Mark 3

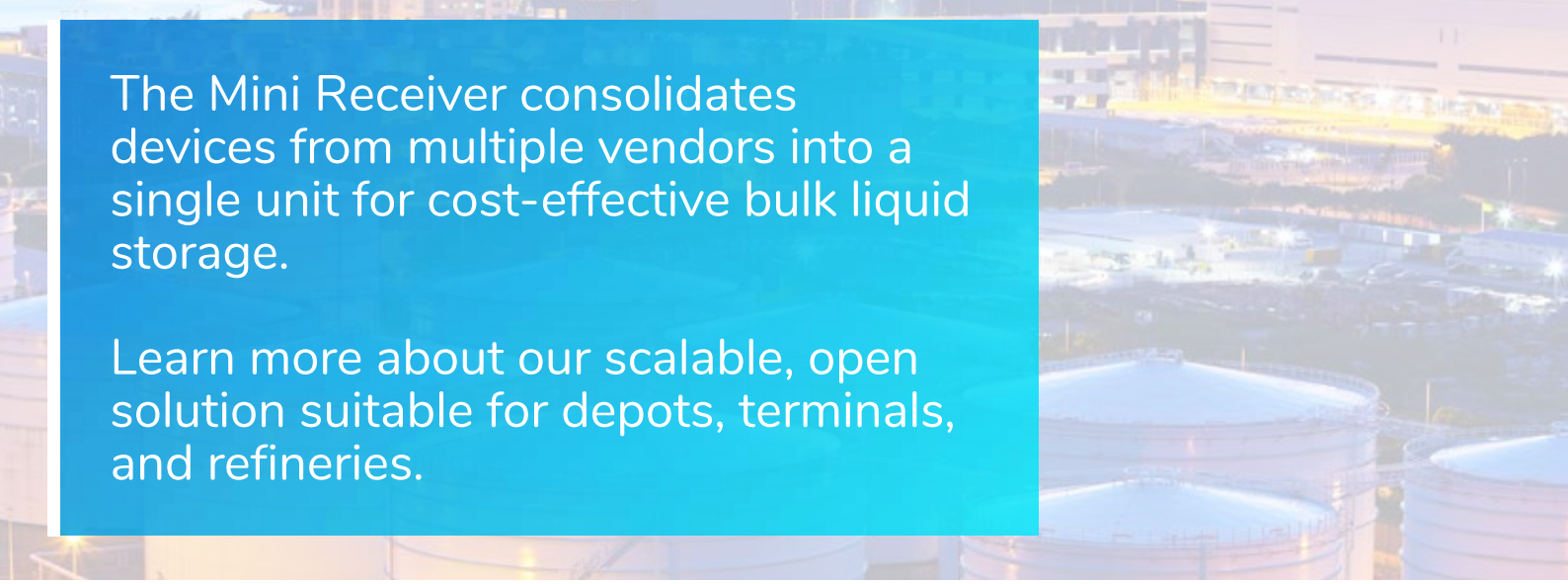
Mini Receiver

MHT Technology Ltd's Tank Gauging Hardware

MHT Technology Ltd

Digital Transformation with Human Design

+44 1748 828820 www.mht-technology.co.uk sales@mht-technology.co.uk



The Mini Receiver consolidates devices from multiple vendors into a single unit for cost-effective bulk liquid storage.

Learn more about our scalable, open solution suitable for depots, terminals, and refineries.

Launched in 2006

Trusted by customers for over 7 years

575 Mini Receivers in use across the world

Supports up to 400 devices and 20 ports.

Overview

The Mini Receiver from MHT Technology is a small integrated tank gauging and tank inventory management system utilising the latest Windows 10 IoT embedded technology. The Mini Receiver consolidates devices from multiple vendors into a single unit for cost-effective bulk liquid storage. Learn more about our scalable, open solution suitable for depots, terminals, and refineries.

The Mini Receiver is designed to keep our customer's site's running as efficient and cost-effective as possible. It is a smartly compact tank gauging and tank inventory management system, suited for tank farms of any size using various communication protocols for their installed field devices. MHT's Mini Receiver 'mark 1' was first launched in 2006, revolutionising the industry by enabling sites to have more freedom in their suppliers and eliminating 'vendor lockin.'

Since then we have continued to innovate by developing the latest version 'the mark 3' in 2013 which directly interfaces up to 400 devices simultaneously. Should a site's tank gauging system be unable to display tank gauging information then the Mini Receiver screen allows some control over the site.

The Mini Receiver comes with support for 4, 12 and 20 ports that can serve as host or field ports, full inventory calculations to API/ASTM standards, an OPC Data Access Server and much more. It features a full graphical 7" LCD display with touch screen technology showing live and calculated tank data allowing control over the field instrumentation as well as alarm and events notification. , full inventory calculations to API/ASTM standards and an OPC Data Access Server.

In addition to being a small tank inventory management system, it can be used as a foreign device gateway to higher-level DCS and site-wide business information systems by providing an open interface to older legacy and proprietary protocols and interfaces. The Mini is available in a choice of enclosure materials, the stainless steel option is suitable for wall mount applications, and the aluminium option is suitable for installation within standard 19-inch rack cabinets.

Key Features

Different gauge commands

The display can also be used to invoke a range of gauge commands which include Servo Check / Test, Stow / Lock, Unstow / Unlock, Water Dip and Density /Temperature Profile.

Networking functionality

The 20 port Mini features dual ethernet ports, allowing redundancy at the network level with autosensing connection which can be configured for different IP addresses. A web server can provide a comprehensive view of tank data to desktop browsers connected to the network.

Configurability

Data can be displayed on an innovative 7” touch screen display that is customisable to suit individual site requirements and configure audible alarms.

Reliability

All firmware is stored on a flash drive for maximum reliability, and integrated tools used to create custom configurations that suit individual site requirements are included as standard with each Mini Receiver.

Service monitoring

An internal watchdog can be enabled to monitor the operation of critical services and should any fail, the system can be configured to automatically restart, ensuring maximum up-time.

Flexibility

Different vendors tools can also be utilised to configure gauges by tunnelling through the Mini Receiver.

Communication options

The wall-mount Mini Receiver offers a maximum of 8 serial communication ports and the rack-mount options can accommodate either 8 or 20 serial communication ports. Each option has standard RS-232 / RS-422 / RS-485 serial ports available to be configured for host interfaces.

Compatability

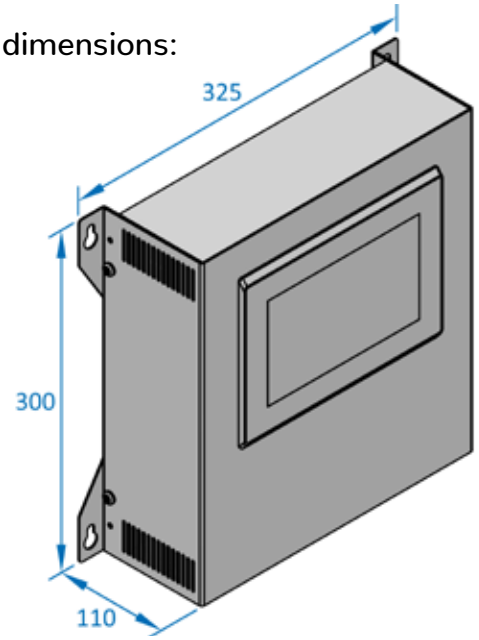
The Mini Receiver can also be used as a foreign device gateway to higher level DCS and site wide business information systems by providing an open interface to older legacy and proprietary protocols and interfaces.

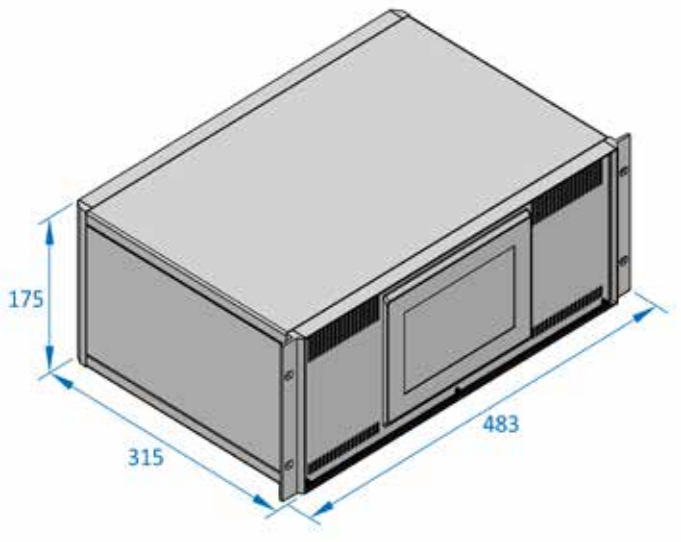
+44 1748 828820 www.mht-technology.co.uk sales@mht-technology.co.uk

System Architecture

The Mini Receiver can be used as a standalone unit; but is more commonly used as part of a tank gauging system, where it concentrates data from disparate field inputs into one place. A pair of Mini Receivers can be deployed in a redundant configuration to provide automatic fault-tolerance. In normal operation, the pair operate in an Active-Passive mode, where the active Mini Receiver polls the field. The passive device reads data from the active one so that in the event of a failure it can assume the active role with a near-instant recovery time..

External dimensions:





CPU:	Intel Celeron 1.58Ghz
Memory:	4 GB RAM
Storage:	8 GB SSD
Operating System:	Windows 10 IoT
Optional Display:	7” widescreen module (640 x 480 px)
Input:	Touch screen
Serial Comms:	RS-232, RS-422, RS-485, Honeywell BPM, Emerson TRL/2, Current Loop, L&J Tankway, Varec Mark Space, Endress+Hauser V1, Hectronic, HART
Client Protocols:	Honeywell GPU, Modbus (Emerson, SI, E+H, and generic), L&J, Hectronic, Varec
Host Protocols:	Modbus (including emulation of CIU880 Prime), Modbus/TCP, OPC DA, OPC UA, Enraf ASCII
Weight:	4.5 - 6.0 kg

Ethernet:	2 ports, 10/100 Mbps, auto sensing
Power supply:	100-240 VAC
Power consumption:	70W (3.5 @ 230V)
USB:	2 external ports, USB2.0 Type-A
Comms status:	Tx/Rx LEDs for individual ports
IP rating:	IP20
Operating temperature:	0 to 40 ºC
Storage temperature:	0 to 85 ºC
Mounting:	19” rack, 4U
Host interface support:	Modbus TCP via Ethernet, Modbus RTU Slave, OPC Data Access Server, Enraf ASCII Host, Whessoe ASCII Host, ‘Saab’ TankMaster

+44 1748 828820 www.mht-technology.co.uk sales@mht-technology.co.uk

Electrical interfaces are:

- BPM
- TRL/2
- RS485/RS232
- Current Loop
- V1
- Varec Mark Space

Protocols on the interfaces:

- GPU
- Modbus Master
- Modbus Slave
- Whessmatic 550
- Whessmatic 660
- V1
- Varec
- L&J

The Mini Receiver has 2 Ethernet ports, which can be configured to support redundant Ethernet or as separate networks. These Ethernet ports can provide Modbus/TCP (Master and Slave), OPC DA (Master and Slave), OPC UA (Slave), Web Interface, RDP, SNMP.

In addition to being a small tank inventory management system, it can be used as a foreign device gateway to higher-level DCS and site-wide business information systems by providing an open interface to older legacy and proprietary protocols and interfaces.

The requested gauge commands can be invoked from the display:-

•Stow/Lock
•Unstow/Unlock
•Water Dip

NOTE: this is provided that the gauges support the above commands.

A long list of inventory calculation methods is supported complying with all of the common API/ASTM methods. A full detailed list can be provided.

Key Features

- Windows 10 IoT embedded system
- Full colour graphical LCD Interface with Touch Screen
- Inventory calculations to API/ASTM Standards
- Available with 4, 12 or 20 communication ports configurable as host or field interfaces
- Dual Ethernet port
- Field interfaces for most makes of tank gauge
- Up to 256 tanks

The device is provided with a set of configuration tools that allow custom configurations to be created to suit individual site requirements.

Mini Receiver