each application exit.

9.2 Email

Enable Email Function	Turn on this option after all parameters are set correctly.
From address	This email address will appear in the email client in 'From' field. Usually it must be the same address which the smtp email account belongs to.
Subject	This text will appear in the 'Subject' field.
Signature	This text will appear at the bottom of all emails sent.
SMTP server	The smtp server used for sending emails. Optionally can be followed by port number if necessary, for example smtp.yourmail.com:587 Note for Gmail users: Google no longer supports 3rd party applications such as the FM Guard.
Requires authentication	Ask your email provider for details. Usually this option must be enabled.
Secure (TLS)	Ask your email provider for details.
Username, Password	Login details of the email account.
Email Test	Simple test feature.
Send daily reports	Sends a message each day with recent activity to all email addresses filled in the Device List.

9.3 Alarms

Minimum delay	If some station triggers the same alarm repeatedly, this option prevents sending a lot of emails.
Ignore values	Use this option to exclude values that have no sense due to bad signal quality.

9.4 Logs

Log RDS	Saves all incoming RDS data to a spy file. That file can be played and analyzed using the RDS Spy software.
Log Measurement	Saves the values measured to a csv file. That file can be opened in any spreadsheet application like MS Excel.
Log Histogram Data	Saves the deviation histogram data to a csv file. That file can be opened in any spreadsheet application like MS Excel.
Save Histogram Bitmap	Saves the deviation histogram data as a bitmap file.
Save Graph Bitmaps	Saves selected graphs as bitmap files.

10 ANNEXES

10.1 Executing user batch file on each station tune (OPTIONAL)

In some cases it would be useful to execute an external application on each station tune event. This can be done by creating a file **station.bat** in the application installation directory (where the application exe file is placed).

Two parameters are passed to the batch file: station name and device name. The names cannot contain spaces. Follow the *Windows Batch Script* documentation for details.

Example:

```
C:\Program Files (x86)\FM Guard\station.bat
```

```
echo Station name: %1, Device name: %2  
pause
```