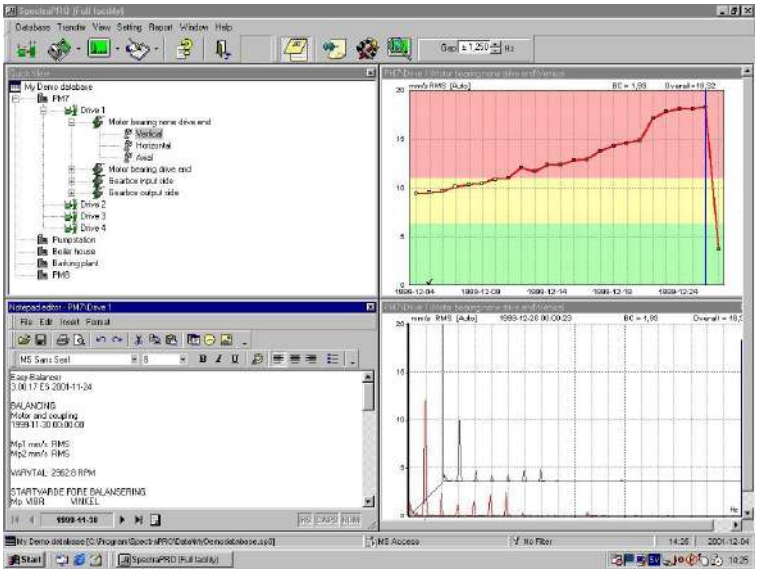
SpectraPro

SMART PRODUCTS FOR SMART PEOPLE

SpectraPro is an anaysis program for VIBER X5™
X-Viber, Easy-Viber and Easy-Balancer.



SpectraPro

With:

Easy Database design with templates and machine pictures

- Alarm indicators in the database tree

Calculation of machine fault frequencies including a bearing database

Several shaft speed tools at evaluation with

- Speed set in database
- Calculated speed
- Measured speed
- Selected speed

Transfer analysis based on alarm settings and fault frequencies

Note pad for:

- Machine description
- Evaluation results and maintenance actions

Spectrum view options with:

- Quick view
- Spectra from the whole machine
- Selected spectra
- Trend of total and bearing condition levels

Spectrum analysis with:

- Harmonic and side band cursors
- Calculated fault frequencies
- Reference spectra
- On line list with the highest levels

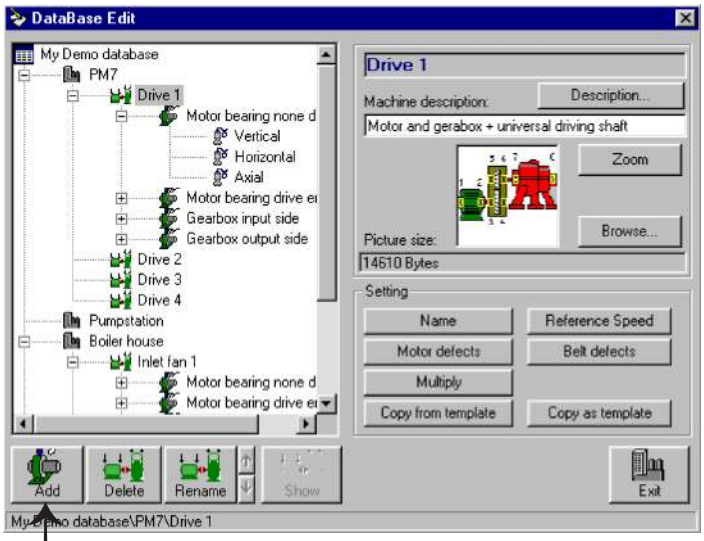
Automatic report generators for:

- Job reports
- Machine history reports
- Machine description and machine properties
- Transfer reports
- Spectrum reports with automatic comparison with fault frequencies
- Trend reports

Narrow band analysis

- Analysis of the latest measurements
- Comparison with a reference measurement
- Possibility to create up to 32 bands for every measuring direction from calculated, defined or measured frequencies
- Automatic alarm setting from the reference measurement

Creating a database structure



You can correct pictures of almost all formats to the database and also zoom the picture.

Settings for calculation of fault frequencies such as:

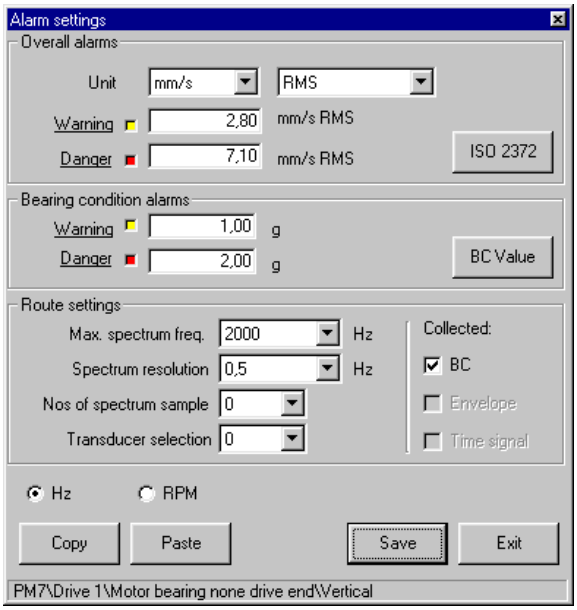
- Rotor bars
- Power nets
- Bearings
- Gearboxes
- Belt drives
- Multiples (fan blades)

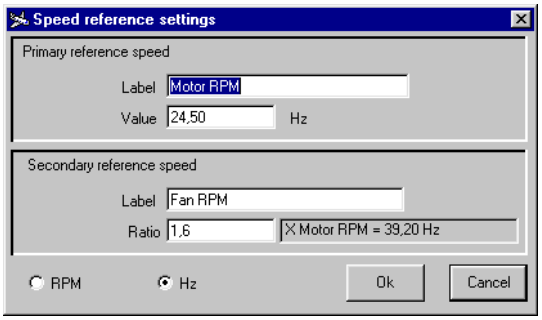
Harmonic and side-band frequencies are automatically calculated.

The **Add**-button is adding

- Departments
- Machines
- Measuring points
- Directions to the database

Setting of alarm limits. These levels are used for sorting machines in the transfer report and are also used at the trend display.



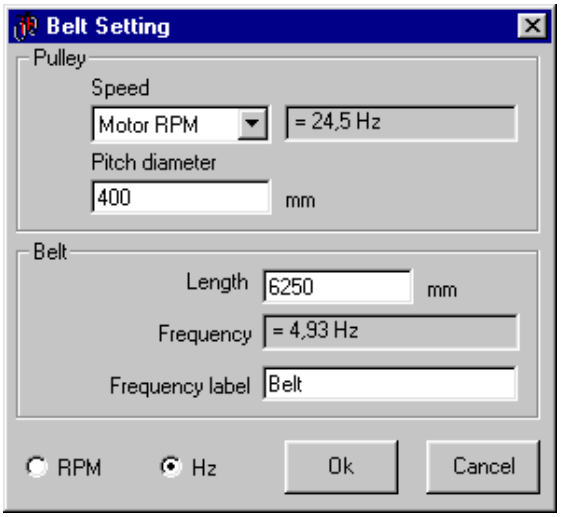


The primary reference shaft speed is the basis for all fault frequency analysis. When this speed is changed all fault frequencies and the analysis are recalculated.

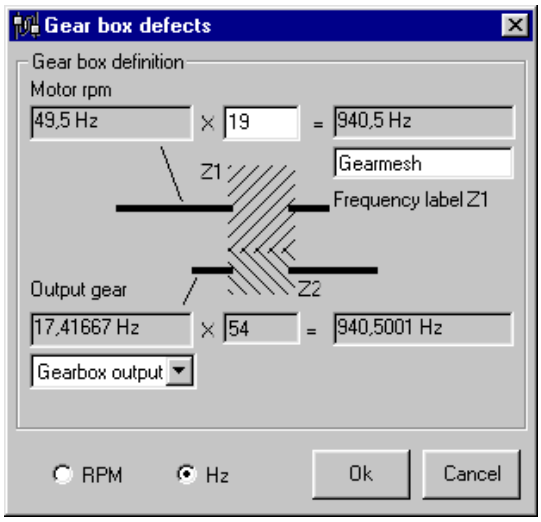
Frequency and resolution settings used at **Route measurements.**

Note! Works only together with the Easy-Viber instrument.

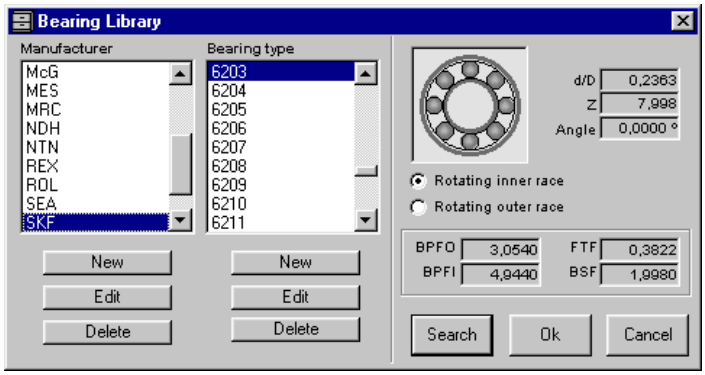
Calculation of mechanical fault frequencies



Enter the diameter of the pulley and the length of the belt and the fault frequency is calculated



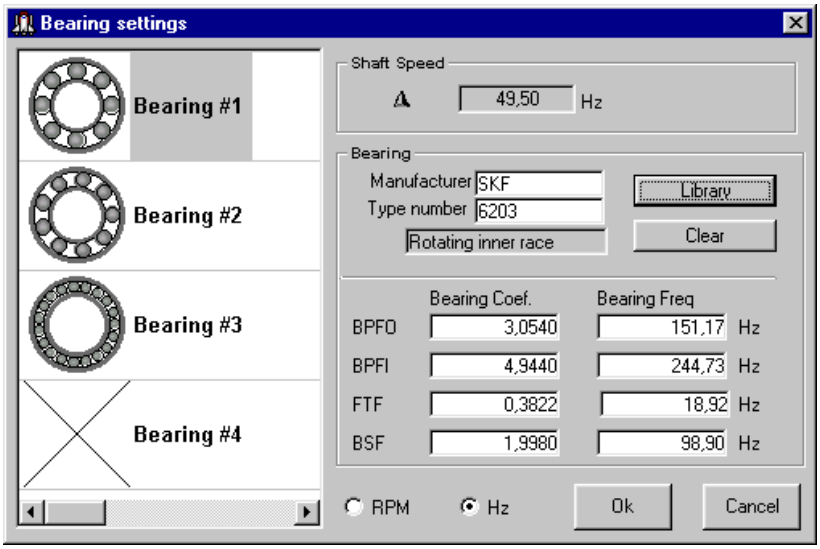
Enter the number of teeth and select the output shaft and the gear mesh frequency is calculated



Bearing manufacturer and Bearing type

Calculation of mechanical fault frequencies

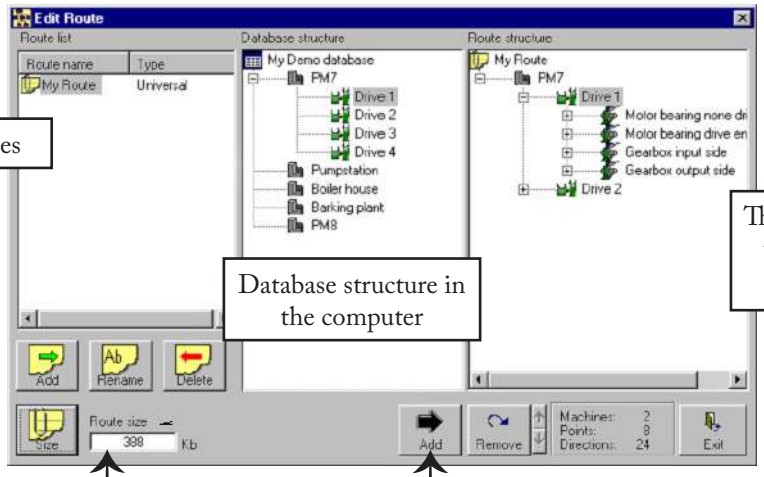
You can connect 4 different bearings to the same measuring point



Calculated bearing fault frequencies.

Harmonics and sideband frequencies are automatically calculated at spectrum analysis.

Creating a Route



Avaliable Routes

Database structure in the computer

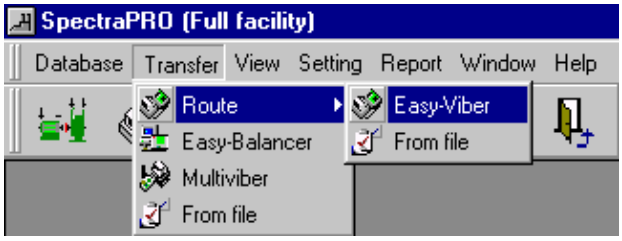
The Route structure that will be transferred to Easy-Viber

Route size in Easy-Viber

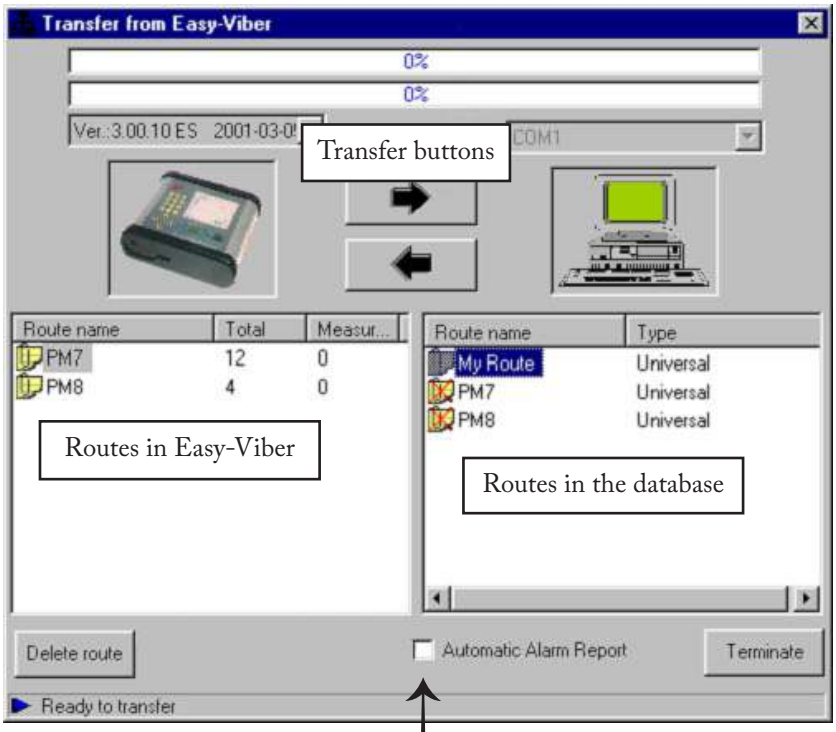
Add: Copy object from database to route

Instrument communication Route transfer Only with Easy-Viber

Select the instrument Easy-Viber



This window is used for two way communication



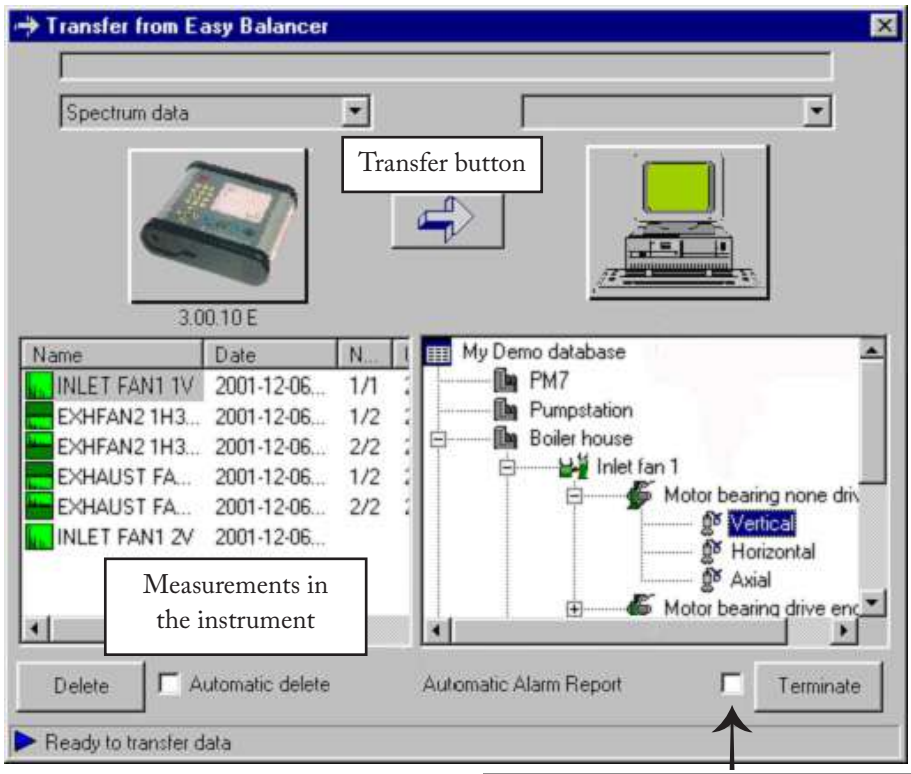
A mark here will generate a transfer report

Transfer of a single spectrum and other information from Easy-Viber and Easy-Balancer to the SpectraPro program

You can select the type of data to be transferred:

- Spectrum
- Coast-Down
- Balancing

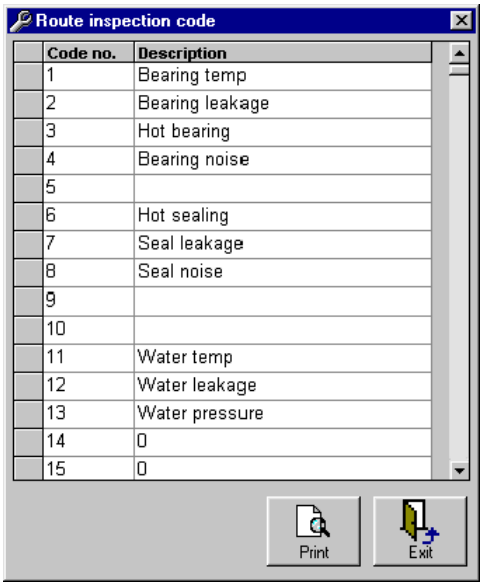
Click the data that should be transferred



Database structure in the computer

Click the target, where the data will be stored and press the transfer button

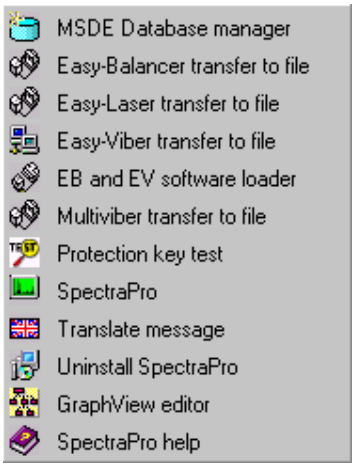
A mark here will generate a transfer report



With the route inspection code you can transfer both text messages and pre-made messages from the instrument to the computer

Transfer of a single spectrum and other information from Easy-Viber and Easy-Balancer to the SpectraPro program

In the SpectraPro menu there are three different program parts for loading data to a file for later transfer to the database or for emailing



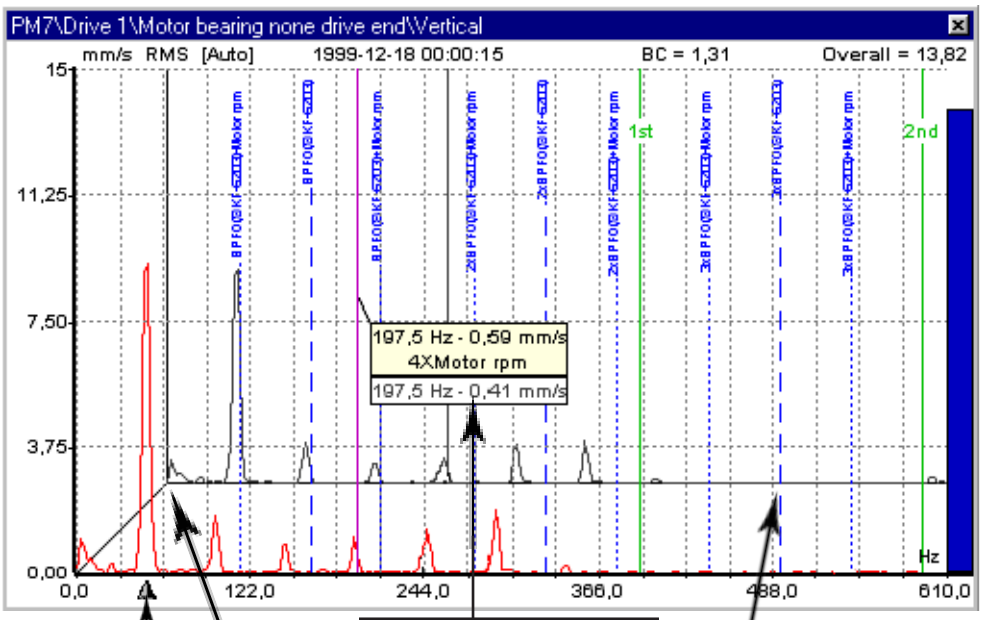
Transferring measurements from VM110 to SpectraPro

From the VM110 the measurements can be transferred in three different ways.

- Scheduled
- On alarm, up to ten stored measurements can be included
- Manually

The transfer works on-line via the SpectraLive software

Analysing a spectrum with SpectraPro



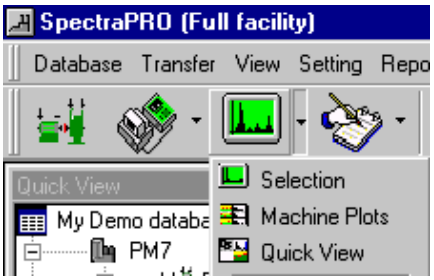
Reference speed marker

Reference spectra

Presentation of the defect frequency when the main cursor coinsides

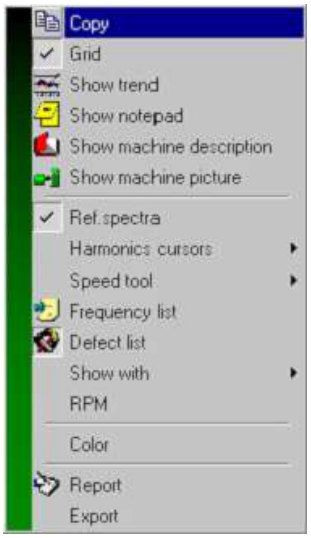
Defect frequencies

Analysing a spectrum with SpectraPro



You can cause view the spectra in many ways:

- Selected spectra from the whole database
- All spectra from a whole machine
- Database tree, trend, spectra and notebook

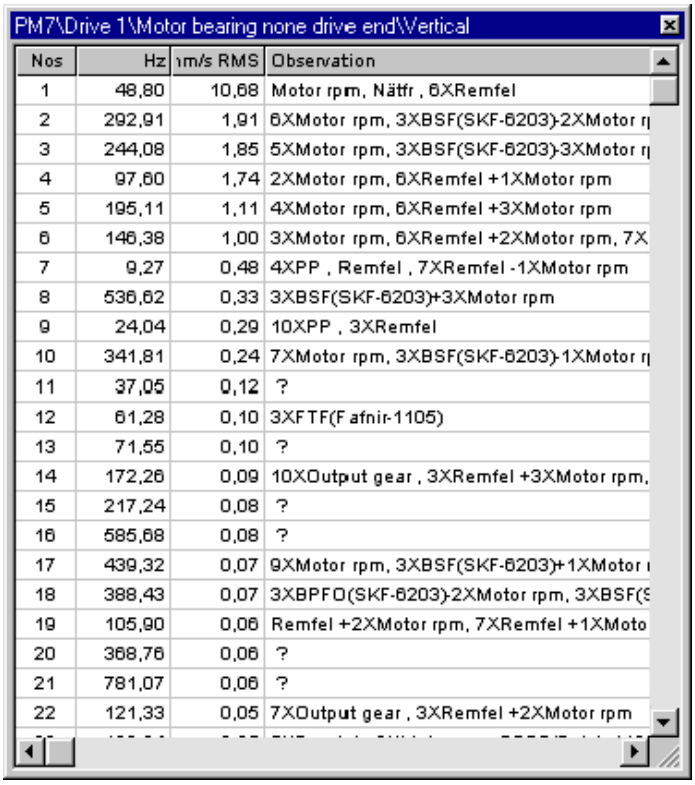


Click on the right mouse button and you will activate the spectra tools window

Quick analysis

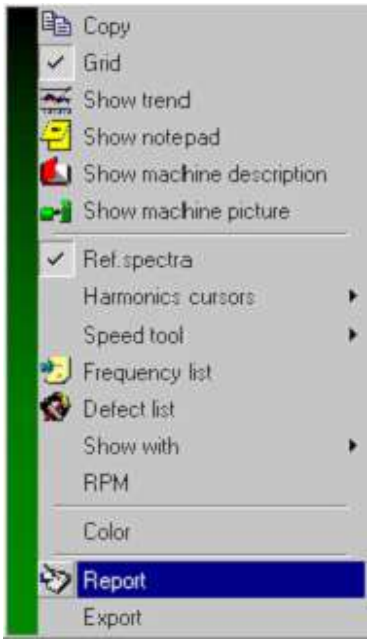
Instead of analysing each frequency in the spectra you can use the window with the 30 highest peaks with automatic:

- Sorting with the highest levels first
- Estimation of correct peak level and frequency
- Comparison between the spectra frequencies and the calculated fault frequencies
- The fault frequency labels will be presented for all frequencies the coincide



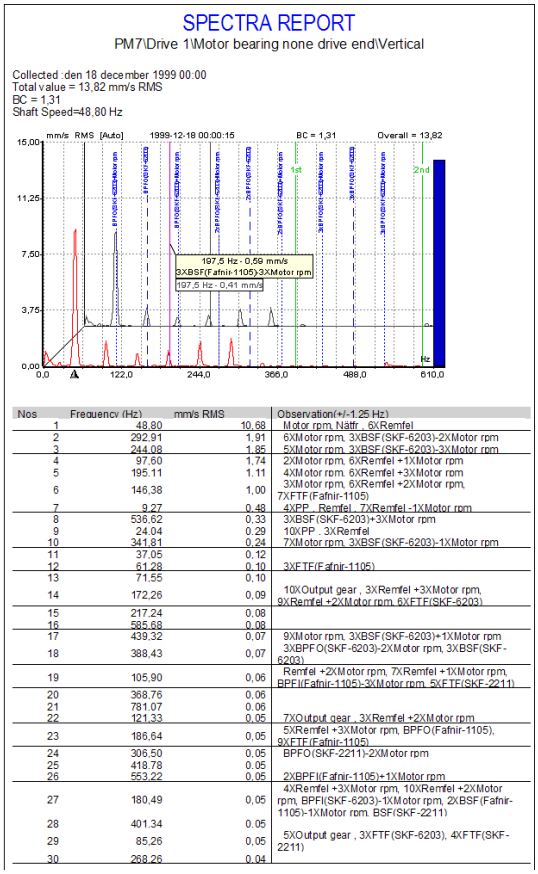
Nos	Hz	m/s RMS	Observation
1	48,80	10,68	Motor rpm, Nätfr , 6XRemfel
2	292,91	1,91	6XMotor rpm, 3XBSF(SKF-6203)-2XMotor r
3	244,08	1,85	5XMotor rpm, 3XBSF(SKF-6203)-3XMotor r
4	97,60	1,74	2XMotor rpm, 6XRemfel +1XMotor rpm
5	195,11	1,11	4XMotor rpm, 6XRemfel +3XMotor rpm
6	146,38	1,00	3XMotor rpm, 6XRemfel +2XMotor rpm, 7X
7	9,27	0,48	4XPP , Remfel , 7XRemfel -1XMotor rpm
8	536,62	0,33	3XBSF(SKF-6203)+3XMotor rpm
9	24,04	0,29	10XPP , 3XRemfel
10	341,81	0,24	7XMotor rpm, 3XBSF(SKF-6203)-1XMotor r
11	37,05	0,12	?
12	61,28	0,10	3XFTF(Fafnir-1105)
13	71,55	0,10	?
14	172,26	0,09	10XOutput gear , 3XRemfel +3XMotor rpm,
15	217,24	0,08	?
16	585,68	0,08	?
17	439,32	0,07	9XMotor rpm, 3XBSF(SKF-6203)+1XMotor r
18	388,43	0,07	3XBPFO(SKF-6203)-2XMotor rpm, 3XBSF(S
19	105,90	0,06	Remfel +2XMotor rpm, 7XRemfel +1XMoto
20	368,76	0,06	?
21	781,07	0,06	?
22	121,33	0,05	7XOutput gear , 3XRemfel +2XMotor rpm

Automatic report generators



Click the right mouse button and then on Report

With the spectra window active the report generator will automatically create this report with the selected Spectra and the Quick analysis in the same report



SPECTRA REPORT

PM7\Drive 1\Motor bearing none drive end\Vertical

Collected :den 18 december 1999 00:00
Total value = 13,82 mm/s RMS
BC = 1,31
Shaft Speed=48,80 Hz

Nos	Frequency (Hz)	mm/s RMS	Observation(+/-1.25 Hz)
1	48,80	10,68	Motor rpm, Natfr , 6XRemfel
2	292,91	1,91	6XMotor rpm, 3XBSF(SKF-6203)-2XMotor rpm
3	244,08	1,85	5XMotor rpm, 3XBSF(SKF-6203)-3XMotor rpm
4	97,60	1,74	2XMotor rpm, 6XRemfel +1XMotor rpm
5	195,11	1,11	4XMotor rpm, 6XRemfel +3XMotor rpm
6	146,38	1,00	3XMotor rpm, 6XRemfel +2XMotor rpm, 7XFTF(Fafnir-1105)
7	9,27	0,48	4XPP , Remfel , 7XRemfel -1XMotor rpm
8	536,62	0,33	3XBSF(SKF-6203)+3XMotor rpm
9	24,04	0,29	10XPP , 3XRemfel
10	341,81	0,24	7XMotor rpm, 3XBSF(SKF-6203)-1XMotor rpm
11	37,05	0,12	
12	61,28	0,10	3XFTF(Fafnir-1105)
13	71,55	0,10	
14	172,26	0,09	10XOutput gear , 3XRemfel +3XMotor rpm, 9XRemfel +2XMotor rpm, 6XFTF(SKF-6203)
15	217,24	0,08	
16	585,68	0,08	
17	439,32	0,07	9XMotor rpm, 3XBSF(SKF-6203)+1XMotor rpm
18	388,43	0,07	3XBPFO(SKF-6203)-2XMotor rpm, 3XBSF(SKF-6203)
19	105,90	0,06	Remfel +2XMotor rpm, 7XRemfel +1XMotor rpm, BPFI(Fafnir-1105)-3XMotor rpm, 5XFTF(SKF-2211)
20	368,76	0,06	
21	781,07	0,06	
22	121,33	0,05	7XOutput gear , 3XRemfel +2XMotor rpm
23	186,64	0,05	5XRemfel +3XMotor rpm, BPFO(Fafnir-1105), 9XFTF(Fafnir-1105)
24	306,50	0,05	BPFO(SKF-2211)-2XMotor rpm
25	418,79	0,05	
26	553,22	0,05	2XBPFI(Fafnir-1105)+1XMotor rpm
27	180,49	0,05	4XRemfel +3XMotor rpm, 10XRemfel +2XMotor rpm, BPFI(SKF-6203)-1XMotor rpm, 2XBSF(Fafnir-1105)-1XMotor rpm, BSF(SKF-2211)
28	401,34	0,05	
29	85,26	0,05	5XOutput gear , 3XFTF(SKF-6203), 4XFTF(SKF-2211)
30	268,26	0,04	

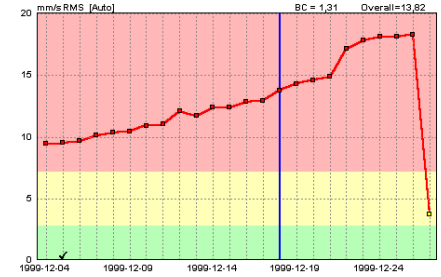
A click on the Word icon will automatically open the Windows Word program and paste this as a word document that can be edited as a normal word document

With the design Editor the user can change the design of all the report documents and also add their own logo

Trend report

PM7\Drive 1\Motor bearing none drive end\Vertical

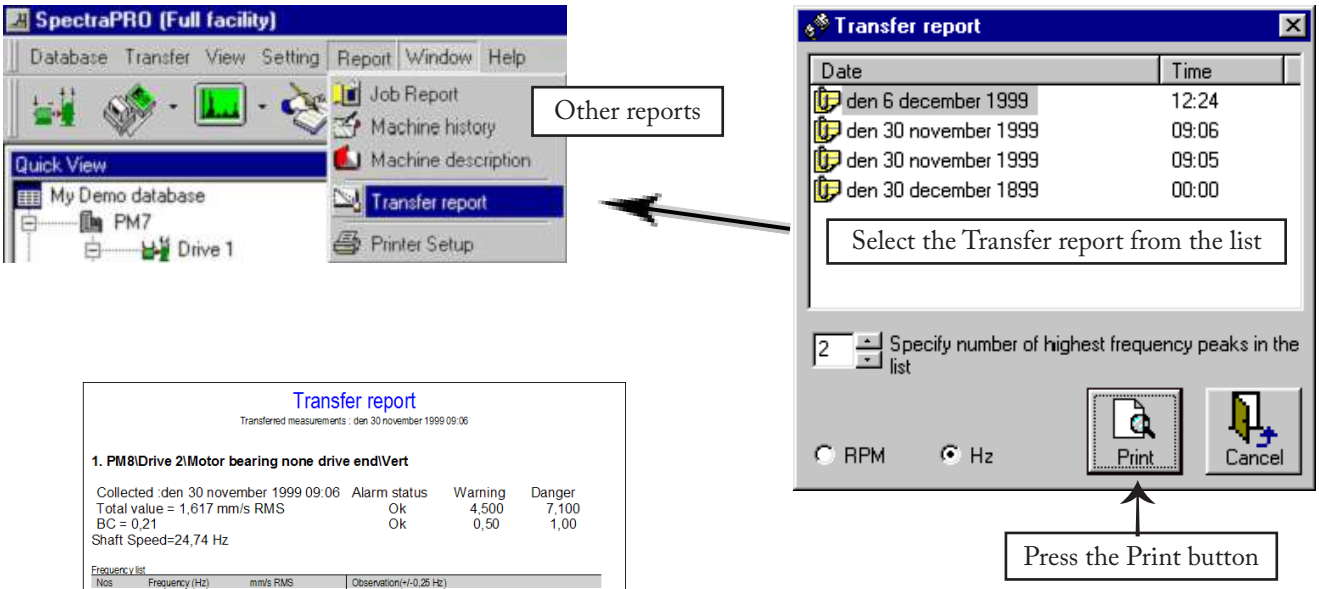
Shaft Speed=49,50 Hz

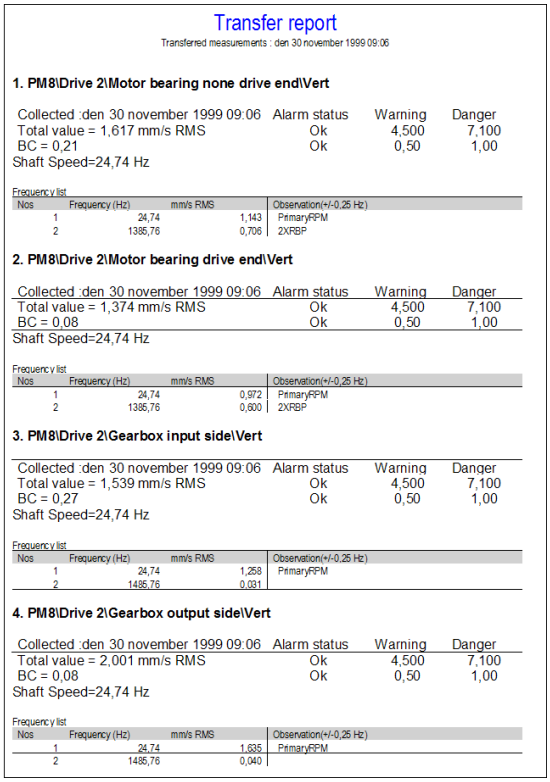


Nos	Measuring date	mm/s RMS	Alarm status	BC	Alarm status
1	04/12 1999 12:00	9,46	Danger	0,10	Ok
2	05/12 1999 12:00	9,56	Danger	0,23	Ok
3	06/12 1999 12:00	9,71	Danger	0,28	Ok
4	07/12 1999 12:00	10,15	Danger	0,37	Ok
5	08/12 1999 12:00	10,39	Danger	0,46	Ok
6	09/12 1999 12:00	10,50	Danger	0,50	Ok
7	10/12 1999 12:00	10,95	Danger	0,66	Ok
8	11/12 1999 12:00	11,08	Danger	0,70	Ok
9	12/12 1999 12:00	12,13	Danger	0,81	Ok
10	13/12 1999 12:00	11,76	Danger	0,88	Ok
11	14/12 1999 12:00	12,43	Danger	0,98	Ok
12	15/12 1999 12:00	12,43	Danger	1,05	Warning
13	16/12 1999 12:00	12,86	Danger	1,10	Warning
14	17/12 1999 12:00	12,97	Danger	1,20	Warning
15	18/12 1999 12:00	13,82	Danger	1,31	Warning
16	19/12 1999 12:00	14,33	Danger	1,34	Warning
17	20/12 1999 12:00	14,62	Danger	1,48	Warning
18	21/12 1999 12:00	14,89	Danger	1,52	Warning
19	22/12 1999 12:00	17,14	Danger	1,61	Warning
20	23/12 1999 12:00	17,81	Danger	1,69	Warning
21	24/12 1999 12:00	18,14	Danger	1,81	Warning
22	25/12 1999 12:00	18,14	Danger	1,89	Warning
23	26/12 1999 12:00	18,32	Danger	1,93	Warning
24	27/12 1999 12:00	3,79	Warning	0,20	Ok

With the trend window active the report generator will automatically create this report with the selected Trend diagram and a list of all the measurements in the same report

Automatic report generators





Transfer report

Transfered measurements : den 30 november 1999 09:06

1. PM8\Drive 2\Motor bearing none drive end\Vert

Collected :den 30 november 1999 09:06	Alarm status	Warning	Danger
Total value = 1,617 mm/s RMS	Ok	4,500	7,100
BC = 0,21	Ok	0,50	1,00
Shaft Speed=24,74 Hz			

Frequency list

Nos	Frequency (Hz)	mm/s RMS	Observation(+/-0,25 Hz)
1	24,74	1,143	PrimaryRPM
2	1385,76	0,706	2XRBP

2. PM8\Drive 2\Motor bearing drive end\Vert

Collected :den 30 november 1999 09:06	Alarm status	Warning	Danger
Total value = 1,374 mm/s RMS	Ok	4,500	7,100
BC = 0,08	Ok	0,50	1,00
Shaft Speed=24,74 Hz			

Frequency list

Nos	Frequency (Hz)	mm/s RMS	Observation(+/-0,25 Hz)
1	24,74	0,972	PrimaryRPM
2	1385,76	0,600	2XRBP

3. PM8\Drive 2\Gearbox input side\Vert

Collected :den 30 november 1999 09:06	Alarm status	Warning	Danger
Total value = 1,539 mm/s RMS	Ok	4,500	7,100
BC = 0,27	Ok	0,50	1,00
Shaft Speed=24,74 Hz			

Frequency list

Nos	Frequency (Hz)	mm/s RMS	Observation(+/-0,25 Hz)
1	24,74	1,258	PrimaryRPM
2	1485,76	0,031	

4. PM8\Drive 2\Gearbox output side\Vert

Collected :den 30 november 1999 09:06	Alarm status	Warning	Danger
Total value = 2,001 mm/s RMS	Ok	4,500	7,100
BC = 0,08	Ok	0,50	1,00
Shaft Speed=24,74 Hz			

Frequency list

Nos	Frequency (Hz)	mm/s RMS	Observation(+/-0,25 Hz)
1	24,74	1,635	PrimaryRPM
2	1485,76	0,040	

The Transfer report gives a quick overview of all the transferred spectra. A Transfer report contains information about:

- Date and time of the measurement
- Total vibration level compared with alarm limits
- Bearing condition level with a comparison with alarm limits
- Quick analysis

Of course there are more reports than we can mention here

SpectraPro works with the following operating systems: Windows 95, 98, NT4.0, 2000, XP, and Vista. This is a 32 bit application.

Hardware requirements:

CPU: Pentium 200 MHz or faster

Hard disk: 500Mb or more

Memory: 32Mb or more

Display: 1024x768, 256 colours or more

Printer: Windows compatible

Serial port for instrument communication

Vibration Measurement Instruments

VMI International AB

Sweden

www.vmiab.com