Analysis and Reporting Manager

Support application for the SKF Microlog Analyzer AX and GX series

SKF's Analysis and Reporting manager is a PC based application for transferring, displaying and analyzing data generated by the application modules of the SKF Microlog AX and GX series instruments.

With Analysis and Reporting Manager, data may be exported to ASCII or Excel files for easy viewing using Microsoft Excel or other third party software. Analysis and Reporting Manager provides an easy mechanism for uploading data from your instrument via USB, once uploaded, the data is automatically shown in the application main window, and a single mouse click is all that is needed to view the data in a powerful, interactive graphical plot. Analysis and Reporting Manager also provides a range of post-processing features that allow users to get the most out of the application module data.

Analysis and Reporting Manager support is provided to the following modules:

- Balancing
- Data Recorder
- Frequency Response Function (FRF)
- Run up Coast down (RuCd)
- Spindle Test
- FFT Analyzer
- Conformance Check

Data collected for these modules can be imported into the SKF's Analysis and Reporting Manager, stored alongside the asset and then linked to SKF @ptitude Analyst, allowing users to provide additional information about the data.

Note: "Asset" has no meaning in the stand-alone version. For the add-on version, it means you can associate some Analaysis Reporting Manager data with a node in the SKF @ptitude Analyst hierarchy.

Key features

- Digital Signal Processing (DSP) window – enables post processing of time waveform data using Fast Fourier Transform (FFT) routines into Spectrum or Waterfall plots
- File download management – specify file locations on your PC or network; data is sorted by date / time and module type when it is uploaded
- Import of Conformance Check module results, including the report table with the machine graphic, as well as the spectral results files
- Conformance Check results can be combined to generate trend plots
- Import of Run up Coast down (RuCd) module data files, including the original .wav recording and the CSV results files
- Export of data to UFF (type 58) files allowing easy import into structural analysis packages
- Batch exporting of data into Microsoft Excel, allowing consolidation of multiple measurements into a single workbook with multiple tabs, or separate workbooks
- Creation of Microsoft Word documents from data, including support of templates via bookmarks. Graph plots as well as numerical values may be included, and Conformance Check results tables may be created.
- Custom balance reports created in Microsoft Word
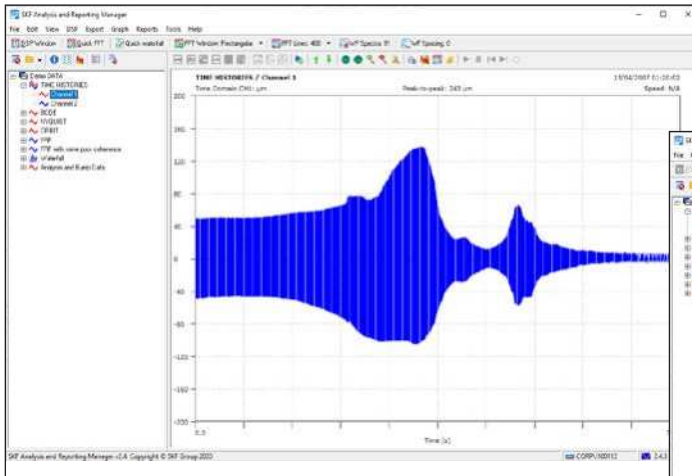
Analysis and Reporting Manager time domain plot – run down recording (left), transfer function – Frequency Response Function (FRF) plot (below).
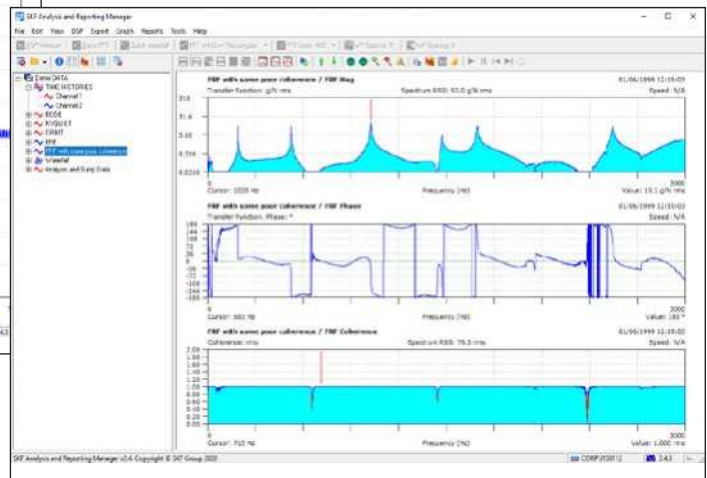
Powerful interactive graph plots:

- Single and multiple time waveform or spectrum
- Waterfall
- Overlay
- Orbit and polar plots (with a moving zoom function allowing easy traversal of orbit/polar data)
- Bode and Nyquist
- Spectrogram
- Balance run polar plots

Easy to use graphical display:

- Zooming and magnification
- Dynamic cursor types (harmonic, power, peak-in-band, side band, etc.)
- Integration, control of engineering units and vertical scale
- Unlimited annotations and notes, allowing you to record and highlight information about your data

Enhanced functionality

Analysis and Reporting Manager has new functionality for the stand-alone product as well as the embedded version that will now be included with both the popular CMSW 7400 and now the CMSW 7300 software products. Analysis and Reporting Manager functionality allows users to upload, view and post-process field collected data from modules in our SKF Microlog Analyzers.
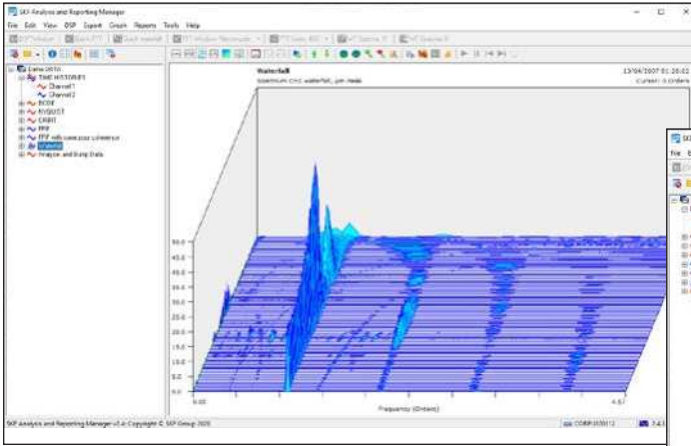
SKF's Analysis and Reporting Manager application now has the ability to calculate enveloped (gE) overall limits and store calculations with the collected data. SKF's acceleration enveloping (gE) feature contains a set of calculated warning and alarm levels. These warning limits depend on a specific bearing bore, speed and the Fmax selected for your enveloped spectrum. To assist in setting the correct alarm and warning levels, there is now an SKF bearing database lookup feature that is built right into the Analysis and Reporting Manager software.

The Digital Signal Processing Module (DSP) provides several post-processing features including acceleration enveloping (gE) analysis. This menu has many advanced features including waterfall, and Fast Fourier Transforms (FFT) along with other advanced features. It supports the recording of raw data from a series of sensors to allow users to collect data from a machine running for a short duration. This can be very helpful where route collection would not normally collect enough data; either fast enough, or where collection of data over an extended period of time is not practical. The raw signals can then be post processed, using Analysis and Reporting Manager software to produce all of the spectra required for analysis.

With the latest version of Analysis and Reporting Manager, the post processing options allow you to perform SKF acceleration enveloping (gE) and display the results right in the analyzer window. Once the data is captured, it can then be overlaid with bearing fault frequencies onto the post processed spectra to calculate warning and alert levels.

In addition to the impressive list of post processing options available in the Analysis and Reporting Manager, SKF has also added Cepstrum, Power Cepstrum, and Power Spectrum to the list of available features. Cepstrum analysis is a tool for detecting periodicity in an FFT which is especially useful when diagnosing potential gear box failures. Power spectrum provides a plot of the portion of a signal's power (energy per unit time) for any given frequency in the FFT where the energy is measured at the cursor position.

As part of our goal of delivering value to customers, ARM is now no longer licence key or dongle controlled and may be distributed freely.

SKF

Analysis and Reporting Manager order normalised waterfall plot (left) and bode plot (below)
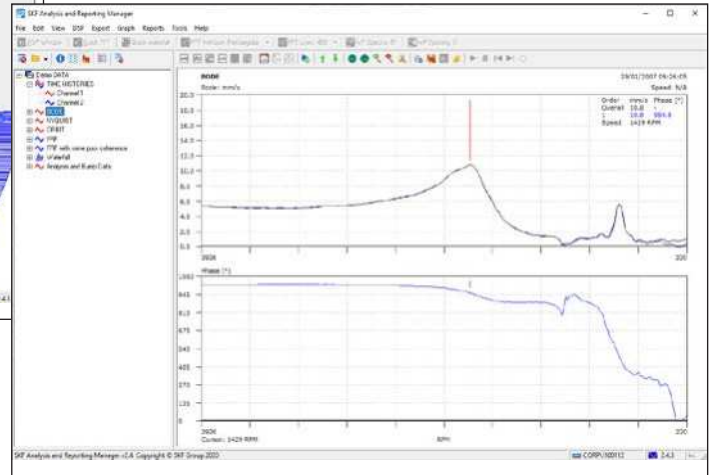
Customized reporting

The Analysis and Reporting Manager automatically imports data into your PC; it can then be browsed and manipulated using a familiar Explorer style tree display. Extensive context (pop up) menus and customizable toolbars allow simple manipulation and configuration of your data display including customizing the colors and fonts used in the plots and records can be moved around using the Windows clipboard and drag-and-drop feature. A large number of standard file formats are supported, including .wav, ASCII and UFF (Universal File Format).

Data management

The Analysis and Reporting Manager automatically stores data in data stream files which embed the original data and all user added settings such as cursors and ranges, as well as annotations and notes. Customizable text based reports can be generated from the data, and any record can be output as ASCII text or the graph plot copied to the clipboard as a bitmap file. All data can be saved to ASCII or UFF files or written directly into Microsoft Excel workbooks.

Technical specifications

Data transfer

Direct downloading of data from SKF Microlog Analyzer is done via Windows Mobile Device Center 6.1 (if using Windows 7), SKF Sync Driver (if using Windows 10) or any other supported connection type.

Inputs

The following types of data can be input into the Analysis and Reporting Manager:

- Analyzer, Non-route, Bump Test, Frequency Response Function (FRF) and Conformance Check results files (.csv and .ccr)
- Balancing module files (.txt)
- Recorder module files (.wav)
- Run up Coast down (RuCd) module files (.wav and .csv)
- Universal File Format type 58 (.uff)
- Native Analysis and Reporting Manager data stream files (.pds)
- Single or multiple column ASCII file format (.txt)
- Microsoft Excel workbooks (requires Excel 2000 and/or Word 2000 or later on host)

Outputs

Data may be output in general X-tab-Y column format ASCII files, UFF type 58 files, Microsoft Excel workbooks and Analysis and Reporting Manager data stream files. Data may be copied to the clipboard (as both ASCII and data stream formats).

Graphs may be copied to the clipboard as bitmaps.

Multiple records may be output as a single, multiple column ASCII file or Microsoft Excel worksheet.

Time waveform data may be used to produce single spectrum or waterfall plots using FFT analysis.

Processed data is automatically stored in Analysis and Reporting Manager data stream files.

Microsoft Word documents may be created directly from data, either via template files using bookmarks as placeholders, or to blank documents.

UFF options

Output to UFF files includes user specification of reference and response node information and supports the SKF convention on embedding this information in the analyzer record names. All records may be output to a single UFF file or individual files as required.

Hardware requirements

Configuration	Minimum requirements	Recommended requirements
Operating system	Windows 7, Windows 10	Windows 7, Windows 10
Processor	Intel Core 2 Duo, 2.0 GHz, or better	Intel i5, 2.0 GHz, or better
RAM	4 GB	8 GB or more
Disk space available for stand-alone computer	10 GB	50 GB
Video display	1280 × 1024	1280 × 1024 or larger

USB port for data transfer.

Ordering information

The Analysis and Reporting Manager is available in the following configurations:

- **CMSW 7311-SL** Analysis and Reporting Manager stand-alone PC based application
- **CMSW 7400** Analysis and Reporting Manager integrated into SKF @ptitude Analyst
- **CMSW 7300** Analysis and Reporting Manager integrated into SKF @ptitude Analyst for SKF Microlog Analyzer and SKF Multilog On-line System WMx

SKF Product Support Plan

SKF is committed to customer support excellence. The goal of a SKF Product Support Plan (PSP) is to help you increase and optimize your return on investment in SKF products. This includes extending the life of their product and facilitating the success of their program. This allows you to compete in your industry, save downtime and be on the cutting edge of technology.

SKF Product Support Plans give you full confidence that your equipment is maintained to the SKF quality standards. Condition monitoring products are an investment and there is no better way to protect your investment for years than with a SKF Product Support Plan.

Greater peace of mind
- Unlimited telephone technical support
- E-mail/web-based technical support
- Live chat technical support
- Software maintenance releases
- Software updates
- Remote Workstation access
- SKF Knowledge Centre subscription
- SKF Technical Support Self-Help Portal access
- Live webinar training notifications
- Web-based e-Learning courses

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