RFI TECHNOLOGY SOLUTIONS | DIGITAL DRIFT

Underground Communications & Data Solutions

Digital Drift. One System–Total Control

www.rfi.com.au

For years communications, power, and data systems in underground mining have seen little innovation. Traditionally relying on separate disconnected systems to provide power, data and communications, these systems are typically installed and maintained by different owners, with different components, topologies, demands and skill levels.

For example, underground communications is delivered via a legacy leaky feeder coaxial system with Line amps that struggle with the demands of modern, busy multi-carrier sites. Underground power is distributed as HV, meaning LV is scarce and not necessarily available when and where required. Data will be provided via fibre then distributed via switches and some access points providing hotspots. Scaling data connectivity is cumbersome and limited in range.

Digital Drift represents a step change in underground operations—a true plug-and-play solution that integrates LV power (including PoE), high-speed data (Wi-Fi/GbE), and high quality communications into a single, unified system.

Gone are the days of running and maintaining separate cables and systems for communication, control, and monitoring. With Digital Drift, mining operations can be seamlessly automated, managed and operated via a integrated solution.

The solution offers the benefits of quick deployment either from the headend or extending the last mile using existing infrastructure, it is easy to install with basic skills, any underground trade can do it.

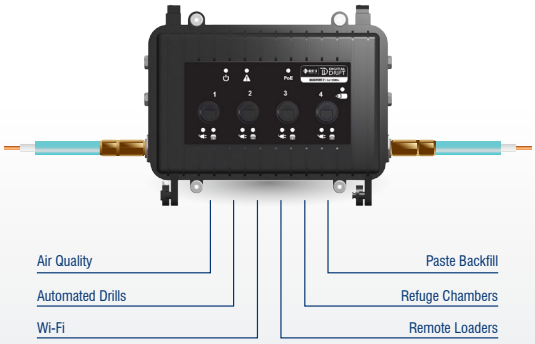
Since its inception, Digital Drift has demonstrated superior performance, delivering crystal-clear radio communication through RFI's cutting-edge LNA technology, robust gigabit Ethernet data, and ample LV power, allowing operators to monitor, switch, or control anything from a fan to heavy machinery.

Today, Digital Drift supports operations in mines around the world, offering a ruggedised, highly flexible solution that's easy to install, cost-effective, and built to last in the toughest conditions

What will Digital Drift offer you?

LOWER OPERATING COSTS	Reduce the need to manage and maintain separate fibre, power, and comms systems.
FASTER DEPLOYMENT	Dont wait for fibre or LV, install in hours, not days — ideal for dynamic or expanding operations.
IMPROVED UTILISATION	Keep equipment and personnel productive with reliable connectivity and power.
ENHANCED SAFETY & CONTROL	Utilize wifi or our BLE solution for tracking and refuge monitoring where needed.
FUTURE-PROOF INFRASTRUCTURE	Scalable and adaptable to monitoring and control technologies and/or automation needs.
INCREASED CONNECTIVITY	VHF or UHF communications, Wifi, Bluetooth, Ethernet and DC - We can cater for most operation needs.

4 innovative solutions that scale in connectivity, capability and efficiency



DD SERIES

Conventional System – Data only
Power, Gigabit Ethernet and PoE over Coax

Simple cheap alternative to running fibre and Low Voltage into permanent and temporary working areas

- Plug and play installation
- Wide operating voltage, self powered via DC over coax
- High speed GbE
- Low latency (<1ms)
- Add data points, WAP's or PoE and integrate with existing IP equipment
- Backhaul data via coax

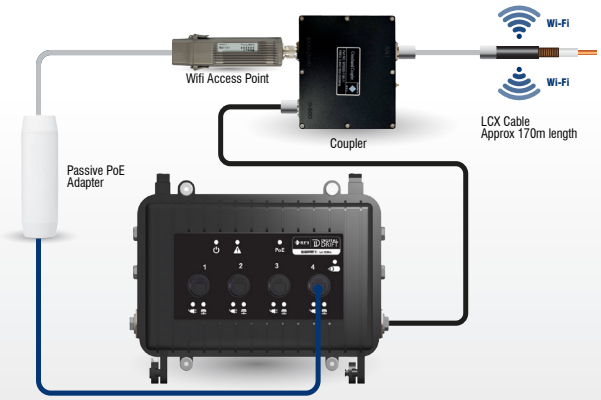
DDLFS SERIES

Leaky Feeder system - Data and communications
VHF or UHF Comms, Power & Gigabit Ethernet with PoE* over Leaky Feeder

Include all the features of the Conventional System and add 2 way communications

- Suitable for greenfield sites
- Drop-in replacement or extend existing systems
- Fully compatible with like competitor systems
- High performance Line Amplifier for UHF or VHF communications
- Data ports and PoE via Line Amp with Ethernet

* LAE requires PoE adaptor - sold seperately

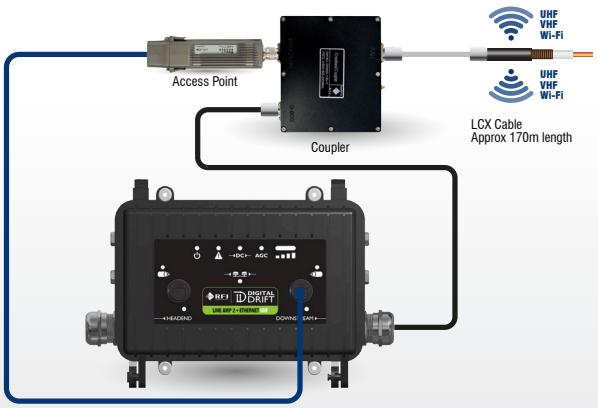


RADIATING WIFI OVER LEAKY FEEDER

Combine power and high speed data with Wifi over Leaky Feeder

Include all the features as above and add

- Ubiquitous Wifi coverage between AP's – provide 170m coverage per WAP
- No antennas required – Radiate Wifi with data backhaul on the same cable
- Compatible with exiting IP infrastructure
- No degradation of throughput over distance
- Provide ubiquitous wifi overage for SCADA, Remote contol, VOIP and more



FULL IMPLEMENTATION OVER LEAKY FEEDER

Combine VHF or UHF comms, power and data with Wifi over Leaky Feeder

Include all the features as above and add

- Ubiquitous coverage Wifi and VHF or UHF 2-way radio communications
- Compatible with existing communications infrastructure
- No degradation of throughput over distance

Active devices

QUADPORT

2 alternatives available

- Conventional System: provides inline 4 port ethernet switch with GbE high speed data over coax, and PoE.
- Leaky Feeder System: Can be spliced into a new or existing Leaky feeder system's coms cable to break out 4 x GbE PoE++ ports

REPEATER

- Provides the digital regeneration of the wideband data signal in conventional, data only, solution
- Acts as a domain master for each data segment in total system
- PoE ++, GbE

LINE AMP

Provides bi-directional amplification of the radio channels, while passing the broadband data signal with minimal loss.

- Available in VHF and UHF bands
- When complimented by the GMC, the self-learning gain algorithm continually adapts to maintain consistent output levels in response to changes in multi carrier leaky feeder systems.

LINE AMP + ETHERNET

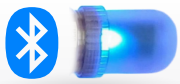
Provides all of the LineAmp features, plus a fully-featured Digital Drift Repeater. This enables:

- Data to be bridged onto and off the leaky feeder cable through the built-in RJ45 ports
- Digital re-generation of the data signal, maintaining high data speeds over the network

GAIN MANAGEMENT CONTROLLER

- Superior automatic gain control
- Gateway for Bluetooth functionality, tagging and tracking
- System monitoring gateway

Add-on



BLUETOOTH MODULE

- Plug and Play add on to all DD
- Access realtime monitoring of DD products
- Use for location tracking
- Use for tag reading to track equipment or personnel

Passive devices

SPLITTER

DDLFS Series splitter, evenly dividing the radio and the broadband data signal.

POWER COUPLER

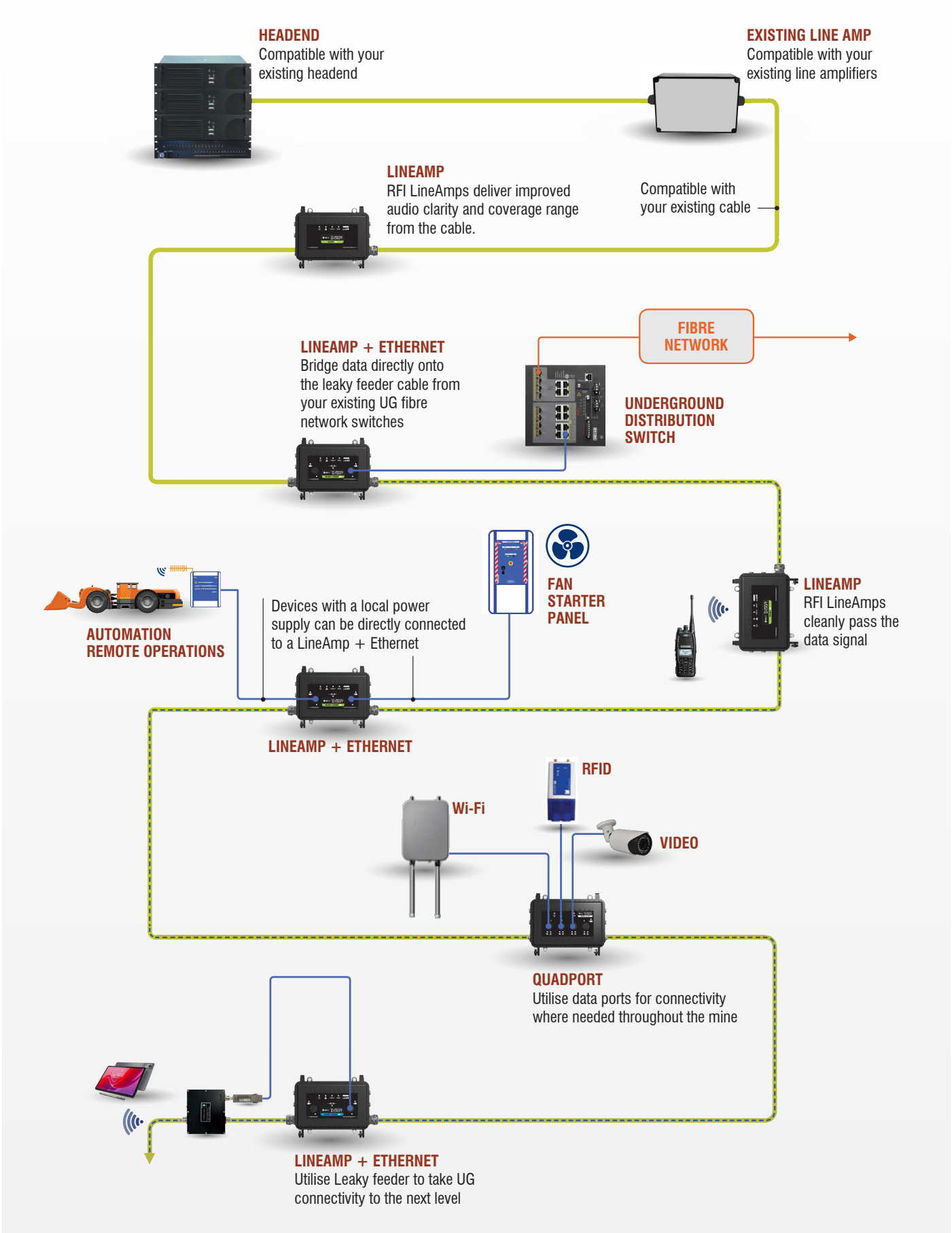
Inject DC at any point in the leaky feeder cable to supply the Digital drift system and its peripheral devices.

UNIVERSAL JOINER

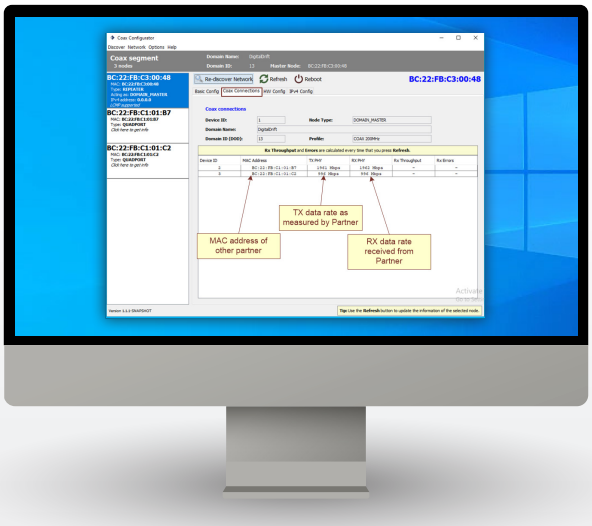
The Universal Joiner can join 75 Ohm coax with DC pass or terminate with DC block.

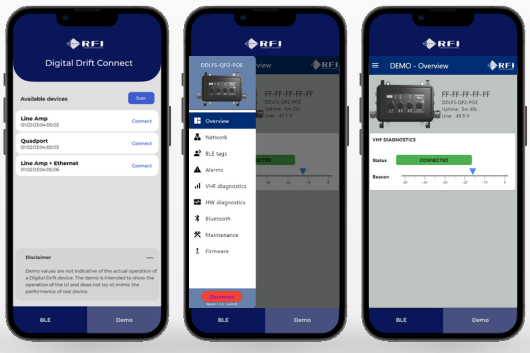
What does it look like

EXAMPLE TOPOLOGY



Software





COAX CONFIGURATOR
Remote network management

- Simply plug into DD network
- System discovery: Device names (set by user) will be displayed
- Simple and expert versions available
- Remotely monitor and Configure
  - » IP address and gateway
  - » VLAN
  - » Hardware setup and device roles
  - » Firmware upgrades
- And more

Available as Windows application

DIGITAL DRIFT CONNECT
Diagnostics

Interrogate and fault find products directly.

- Connect to DD device
- Monitor alarms
- Monitor RF
  - » Freq
  - » Power UL/DL
  - » Gain
  - » Beacon
- Hardware diagnostics
  - » Voltages
  - » Power
  - » Current
- Bluetooth and Beacon setting

Available as windows and mobile applications (android available, iOS coming)

Scan QR code to download Digital Drift Connect App including a demo

Applications

Underground Comms
UHF or VHF Comms

Instrumentation & Control
Fan starters, pumps

Wi-Fi Connectivity
FMS, task mgmt & IP Telephony

Video Surveillance
Paste fill, ore passes, fixed plant monitoring

Tele-remote & Autonomous machines
RCT, Caterpillar & Sandvik

Asset Tracking
BLE, MQTT

Digital Drift Range

	Line AMP 2	Line AMP 2 + Ethernet	Quadport 2 (VHF + POE)	Repeater	Splitter	Power Coupler	Gain Management
CONVENTIONAL			 DD320-QP2-POE	 DD320-RP2-POE	 DD210-SP-S	 DD320-PC	
LEEKY FEEDER VHF	 DDLFS-LA2-V75	 DDLFS-LAE2-V75	 DDLFS-QP2-POE		 DDLFS-2S-V75	 DDLFS-PC-V75	 DDLFS-GMC-V
LEAKY FEEDER UHF	 DDLFS-LA2-U50-B1	 DDLFS-LAE2-U50-B1	 DDLFS-QP2-POE-U50		 DDLFS-2S-U50	 DDLFS-PC-U50	 DDLFS-GMC-U

Note: Wifi can be implemented in any of the above systems, with the addition of compatible components such as splitters, couplers and respective coax.

Speak with your local RFI representatve for more info.

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Scan QR code for more information
or visit Digital Drift website https://bit.ly/3HVGbZz
or call us on 1300 000 734