

ABB FTIR – FTPA2000-300 Analyzer Driver/Interface

This document describes the driver/interface for the ABB FTIR - FTPA2000-300 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 FTPA2000-300 and WorkIR series spectrometers that use an Ethernet Interface. This includes FTIR models FTPA2000-300, FTPA2000-300T, FTPA2000-304, FTPA2000-304T, FTNIR models FTPA2000-360 and FTPA2000-360T. It is not compatible with earlier WorkIR 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 FTPA2000-300 and the xPAT object type for FTPA2000-300. 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.

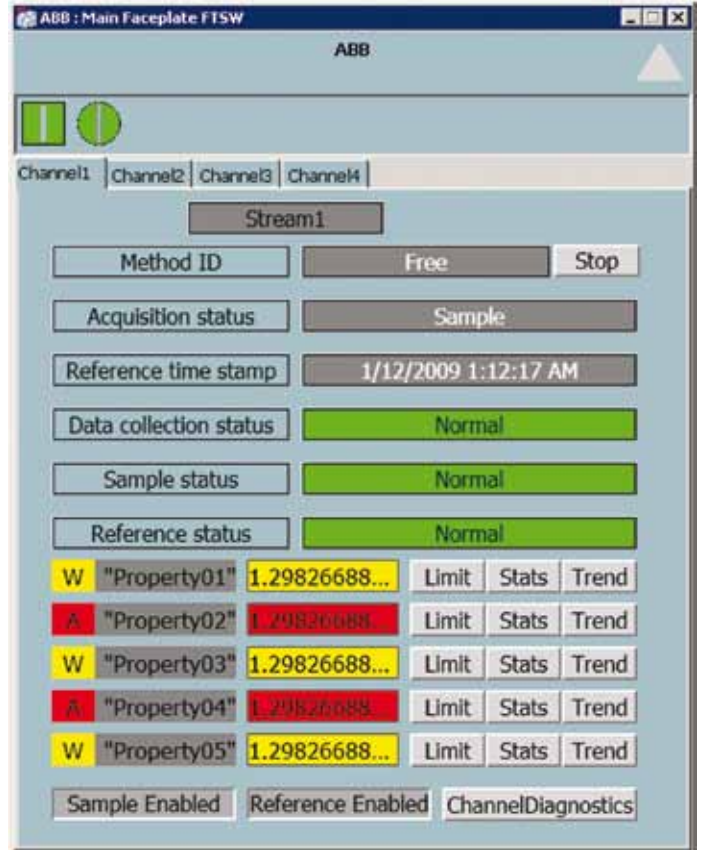
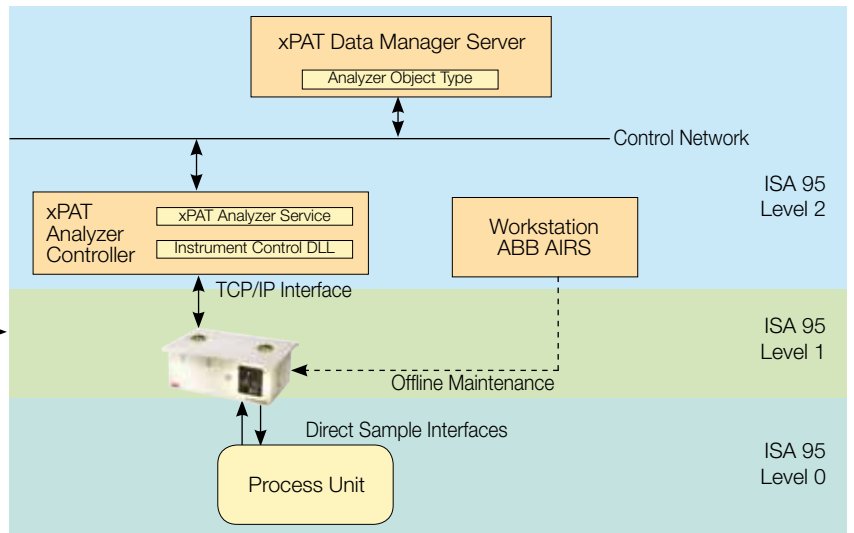


ABB FTNIR – FTPA2000-300 Analyzer



Specifications

Analyzer Class	IR spectrometer: FTPA2000-300, FTPA2000-300T, FTPA2000-304 and FTPA2000-304T NIR spectrometer: FTPA2000-360 and FTPA2000-360T				
Subclass	Fourier Transform spectrometer (FTIR/FTNIR)				
Interface	Ethernet TCP/IP				
Compatibility	All Ethernet based FTPA2000-300/WorkIR 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/write access to all parameters				
Channels	1 channel				
Gains	Selectable 1,2,4,8,16				
Spectral Resolution	Selectable 1,2,4,8,16,32,64, 128 cm ⁻¹				
Number of Scans	Number of scans to average per sample measurement / per reference measurement; Default 1				
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 or 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 per channel 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 FTPA2000-300 analyzer itself please visit www.abb.com/analytical. For more information on ABB Life Sciences solutions visit www.abb.com/lifesciences.

Note:

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