MINE SITE TECHNOLOGIES

INFINITY SERIES 2

# VDV

Leaky Feeder Radio System


Quality underground
line amplified communication systems

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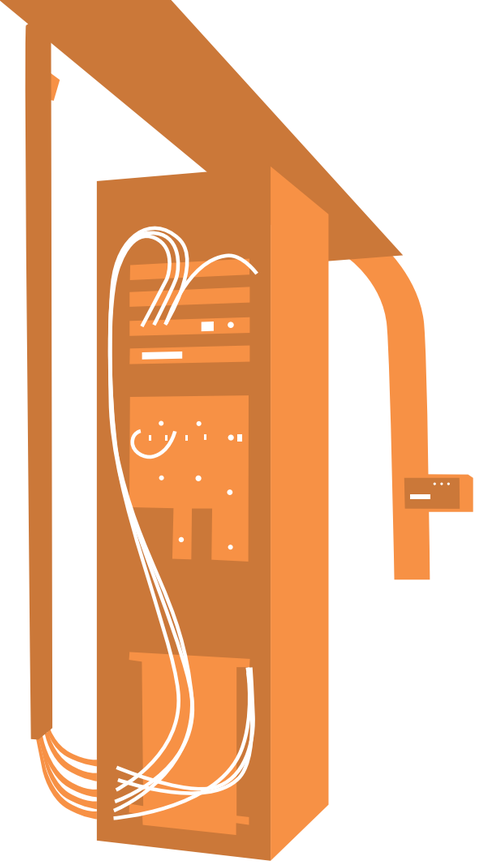
# VDV

## Leaky Feeder Radio System

The VDV System delivers a reliable, easy to maintain two-way radio system to your mine. The productivity and safety benefits associated with a VDV installation make VDV a cost effective solution to your underground communication and telemetry requirements.

### 8 & 16 CHANNELS EXPANDABLE

This allows for system expansion in blocks of 8 channels as your needs grow.

### NOISE FREE

The MST VDV system is virtually noise free and is impervious to HV power or other electrical interference.

### TELEMETRY - DUPLEX VOICE & DATA CAPABLE

System is capable of both voice and data communication on all channels, simultaneously, allowing telemetry control of remote equipment. Unlike other systems, VDV can be used for full telemetry control of underground equipment. MST's experience in designing and installing telemetry systems, at a range of mines, ensures the system will operate as specified.

### LOCAL & REMOTE PC BASED DIAGNOSTICS

Infinity 2 Diagnostics allows mine personnel to view the system condition and each amplifier from the comfort of the office or workshop. The system reports on RF levels and voltages present.

### VIDEO

Depending on the system configuration VDV is capable of transmitting video.

### BUILT IN VOLTAGE REGULATORS

Every active device in the distribution system is fitted with a DC voltage regulator and filter. This enables the amplifier chain to compensate for voltage irregularities throughout the system.

### DESIGNED & MANUFACTURED BY MST

Being designed and manufactured by MST allows for excellent levels of support and commitment to on-going Research and Development.

The Headend distribution panel is fitted with 4 output feeders, each of which is capable of driving a minimum of 5 km of feeder without the need for additional supply units.

### COMPATIBLE WITH MOST EXISTING SYSTEMS

The amplifiers have been designed to perform equally as well with other suppliers' systems. This allows customers to source VDV equipment to suit an existing system.

### AUTOMATIC LEVEL CONTROL

ALC allows the system to be unbalanced and still operate to maximum specification, even when the cable attenuation is inconsistent, this is achieved by either down link or up link pilots tones or a combination of both.

### MODULAR AMPLIFIER CONSTRUCTION

As the amplifiers are modular in construction, installation and service time is greatly reduced.

### SUBMERSIBLE HOUSINGS & TERMINATIONS

The amplifiers have been designed for the harshest of environments, from high pH levels to extremely dusty and wet exposure.

The amplifiers and terminations are submersible up 1m. The amplifiers are also RF shielded for protection in electrically noisy environments.

### COAXIAL AMPLIFIER TERMINATIONS

Having bolt on submersible connectors eliminates exposed cable within the amplifier enclosure. Also negates the need to expose the amplifier during installation.


### TOTAL COMMUNICATIONS

The high reliability and quality of the VDV Leaky Feeder ensures voice and data communication will enhance any operation.

### MINES

VDV provides two-way communication for your voice and data requirements. The true multi-channel performance ensures the optimum combination of voice & data signalling can be achieved to better manage your mine.

### TUNNELS

The simplicity of installation will mean VDV can provide a powerful project management tool. Two way voice communication between tunneling crews, loco drivers, etc, and data logging from TBM's, etc, throughout the tunnel length will assist in the tunnel development and be available for use by the tunnel operator, if required.

### BLASTING

BlastPED allows for remote blasting commands to be sent through the VDV Leaky Feeder System. The same proven safety protocols as used in the PED version are utilized in the VDV version.

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## VDV HEADEND UNIT SPECIFICATIONS

| | |
|---|---|
| CHANNEL CAPACITY (Voice/Data) | |
| Combiner | 8 channel increments |
| Combiner Splitter | 16 channel |
| INSERTION LOSS | |
| Tx. Junction to Leaky Feeder | 38dB max. |
| Leaky Feeder to Rx. Junction | 23dB max. |
| RF DRIVER LEVELS | |
| RF Driver Level @ Tx. Port | +40dBm |
| RF Signal Level @ Leaky Feeder | +2dBm |
| CONNECTIONS | |
| Rx. Junction Connection | TNC Female |
| Tx. Junction Connection | TNC Female |
| Leaky Feeder Connection | "N" Female |
| IMPEDANCES | |
| Rx. Junction Connection | 50 ohms |
| Tx. Junction Connection | 50 ohms |
| Leaky Feeder Ports | 75 ohms |
| ISOLATION | |
| Between Rx. Ports | 20dB min. |
| Between Tx. Ports | 20dB min. |

## PILOT TONE GENERATORS

| | |
|---|---|
| CHAIN PILOT GENERATOR (Agile) | |
| Direction Optional as Uplink or Downlink | |
| Operating Frequency | PC Adjustable in 12.5 KHz steps |

## DIAGNOSTICS CIRCUITRY (AGILE)

| | |
|---|---|
| Operating Frequency | 168-186 MHz PC Adjustable in 12.5 KHz steps |

## LINE AMPLIFIER UNIT SPECIFICATIONS

| | |
|---|---|
| Frequency Band | VHF Spectrum |
| Frequency Split | 9.5 MHz |
| Pass Band | 177 MHz ± 9 MHz (Uplink - return path) 152 MHz ± 7 MHz (Downlink - forwd. direction) |
| Amplifier Gain | 22dB nom (forwd. & retn.) |
| Construction | Surface Mount Tech. |
| Gain Adjustment | Auto (ALC) |
| AGC Range | 20dB |
| In/out Impedance | 75 ohms |
| Suggested Amplifier separation | 350 metres |
| Third order intercept | Forward 15dBm Return 16dBm |
| Operation Voltage | 32 – 7 volt DC |
| Maximum Line Current | 5 amperes |
| Power Consumption | 1.2 watts |
| Nominal RF Input Level | Forward -15dBm Return -16dBm |
| NOMINAL CURRENT Amplifier module (VCC = 5 VDC.) | 100 mA typ. |
| RF LEVELS Base Port O/P level | Return 0dBm max. Forward 1dBm max. |
| ENCLOSURE Construction | Submersible Cast CATV |
| Size | 6in x 3.5in x 2.5in (130mm x 90mm x 60mm) |
| Termination | CATV through-pin connector |



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