



INFINITY SERIES 2

# VDV

Leaky Feeder Radio System



Quality underground  
line amplified communication systems

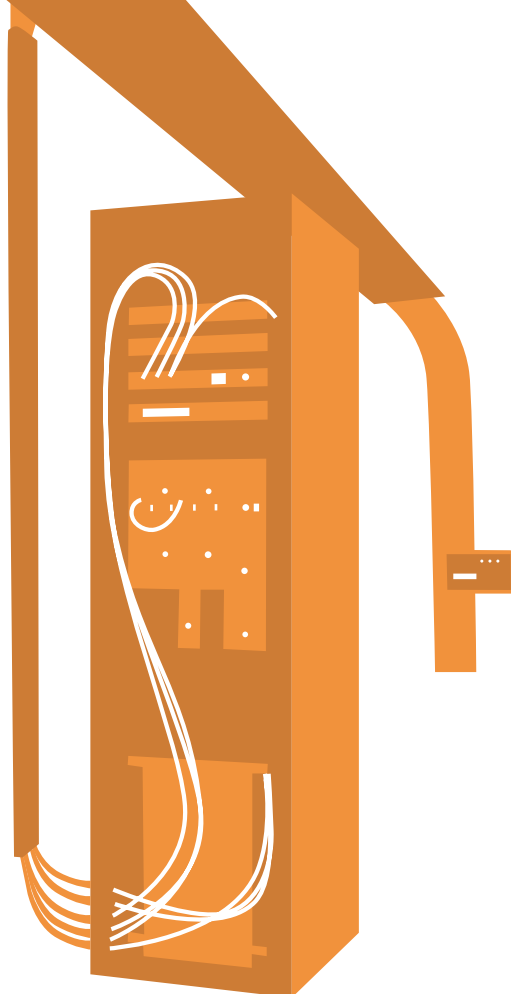
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# VDV

## 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.

# TECHNICAL SPECIFICATIONS

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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  $\pm$  9 MHz  
(Uplink - return path)  
152 MHz  $\pm$  7 MHz  
(Downlink - forwd. direction)

Amplifier Gain 22dB nom (forwd. & retr.)  
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 130mm x 90mm x 60mm  
(6in x 3.5in x 2.5in)  
Termination CATV through-pin connector



## MINE SITE TECHNOLOGIES PTY LIMITED

ABN 93 002 961 953

### SYDNEY

25-27 Whiting Street  
Artarmon NSW 2064 Australia  
PO Box 156, Artarmon 1570  
Tel: +61 2 9437 4399  
Fax: +61 2 9437 5688  
mst@minesite.com.au

MST Offices also located in Sudbury, Canada and St Louis, USA

### KALGOORLIE

17 Darcy Lane  
West Kalgoorlie WA 6430 Australia  
PO Box 4200, Kalgoorlie 6430  
Tel: +61 8 9022 2300  
Fax: +61 8 9022 2311  
mstwa@minesite.com.au

### MOUNT ISA

15 Duke Street  
Mt Isa QLD 4825 Australia  
PO Box 2436, Mt Isa 4825  
Tel: +61 7 4749 4922  
Fax: +61 7 4749 4933  
mstisa@minesite.com.au

### MACKAY

Tel: +61 408 656 860  
Fax: +61 7 4954 3999  
mst@minesite.com.au

[WWW.MINESITE.COM.AU](http://WWW.MINESITE.COM.AU)

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