

ABB FTIR – FTLA2000 Analyzer Driver/Interface

This document describes the driver/interface for the ABB FTIR - FTLA2000 series laboratory analyzers.

Product Description

The interface provides data collection and control of all instrument parameters. This allows acquisition of reference (also called background) and sample spectra.

The interface is compatible with all ABB FTLA2000 and MB100 series spectrometers that use an Ethernet Interface. This includes Mid IR models FTLA2000-100, FTLA2000-104, Near IR models FTLA2000-154 and FTLA2000-160. It is not compatible with earlier MB series spectrometers that require an ISA or PCI bus interface card to be placed in the PC.

The software interface is made up of an instrument control DLL that interfaces to the analyzer hardware, the xPAT analyzer service, the xPAT configuration template for FTLA2000 and the xPAT object type for FTLA2000.

ABB's AIRS software is used to initially qualify the analyzer and to validate its correct operation. AIRS is not required for routine operation of the analyzer.

Manual control and status display of the analyzer is provided by a standard faceplate associated with each instance of the analyzer on the xPAT workplace.

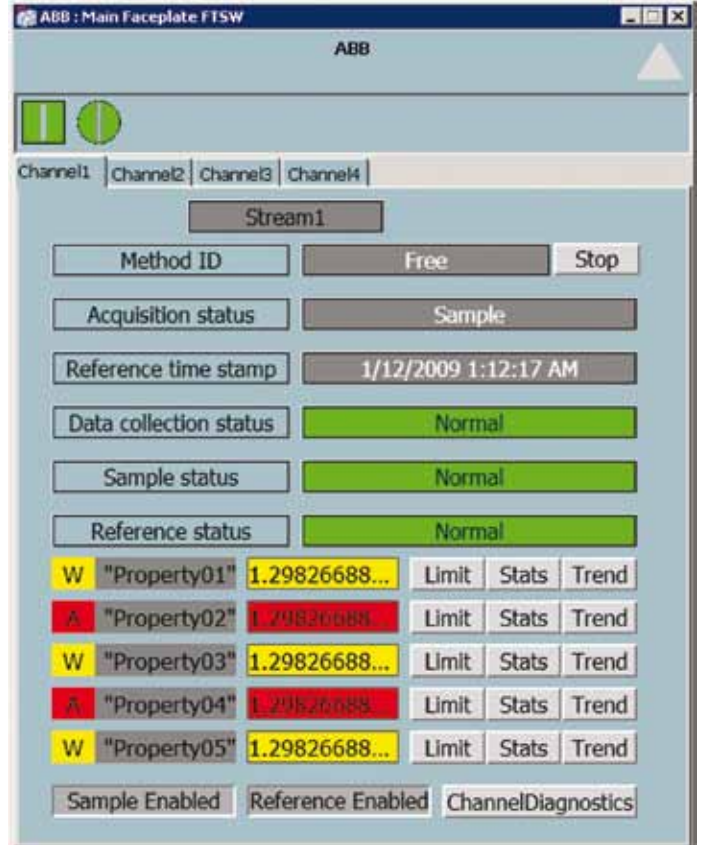
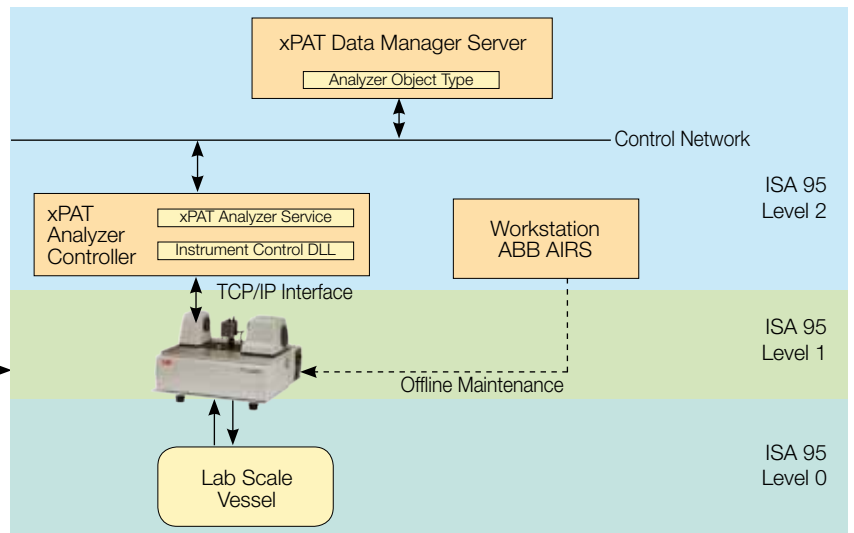


ABB FTIR – FTLA2000 Analyzer



Specifications

| | | | | | |
|---|--|---------------|---------------|----------------|---------------|
| Analyzer Class | IR spectrometer: FTLA2000-100 and FTLA2000-104 NIR spectrometer: FTLA2000-154 and FTLA2000-160 | | | | |
| Subclass | Fourier Transform Spectrometer (FTIR/FTNIR) | | | | |
| Interface | Ethernet TCP/IP | | | | |
| Compatibility | All Ethernet based FTLA2000/MB Series Analyzers | | | | |
| Throughput | Mid IR models | | | Near IR models | |
| | Resolution | Spectrum size | Max samples | Spectrum size | Max samples |
| | 1 cm ⁻¹ | 16384 | every 32 secs | 32768 | every 64 secs |
| | 2 cm ⁻¹ | 8192 | every 16 secs | 16384 | every 32 secs |
| | 4 cm ⁻¹ | 4096 | every 8 secs | 8192 | every 16 secs |
| | 8 cm ⁻¹ | 2048 | every 5 secs | 4096 | every 8 secs |
| | 16 cm ⁻¹ | 1024 | every 5 secs | 2048 | every 5 secs |
| | 32 cm ⁻¹ | 512 | every 5 secs | 1024 | every 5 secs |
| | 64 cm ⁻¹ | 256 | every 5 secs | 512 | every 5 secs |
| 128 cm ⁻¹ | 128 | every 5 secs | 256 | every 5 secs | |
| Control Parameters | Read access to all parameters | | | | |
| Channels | 1 Channel | | | | |
| Gains | 1 Stage gain set by switch, no software control | | | | |
| Spectral Resolution | Selectable 1,2,4,8,16,32,64,128 cm ⁻¹ only manual selection by switch available on early models | | | | |
| Signal Processing Parameters | Settings for signal processing of raw data | | | | |
| Laser Frequency | Determines the x axis of the spectrum; Default 15799.70 cm ⁻¹ | | | | |
| Interferogram Apodization Function (sample and phase correction) | Selectable: Boxcar, Bartlet, Cosine, Hamming, Blackman-Harris, Gaussian, Norton Beer Weak, Norton Beer Medium, Norton Beer Strong | | | | |
| Phase Correction Resolution | Selectable 64, 128, 256, 512 cm ⁻¹ ; Default 128 cm ⁻¹ | | | | |
| Spectral Range | Not selectable, always uses maximum range | | | | |
| Faceplate Status Indicators – analyzer | | | | | |
| Connection Status | Status of Ethernet link to analyzer: good or bad | | | | |
| Analyzer Status | Status of analyzer: good or bad | | | | |
| Faceplate Status Indicators per channel | | | | | |
| Acquisition Status | Idle, Sample Starting, Sample, Reference Starting or Reference | | | | |
| Reference Time Stamp | Data time for last Reference | | | | |
| Data Collection Status (for sample or reference) | Normal, Maintenance, Fault | | | | |
| Faceplate Commands per channel | Collect Sample, Collect Reference | | | | |
| Control Type | xPAT provides start/stop signal | | | | |
| Data Acquisition | Collect Reference Spectrum for Calibration and Absorbance Spectrum for samples | | | | |
| Data Analysis | Up to 5 properties with Prediction Statistics computed from Peak height or PLS model (PLSplusIQ or SimcaP+) | | | | |
| Calibration | Collect Reference | | | | |
| Validation | Operational Qualification (OQ) of analyzer partly supported in spectral diagnostics; full OQ requires AIRS software. Performance Qualification (PQ) implemented by method specific configuration | | | | |
| Spectral Diagnostics | Available on Reference and Sample spectra: Spectral Noise (RMS noise over a spectral region), Frequency Validation (check correct location of a known band), Non-linearity (detect saturation with out of band signal), Spectral Band Intensity (Check a band for minimum intensity) | | | | |
| Health Monitoring | Monitors Analyzer Hardware Status; e.g. TCP/IP connection to Analyzer, Bad Scan Detection | | | | |
| Asset Management | Not implemented | | | | |

For more information on the FTLA2000 analyzer itself please visit www.abb.com/analytical. For more information on ABB Life Sciences solutions visit www.abb.com/lifesciences.

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