

# Axsun NIR - IntegraSpec XLP Driver/Interface

This document describes the driver/interface for the Axsun tunable laser – IntegraSpec XLP MEMS NIR spectrometer module.

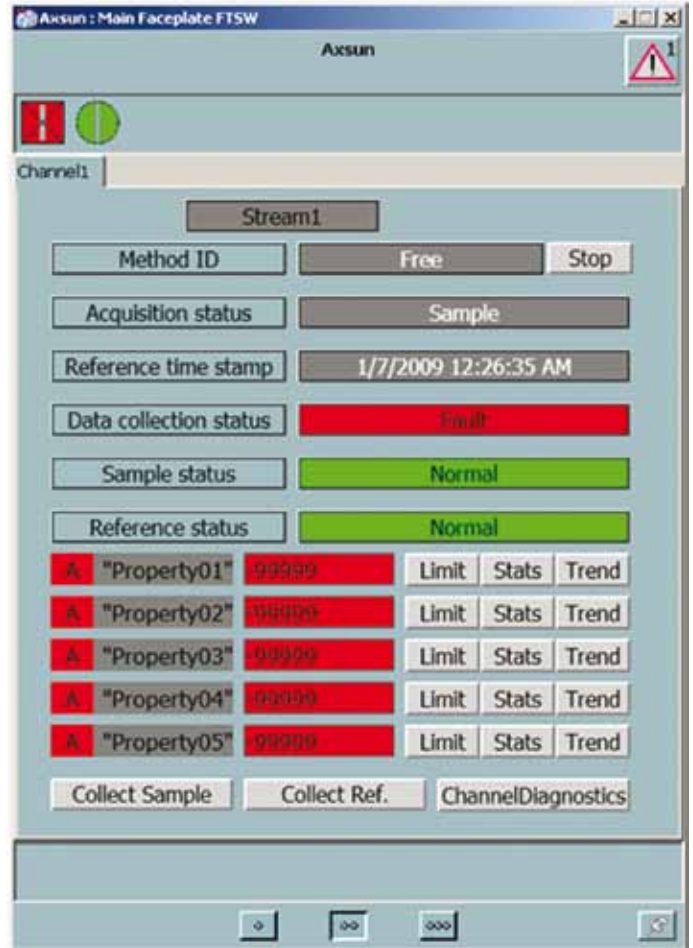
## Product Description

The interface provides data collection and control of all instrument parameters. This allows acquisition of sample spectra and calibration spectra (white and dark background).

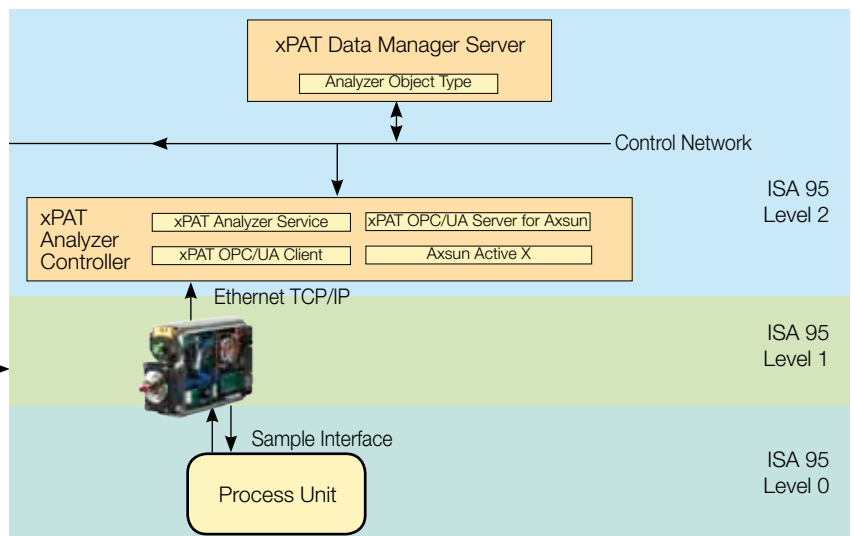
The interface is compatible with Axsun firmware v1.5.94.

The software interface is made up of the Axsun firmware that controls the MEMS spectrometer, the Axsun Active X interface that interfaces to the firmware, the xPAT OPC/UA server for Axsun that interfaces to the Active X and provides connectivity to the xPAT Analyzer Controller, the xPAT analyzer service including the OPC/UA client, the xPAT configuration template for Axsun and the xPAT object type for Axsun.

All Analyzer functions are performed through xPAT, 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.



Axsun Tunable Laser – IntegraSpec XLP MEMS NIR Spectrometer Module



## Specifications

Analyzer Class	NIR spectrometer
Subclass	Tunable laser (MEMS Technology)
Interface	Ethernet TCP/IP - OPC/UA
Compatibility	Axsun firmware v1.5.94, Axsun Active x v1.7.0
Throughput	Max 1 sample every 5 seconds
Spectrum Size	Nominal 225 points for 1350 to 1800 nm spectral range
<b>Control Parameters</b>	Read/Write access to all parameters
Channels	1 channel
Gains	Selectable 1 to 8 Default 5
Number of Scans	Number of scans to average per sample measurement. Default 4
Number of Scans for reference	Number of scans to average per reference measurement. Default 4
Hardware Trigger Delay	Sets the delay in seconds for sample analysis start after the hardware trigger Range: 0.001 to 3600 seconds Default: 0.001 seconds
Hardware Trigger Mode	Selectable trigger function: rising edge, trailing edge, level, no trigger (software triggered) Default: rising edge
<b>Signal Processing Parameters</b>	
Spectral Range	Minimum and Maximum of desired spectral range in nm Default 1350 to 1800nm
Point Spacing	Point spacing in nm Default 2.0nm
Deresolve Mode	Selectable: None, Weighted moving average, Savitsky-Golay Default: Weighted moving average
Deresolve Width	Width of deresolve function in nm Default: 2 nm
<b>Faceplate Status Indicators – analyzer</b>	
Connection Status	Status of Ethernet link to analyzer: good or bad
Analyzer Status	Status of analyzer: good or bad
Acquisition Status	Idle, Sample starting, Sample, Reference starting or Reference
Reference Time Stamps	Date time for last dark background and white background spectra
Data Collection Status (for sample or reference)	Normal, Maintenance, Fault
Faceplate Commands	Collect Sample, Collect Reference
Control Type	xPAT provides start/stop signal
Data Acquisition	Collect dark background and white background spectra for calibration and absorbance spectra for samples
Data Analysis	Up to 5 properties with statistics from Peak height or PLS model (PLSplusIQ or SimcaP+)
Calibration	Collect dark background and white background
Validation	Operational Qualification (OQ) of analyzer partly supported in spectral diagnostics; 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), Spectral Band Intensity (Check a band for minimum intensity)
Health Monitoring	Monitors analyzer hardware status; e.g. TCP/IP connection to analyzer, Analyzer status
Asset Management	Not implemented

For more information about this analyzer please visit [www.axsun.com](http://www.axsun.com). For more information on ABB Life Sciences solutions visit [www.abb.com/lifesciences](http://www.abb.com/lifesciences).

### Note:

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