



Fardux

## Airwave Well Services Wireless HART Gateway

When it comes to well services activity, instrumentation products have to be rugged and ready to go out of the box. For Well Testing, Fluid Pumping and Coil Tubing jobs, Fardux's Airwave Well Services WirelessHART Gateway is fit for purpose, benefiting from years of engineering experience and honed-in knowledge of just what it takes to work in harsh environments offshore, or onshore, anywhere on the planet.

### OVERVIEW

Fardux is recognised by many as the industry leader when it comes to Surface Data Acquisition systems. Our Fardux cabled system, coupled with our multi-platform software, is robust and field-proven, having operated in some of the harshest environments. Fardux remains the choice of preference for discerning clients.

Recognising that some applications benefit from a non-cabled solution, we have introduced Airwave - a secure, cost competitive wireless alternative that works to the industry standardised HART protocol, the world's leading process communication protocol for smart instruments.

At the heart of the system is our WirelessHART gateway - AirWave. It communicates with the WirelessHART instrumentation, manages security and connectivity, and exports data in a format that is compatible with our world renowned software packages.



Whether it's a new deployment or an upgrade to existing instrumentation, AirWave delivers a flexible and reliable way to remotely manage field assets whilst offering significant economies in deployment time and cost, together with feature rich HART functionality.

AirWave also supplies more information than just the raw measured values. In-built diagnostics ensures the health of the network can be monitored, helping to further reduce overall operational costs such as unnecessary plant downtime.

System reliability is ensured by use of a mesh topology network to provide a 'self building, self-healing' communications link with redundant pathways that adapt to any changes in the local signal environment.

AirWave Well Services works in conjunction with the FWAOOI WirelessHART Adaptor, enabling the conversion of HART devices to operate wirelessly.

Cross platform compatibility is important in today's instrumentation world, while accuracy, reliability and stability remain of the highest importance. The process measurement transducer is the primary point of measurement which must perform to the required industry standards since beyond this point everything else is nothing more than a transmission system, a storage data base or a display and reporting engine which can never enhance the data quality from the point of measurement.

The important issue here is that most of the world's major instrumentation manufacturers have subscribed to the HART or WirelessHART protocol. This means that Fardux are able to supply transducers from recognised companies to ensure not only accuracy, resolution and stability but cross platform compatibility and track-record-proven environmental durability.

When it comes to well services activity, instrumentation products have to be rugged and ready to go out of the box. For Well Testing, Fluid Pumping and Coil Tubing jobs, Fardux's Airwave Well Services WirelessHART Gateway is fit for purpose, benefiting from years of engineering experience and honed-in knowledge of just what it takes to work in harsh environments offshore, or onshore, anywhere on the planet.

The Fardux Airwave Well Services WirelessHART gateway can be provided for use in both safe areas, and hazardous areas (Zone 1 & Zone 2). Hazardous area and safe area antennae are available to suit particular installations

### KEY BENEFITS

- Faster deployment. Rapid installation as no need to plan, install and commission cable runs.
- Lower costs. Reduced time and materials delivers significant cost savings, including additional expenses such as obtaining work permits.
- Improved visibility. The ability to quickly and easily add additional monitoring sensors provides enhanced process visibility and control.

### KEY FEATURES

- Proven technology. Builds upon existing HART protocol used by more than 24 million installed instruments worldwide.
- Mesh network. Provides a highly resilient and fault tolerant 'self-healing' communications link between the sensor and gateway.
- More data. Using a WirelessHART adaptor, information retained inside existing 4-20mA intelligent field instruments such as device diagnostics is unlocked.
- Security. WirelessHART protocol employs robust security measures to protect the network and secure data at all times.
- Integral power supply module 110/240 VAC
- Ruggedised construction for harsh environments

### MAIN FUNCTIONS

- Airwave Well Services WirelessHART Gateway
- Compliant with the WirelessHART specification
- Works with all WirelessHART adaptors and devices- not tied to any single manufacturer
- Ethernet and RS-485 interfaces with support of HART and MODBUS allows easy integration into existing system
- Web interface providing a clear presentation of network, measured values and diagnosis information
- Local or remote antenna options enabling easy adaptation to local installation conditions
- Acquisition of data from network devices and presentation to the connected system
- Web server supporting MODBUS protocol for data transfer



## TECHNICAL DATA

### OPERATING CONDITIONS

Supply Voltage	110 to 240 VAC
Peak Current	45 mA (AC Supply)
Transmit Current	60 mA (DC)
Receive Current	21 mA (Max 27 mA) (DC)

All electrical parameters specified at STC: 25°C cell temperature; 1000 W/m<sup>2</sup> irradiance; AM 1.5

### SYSTEM CONTROL AND MANAGEMENT TECHNICAL SPECIFICATION

Processor power	600MHz (ARM Cortex A8)
LP DDR Memory	256 MB
On board Flash memory	512 MB
Local Storage	4 GB (SD Card)
Local Area Network	10/100 bit ethernet
Real time Clock	3V
Operating System	Linux Ubuntu

### TRANSCEIVER RADIO CHARACTERISTICS

Operating frequency	2.4 to 2.4750 GHz
Number of channels	15
Channel Separation	5 MHz
Occupied Channel Bandwidth	2.65 MHz
Frequency Accuracy	-40 to +40 ppm (Determined by the 24MHz Crystal)
Modulation	O-QPSK
Raw Data Rate	250 Kbps
Output Power	9 to 12 dBm (Conducted at Antenna Port)

### ANTENNA SPECIFICATION

Operating frequency	2.4 to 2.4835 GHz
Impedance	50 Ohm
Gain	+5 dBi
Pattern	Omni-directional
Connector	SMA Plug

### MAX RATINGS/ENVIRONMENTAL/MECHANICAL

Operating Temperature	-40 to 85 Deg C
Relative Humidity	10 to 90 %RH (Non Condensing)
Enclosure	2U 42HP rack mount unit
External Case	Honeycomb Aluminium Hardcase
Dimensions external (L x W x D)	40 x 31 x 14 cm
Weight	7.08 Kg

## Fardux

### WHY FARDUX?

We have always believed that the supply of our oil and gas data acquisition products and solutions is just the beginning of our relationship with our customers.

We endeavour to provide support from the moment the decision is made to purchase any product, and then throughout the product's lifecycle. We always work hard to ensure our customers are provided with the best solutions, support and advice.



All the data, when  
and where you want  
it

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