CRYSTAL
INSTRUMENTS

CoCo Software 2.2
CoCo Software Release Notes

CoCo-80, CoCo-70X, CoCo-80X, CoCo-90X
EDM CoCo-DSA (Dynamic Signal Analyzer)
EDM CoCo-VDC (Vibration Data Collector)

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NEW FEATURES
65536 (216) Hz Sampling Rate - Supports 1 Hz Frequency Resolution

Several applications including some legacy applications require a frequency resolution of 1 Hz for optimal data comparisons with historic data. This requires a sampling rate at a power of 2.

Crystal Instruments introduced a new sampling rate of 2n for all Spider and CoCo hardware to support multiples and fractions of 1 Hz frequency resolution.

With 1 Hz frequency resolution, the frequency domain signals will have integer frequencies on the X-axis enabling spectral analysis for integer frequencies.
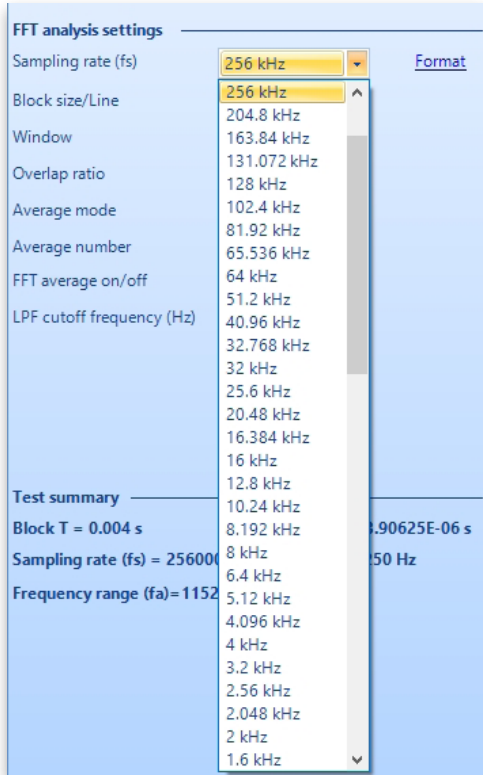

With the introduction of 65536 Hz (216) and its derivative sampling rates, frequency resolutions of 0.125 Hz, 0.5 Hz, 1 Hz, 2 Hz, 4 Hz, etc. are supported to allow spectral analysis at integer frequencies.

Together with three other sampling banks of 102.4 kHz, 81.92 kHz and 64 kHz, Crystal Instruments products now support at least 72 different and unique sampling rates.

CoCo Hammer Impact Testing in EDM Modal

The rugged and portable CoCo hardware allows convenient measurement recording in the field. The handheld system features a compact display and accurately records and analyzes data. The powerful CoCo system integrates with EDM Modal software to provide a seamless modal analysis procedure. Users can transfer the testing plan and 3D model geometry created in EDM Modal to CoCo hardware for acquiring modal measurements. After a test is executed, users can transfer data back to EDM Modal for post-processing and modal parameter extraction.
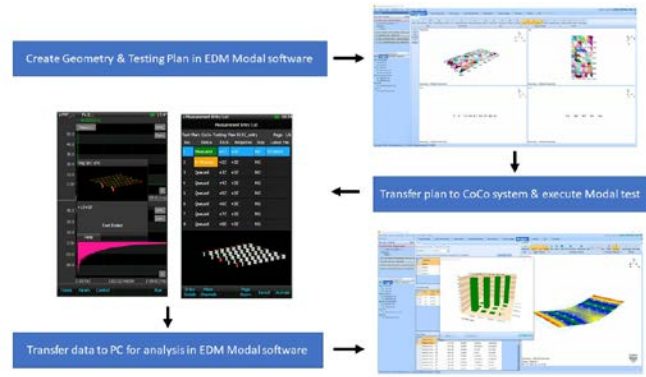
General CoCo Features

VDS "Administrator" and "Local Administrator" profiles can access Account Management features on the CoCo.

The CoCo VDS "Administrator" and "Local Administrator" profiles now provide access to the Account Management function on a CoCo unit.

Restore CoCo without computer
Users can now restore a CoCo-70X or CoCo-80X unit using an SD card. A connection to a computer running EDM or VDS is not required.

Skip Page buttons
The next and previous buttons (and) now provide a 'skip page' function. This added function provides a quicker way to navigate lists. Available for the Factory Route View and File List.
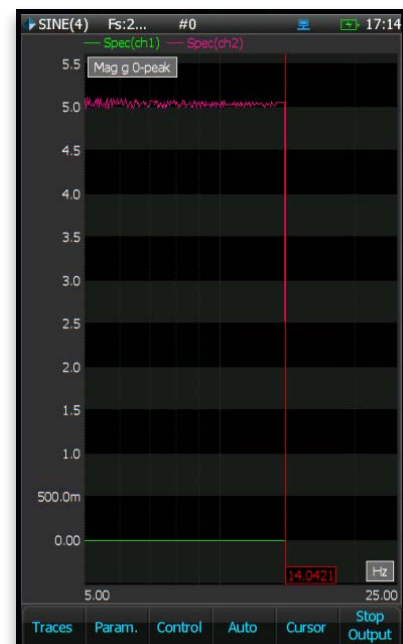
Delete Most Recent Measurement (Route Mode)
This new function is designated to the F3 button under the File List menu and allows users to delete the most recent measurements under a selected point. Available for CoCo-70X, CoCo-80X, and CoCo-90X.

CoCo-70X New Features
Swept Sine Analysis
Swept Sine measurements are added to the CoCo-70X.

CoCo-80X and CoCo-90X New Features
GPS Data Acquisition added to all APS CSAs
All APS CSAs now support GPS data acquisition*. It is now possible to capture 8-channel FFT data while simultaneously recording GPS data. This feature can be enabled in the Timestream Recording Setup. Available for CoCo-80X and CoCo-90X.
* only applicable to units containing a GPS chip

Waterfall and Colormap Batch Review in CoCo Software
The new 'Waterfall Batch Review' feature provides a full review of waterfall traces. Hard-key functions allow users to toggle between traces. The 'Colormap Batch Review' feature provides a full colormap trace review with hard-key toggle capabilities as well. X and Y axis scaling is easily adjusted using the 'Set Exact Axis Range' parameter. Auto/F4 provides easy access to the axis range settings during live tests.

Step Sine
Step Sine testing is added to CoCo-70X, CoCo-80X, and CoCo-90X.

IEPE Tachometer
New CoCo hardware now features an IEPE-powered tachometer channel. Requires the following hardware versions:
- CoCo-70X: 71.6.X
- CoCo-80X: 81.6.X
- CoCo-90X: 91.6.1

EDM CoCo DSA New Features
Export to Single File
Export multiple signals to one file. Supports formats including TXT, CSV, UFF, UNV, and MATLAB.
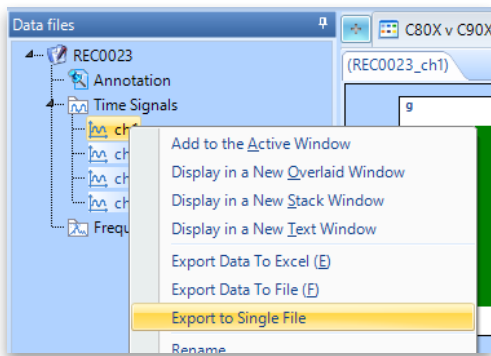
MAJOR IMPROVEMENTS
General Improvements
Route List collapses to point level when returning to screen
The CoCo-70X and CoCo-80X Route screen now collapses to the point level by default. If a user returns to the Route screen after exiting, it will automatically collapse the points.

File Review screen automatically moves to selected machine

The File Review screen automatically moves to the previously selected machine from the Route screen when a user presses the Folder button.

Data Review improvement – repurposed >>| and |<< buttons
The >>| and |<< buttons are repurposed to move from the next or previous measurement entry when reviewing Route Data.

This feature allows users to easily review data across multiple measurement entries with fewer button clicks.

Data Review header in File Review screen
A header is added to the File Review screen containing the machine name, point name, date, and time.

X- and Y-axis settings present between measurement entries during Route Mode

The x- and y-axis settings are present between measurement entries while in Route Mode.

Download CoCo BIN files on Support Site
A download button is added for BIN files on the Support Site (https://customer.go-ci.com/Support/web/login.aspx).
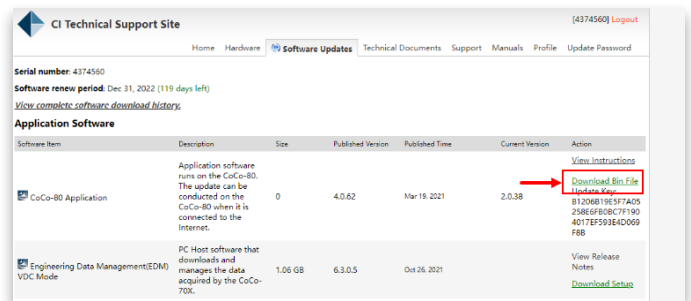
Data Review, add Triaxial View
Triaxial Signal Displays are added to the File Review screen. This includes the following types of signal displays:

- 3-Channel Waveform
- 3-Channel Spectrum

- 3-Channel Readings + Waveform
- 3-Channel Readings + Spectrum

Assign Tachometer to Input Channel
Users can assign input channels to the tachometer. This means ICP-based tachometers are now compatible with the CoCo-70X, CoCo-80X, and CoCo-90X. Newly added CSAs are configured to use ch1 as the tachometer. Look for CSAs with "_Ch1Tacho" appended to the CSA name.

Updates to Route Measurement Notes
- List is no longer auto-populated with "Temperature", "Pressure", and "kW Load".
- A "Delete" button is added to the menu
- The selection cursor remains to allow editing after deleting a note.

Updates for the Note Codes:
- UI Simplification - 'Select Note Code' and 'Note Code Entries' are moved to the Note (f3) menu on the Route screen. This combines all note-related functions under the 'Note' menu.
- Simplified operation - Note codes are now reset when route data is synced with VDS to prevent duplicate note codes.

CoCo-80 Improvements
Supports CVAT user profiles
Users can now access the Account Management function on a CoCo-80 with a CVAT "Administrator" or "Local Administrator" profile. These profiles are treated as administrator accounts with abilities to access and manage other accounts.

Route screen - shortened text for OnSite
The text next to each route point representing the number of collected OnSite measurements is shortened to allow longer names to be displayed.

CoCo-70X Improvements
'Rec Wav' button added to CoCo-70X UI
The 'Rec Wave' button allows users to record voice annotations. This function was activated through touchscreen on the CoCo-80X. The CoCo-70X allows users to optionally map this function to the Sensor key. These functions are configured in the Display Options menu.

CoCo-80X Improvements
8-channel FFT CSA added
- An 8-channel FFT CSA is added.

CoCo-90X Improvements
CSAs from CoCo-80X missing on CoCo-90X are added
- The following CSAs are added to CoCo-90X:
  - APS_AutoCorr(2)
  - APS_AutoCorr(4)
  - APS_AutoCorr(8)
  - APS_RMS(4)
  - APS_RPM(4)
  - APS_RPM(8)
  - APS_RPM_RMS(4)

  - Corr(8)
  - Transient(2)
  - Transient(8)

EDM CoCo Mode
Combined License Keys
(For non-commercial users) Commercial and non-commercial CoCo units can combine use of a single license key.

CSA Editor - Enter cut-off frequencies in Hz instead of frequency ratio
The CSA Editor now allows users to enter cut-off frequencies in Hz instead of a frequency ratio, making this feature easier to use. When using any of the 'fixed' filter types (such as Fixed Low Pass, Fixed High Pass, Fixed Band Pass, etc.), this feature allows users to enter the cut-off frequencies in Hz (instead of f/fs).

Copy points without appended text
EDM-VDC Mode no longer appends the word "copy" when copying points. Users are prompted to enter a new name If points are copied into the same machine.

SOFTWARE RELEASE HISTORY

Dates of software releases

Type	Release	Exact Version	Release Date
Release	EDM 4.2	CI 4.2.0.3	02/28/2014
Patch	EDM 4.2.0	CI 4.2.0.14	07/02/2014
Release	EDM 5.0	CI 5.0.0.2	11/27/2014
Patch	EDM 5.0.1	CI 5.0.1.3	02/27/2015
Release	EDM 5.1	CI 5.1.0.6	08/12/2015
Release	EDM 6.0	CI 6.0.0.1	05/19/2016
Patch	EDM 6.0.2	CI 6.0.2.9	08/09/2016
Release	EDM 6.1	CI 6.1.0.4	02/07/2017
Patch	EDM 6.1	CI 6.1.0.27	08/22/2017
Release	EDM 7.0	CI 7.0.0.6	02/01/2018
Patch	EDM 7.1	CI 7.1.0.7	07/19/2018
Release	EDM 8.0	CI 8.0.0.1	02/02/2019
Release	EDM 8.1	CI 8.1.0.1	11/13/2019
Release	EDM 9.0	CI 9.0.0.4	06/05/2020
Release	EDM 9.1	CI 9.1.0.0	02/03/2021
Release	EDM 10.0	CI 10.0.0.2	10/26/2021
Release	EDM 10.1	CI 10.1.0.1	09/09/2022

Type	Release	Exact Version	Release Date
Release	ECX 1.0	1.0.7	07/26/2016
Release	ECX 1.2	1.2.3	02/22/2017
Patch	ECX 1.2	1.2.5	03/07/2017
Release	ECX 1.4	1.4.1	03/15/2018
Release	ECX 1.6	1.6.0	12/05/2019
Release	ECX 1.8	1.8.7	06/25/2020
Release	ECX 2.0	2.0.2	02/10/2021
Patch	ECX 2.0	2.0.6	05/07/2021
Release	ECX 2.2		

SYSTEM REQUIREMENTS

Minimum System Requirements:

- Operating System Support: Windows 10 or higher
- Operating System Type: 64-bit
- Processor Speed: 1.5 GHz Dual-Core x86
- RAM: 8 GB
- Available Storage Space: 10 GB

VERSION COMPATIBILITY

Product and Software version	EDM CoCo-DSA Version	EDM CoCo-VDC Version	VDS Version
CoCo-80 ECX 4.0.62	10.1	6.4	1.8.0.3
CoCo-70X ECX 2.2	10.1	6.4	1.8.0.3
CoCo-80X ECX 2.2	10.1	6.4	1.8.0.3
CoCo-90X ECX 2.2	10.1	6.4	1.8.0.3