

SPITFIRE WINGMAN

Use the powerful Spitfire Wingman to monitor and configure a network of Spitfire and Super Spitfire BPLMs from a PC on the surface

MONITOR

- See network structure of all Spitfire BPLMs at a glance
- Access key Spitfire performance metrics from the surface
- Get Spitfire status in installations where the Spitfire Remote Display cannot be used

CONFIGURE

- Configure repeater networks
- Assign user-friendly names
- Upgrade Spitfire software



SPITFIRE WINGMAN



SUPER SPITFIRE

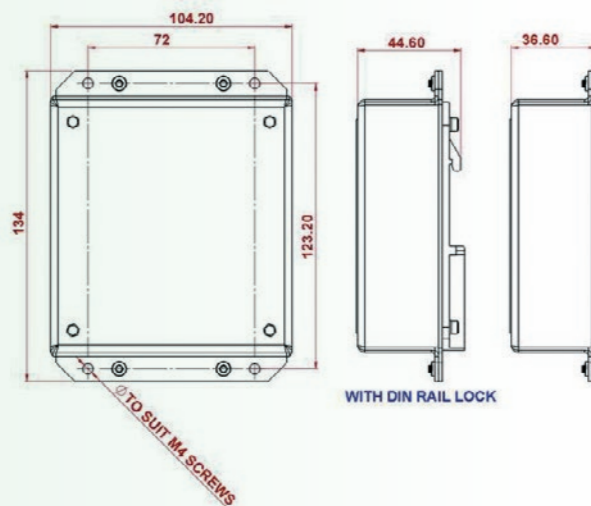
RECOMMENDED SPITFIRE COMPONENTS



We recommend the use of the Nautitech Capacitive Coupler, Isolation Barrier, and Ex d Power Line Bus Cables for optimum functionality of the Spitfire range and the Underground Internet of Things (UIoT).

Specifications & Dimensions

Supply voltage – DC power	10 to 28 VDC
Supply voltage – AC power	10 to 28 VAC
Supply voltage – PoE power	37 to 57 VDC
Supply power, typical	1 W
EtherNet	10BASE-T / 100BASE-TX Shielded RJ45
Operating temperature	0° to 60° C
EMC emissions	IEC 61000-6-4
EMC immunity	IEC 61000-4-2/3/4/5/6/8



NAUTITECH® Mining Systems is an Australian owned and managed company devoted to the design and manufacture of products that improve safety and productivity in hazardous areas.

Our key products dominate the markets they are in and include methane safety systems, broadband power-line modems and thermal or HD cameras.

Talk to us about the Methane Master, Spitfire modem range, I.S Cubex system, as well as 7" and 10" Displays.

Our engineers are experts at designing and developing products for Zone 0



GE Mining

CUSTOMER FEEDBACK

NAUTITECH® are the innovation leaders, they are always raising the bar in terms of safety and reliability.

Blake, GE Mining



The NAUTITECH® Spitfire power-line modem has proven itself to be ruggedized and reliable for our Australian applications together with the necessary level of technical support.

John, MD



We used to have ongoing problems getting comms from our DCB to our miner. Then we tried the Nautitech Spitfire BPLM and couldn't be happier with its performance and reliability.

Brad, EEM



SERVICE & SUPPORT

- ✓ CODE & AS3800 service
- ✓ NATA - CH4 sensor calibration
- ✓ Installation, repairs, maintenance & training
- ✓ Dossier audits & compliance checks for Diesel machines
- ✓ Audit, fault diagnosis, and repair of 3rd party installations
- ✓ Provision of manuals & quotes for new systems
- ✓ Full 2-Year Warranty

WE OFFER FULL PRODUCT LIFE CYCLE SUPPORT

To ensure product longevity, we recommend that you consult NAUTITECH® to ensure proper installation, cabling, configuration and training.

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UNDERGROUND INTERNET OF THINGS (UIoT)

by NAUTITECH®



Complete management of the UIoT with NAUTITECH®'s Broadband Powerline Modems

Monitor, diagnose, configure and update your equipment from the surface

SPITFIRE WINGMAN

SUPER SPITFIRE

SPITFIRE

- Monitors and configures Spitfire BPLMs from the surface
- Manages entire mine network when used in tandem with other diagnostic tools
- Easy to use web interface

- Interfaces with proximity detection systems
- Integrates with wireless access points
- Utilises existing trailing cable infrastructure
- Transmits live machine data to surface seamlessly
- High bandwidth – typically 40 - 90MBS
- Helps communication between equipment, surface and existing infrastructure
- Simple 'plug and play' installation

Pilot Cores (Power Line Comms)

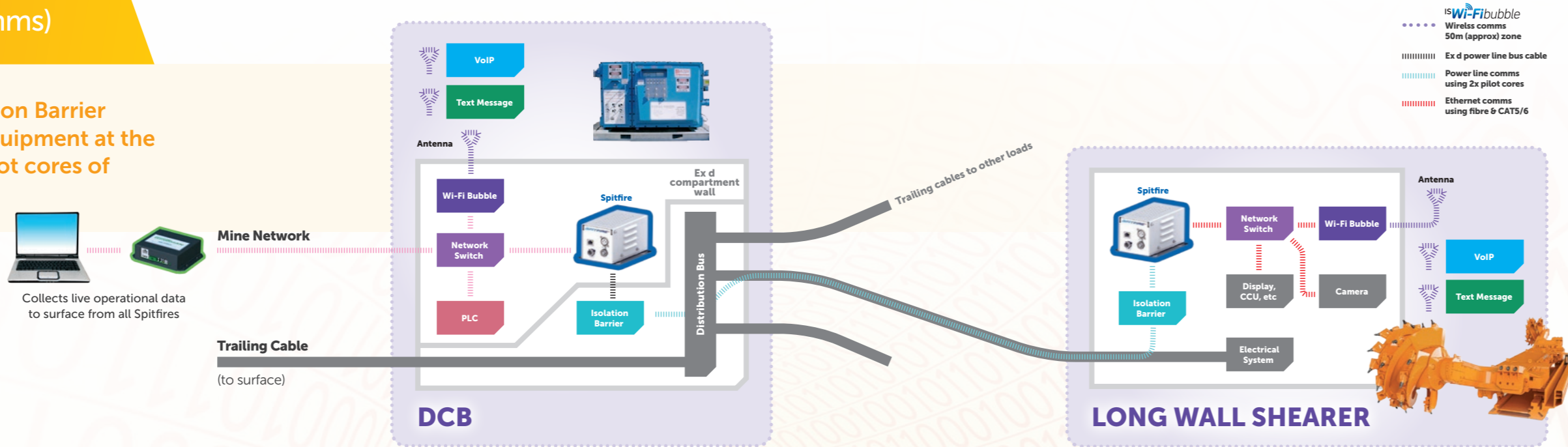
NAUTITECH®'s Spitfire & Isolation Barrier extend the mine network to equipment at the face by sending data on the pilot cores of the existing trailing cable

PILOT CORE PERFORMANCE

- Longwall shearer with 440 metre trailing cable in NSW Australia
- PHY data rate 115 Mbps
Ping time, typical 5 ms

REMOTE DISPLAY

- Provides colour LED indication of speed/activity for EtherNet and Power Line network ports
- Connects to Spitfire and SuperSpitfire



Isolation Barrier Isolation Barriers protect equipment from high voltages on the pilot cores in the event of cable failure

ISWi-Fibubble

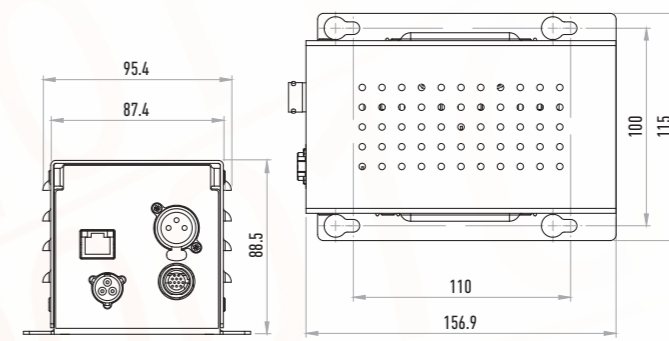
NAUTITECH®'s Intrinsically Safe Wi-Fi Bubble extends the wireless zone up to 50m radius outside an enclosure

In conjunction with Spitfire modems, the Wi-Fi Bubble enables text and voice communication between the surface and workers within the bubble

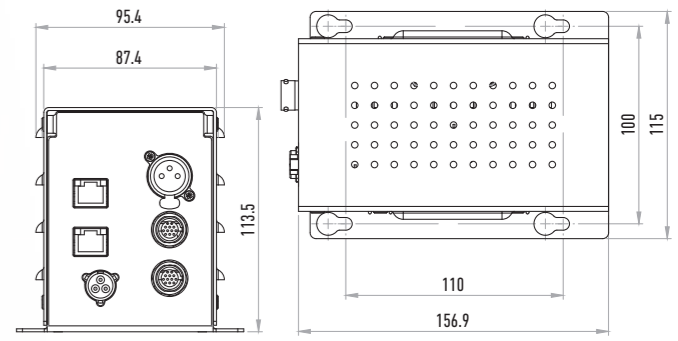
Technical Details

Dimensions

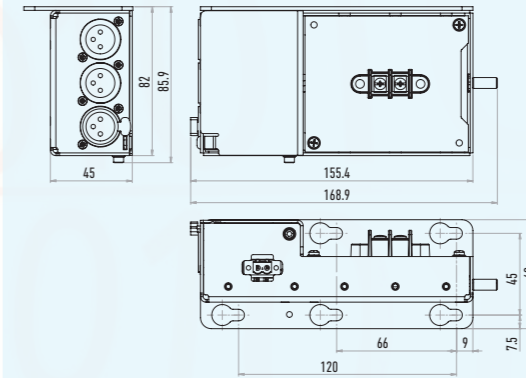
SPITFIRE®



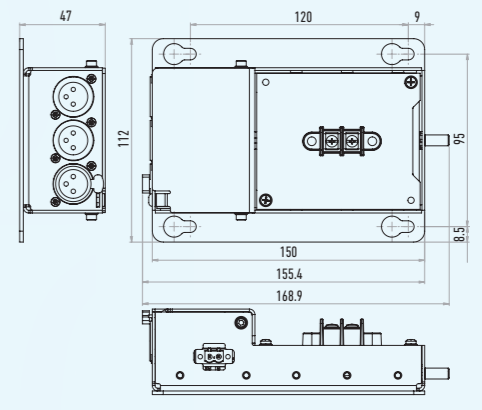
SUPER SPITFIRE®



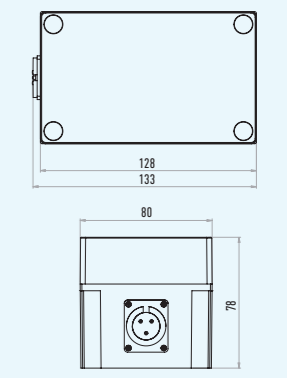
Isolation Barrier (Side Mount)



Isolation Barrier (Base Mount)



Capacitive Coupler

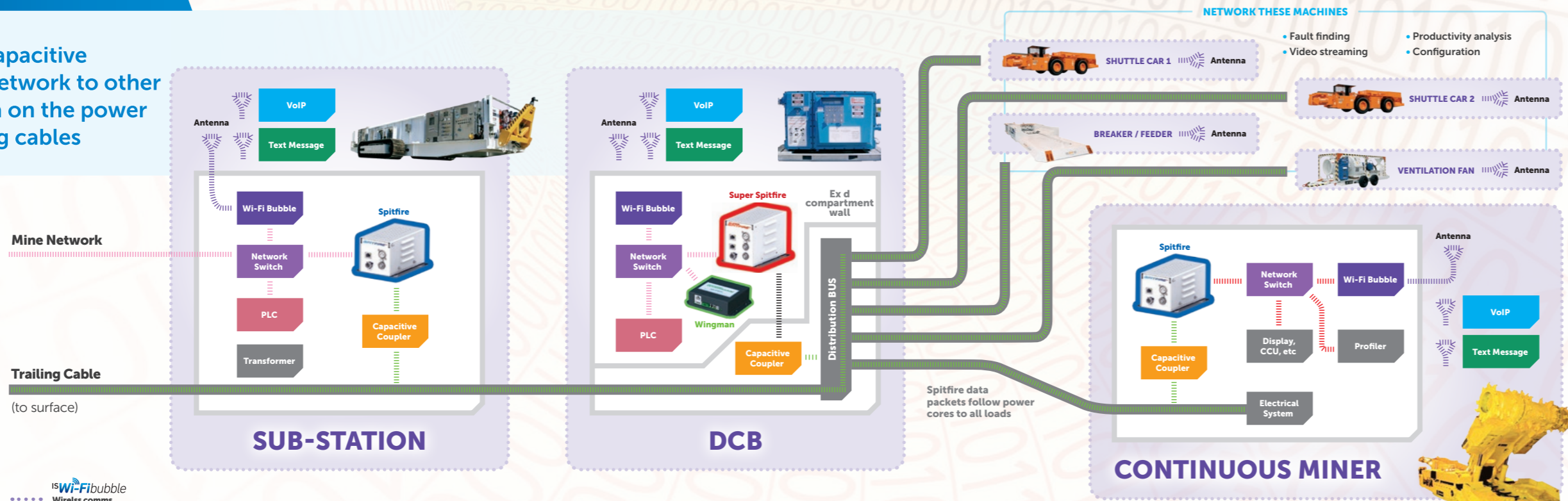


Power Cores (Power Line Comms)

NAUTITECH®'s Spitfire & Capacitive Coupler extend the mine network to other equipment by sending data on the power cores of the existing trailing cables

POWER CORE PERFORMANCE

- Power Line Comms over power cores is typically used in development sections
- Continuous miner with 400 metre trailing cable in NSW Australia
- PHY data rate 43 Mbps
Ping time, typical 6 ms

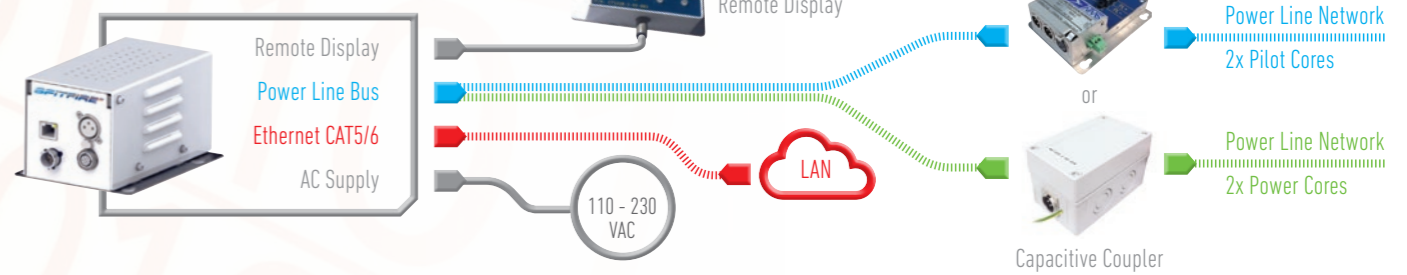


Capacitive Coupler Capacitive Couplers connect to power cores up to 7.2 kV (IEC 60071-1). Simply connect to same phases throughout the system. Spitfire is not sensitive to polarity of power line wiring.

SuperSpitfire SuperSpitfire acts as a repeater for Spitfire data packets between the sub-station and the load machines. If the mine network (fibre) is available at the DCB, SuperSpitfire is not required. Simply install Spitfire in DCB and loads.

Spitfire node configuration Install a Spitfire node in each load that requires network connection

Spitfire node configuration



Specifications

Supply voltage	85 to 264 VAC
Supply frequency	50 Hz, 60 Hz
Supply power, max	12 W
Ethernet interface	10BASE-T/100BASE-TX Shielded RJ45
Operating temperature	0 to 60 degC
Vibration	IEC 60068-2-6
Shock	IEC 60068-2-27
EMC emissions	IEC 61000-6-4
EMC immunity	IEC 61000-4-2/3/4/5/6/8

New from NAUTITECH®



Ex d power line bus cable
Ask us about our new power line bus cable which can pass between Ex d compartments