

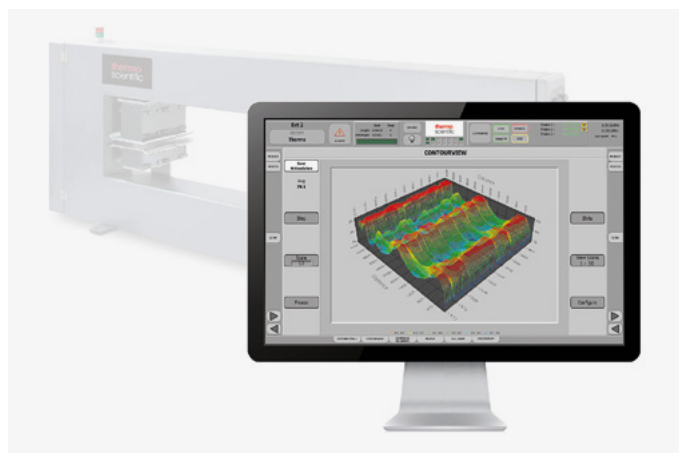
# Thermo Scientific 21PlusHD Upgrade Package

The Thermo Scientific™ 21PlusHD upgrade package provides a flexible, cost-effective technology update solution for legacy web gauging systems. This upgrade package is designed to protect your plant assets and maximize the return on investment through improved performance, availability and low cost of system ownership.

### Features

- Modular upgrade options
- Fast on-site implementation
- Latest FLEX HMI operator displays
- Latest measurement and control algorithms and strategies
- New maintenance diagnostics
- High speed remote access
- Seamless expansion for measurement, controls and information products

Now the performance of older web gauging systems (sold under the former brand names of LFE ProfitMaster (PM4x4), CIMLine, Radiometrie and Eberline) can be improved by upgrading to Thermo Scientific™ 21PlusHD measurement and control system. This upgrade package can also be used on other legacy systems such as Kineron and System 21 (sold under the former EGS brand) as well as be applied to qualified scanners and gauges from other suppliers.



The evolution of commercially available technologies and computing platforms has rendered many web gauging systems, with their proprietary architectures, obsolete. While the scanners and sensors may still be functional, the overall system performance is compromised through:

- declining reliability
- low measurement resolution
- limited process visibility
- limited control performance
- restricted functional expansion
- limited service knowledge
- declining parts availability

Intelligent measurement and control

The 21PlusHD upgrade package encompasses the measurement system, the controls and the human-machine interface (HMI). It upgrades or replaces parts of the existing system, beginning with the measurement and control interface.

Traditional scanner measurement and control interfaces were based on either analog or digital signal processing of the sensors that was communicated via a proprietary protocol to the systems’ central computer. This is replaced with a modular interface called an iBox that processes all the system’s digital and analog signal communications.

Designed to connect to the sensors, the iBox represents a cost-effective solution. It is an intelligent device that can either be mounted on the scanner or located remotely. The iBox performs all the measurement and control functions with its integrated processor.

Each scanner requires its own dedicated iBox. Multiple scanner configurations coordinate their measurements to provide same-spot measurement for coatings or biaxially-oriented film.

This intelligent measurement system can communicate all the gauge and scanner data across a TCP/IP network. This effectively opens the system such that information can be freely shared among your operations.

A Thermo Scientific system expert will perform a system audit on the legacy system prior to an upgrade. This audit includes the mechanical and electronic components of the measurement system, on-site documentation and information pertaining to existing links.

Nuclear, x-ray, infrared and caliper gauges

The 21PlusHD upgrade package enhances the performance of the measurement system. It includes a fully functional complement of:

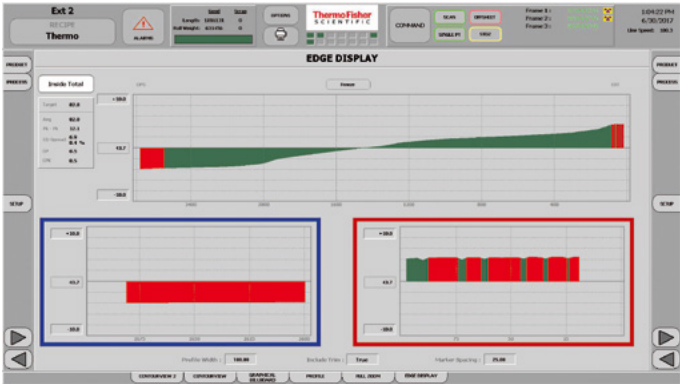
- measurement algorithms for improved calibration accuracy
- motion modes for precision scanner head positioning
- standard host displays for diagnostic and maintenance support of the gauges and scanners

Sensor calibration is stored in the new iBox for nuclear, x-ray, infrared and air caliper gauges. The greater processing power of the iBox results in higher-resolution measurement for improved streak detection and more effective automatic profile control (APC).

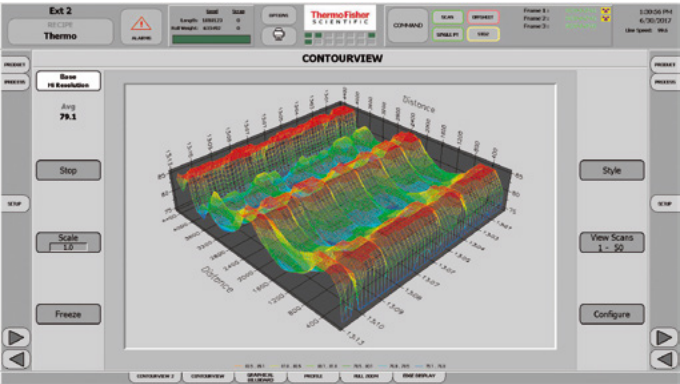
Operator interface

The 21PlusHD upgrade package offers a family of PC-based operator console options, designed for use in either control rooms or hostile machine-floor operating environments. The LCD high-resolution, touch-screen monitor provides an effective interface for the operators to manage the production line.

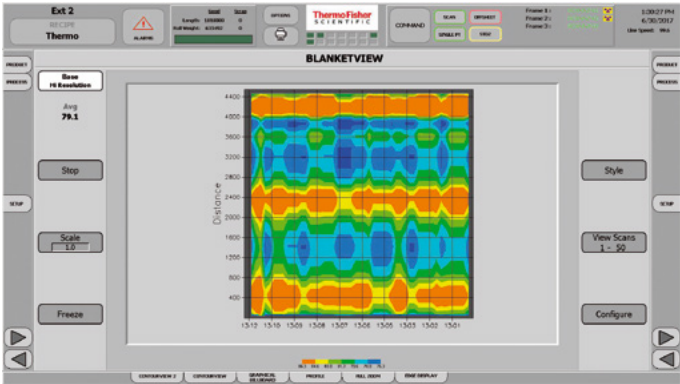
The PC-based workstation includes DVD and USB backup capabilities. The standard Windows® 10 operating system used for the PC platforms of the 21PlusHD measurement and control system can be interfaced to other standard Microsoft® applications as required. Additionally, the modular electronics design permits connectivity to a host of controls and/or data archiving systems.



Profile with edge zoom



3D contour view



2D heat map



Slit roll summary

System upgrade benefits

- Improved reliability and ease of maintenance
- Retention of existing scanner and sensor investment
- Elimination of obsolete electronics components
- Reduced cost of ownership and on-site maintenance
- Improved measurement and control performance and return on investment
- Retention of compatible communication links ensures a smooth upgrade transition
- Open system technology permits plant-wide access to quality & production data

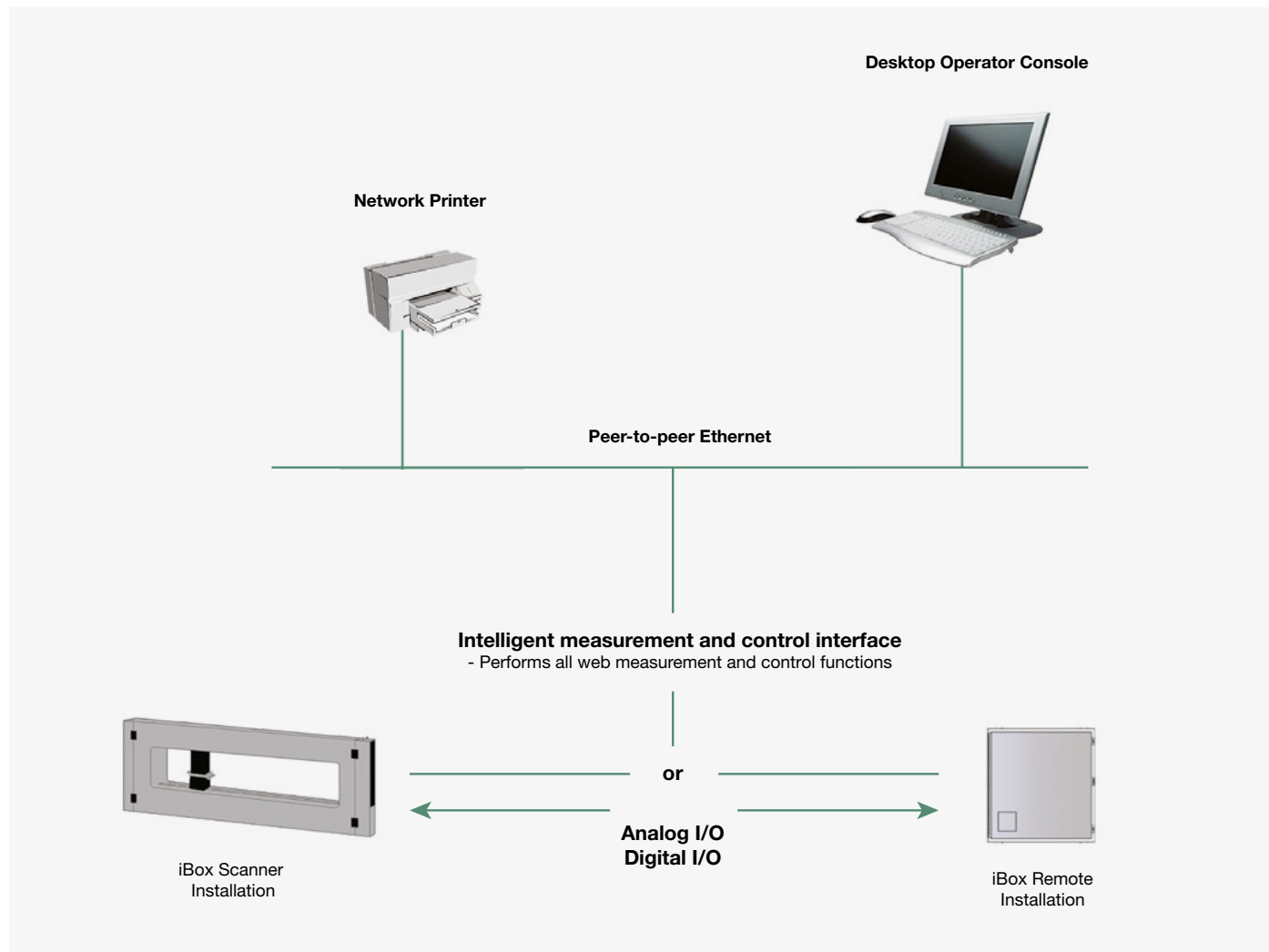
FLEX operator interface

The touchscreen of the 21PlusHD measurement and control system provides an intuitive interface for your operations. The complete suite of FLEX displays offers a range of information, control and analysis capabilities for process decision support, including:

- process specific displays
- split-screen design for maximum process visibility
- logical organization
- efficient navigation to controls and information
- language and translation support

Further expansion options include slit roll, shift, and production reports as well as roll quality management system (RQMS), a powerful roll genealogy and disposition package that displays three-dimensional graphics for advanced process and quality analysis. These and other tools can be used to monitor the entire production process to identify potential quality issues and extract historic data for detailed analysis.

## 21PlusHD upgrade package configuration



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