

# Smart Com Leaky Feeder Networks

NIOSH Workshops May 2009

# Smart Com Family

## Smart Com 150



*VHF Radio +  
Ethernet network.*

240 systems  
commissioned  
worldwide since 1997.

## Smart Com 150IS



## Smart Com 450



*UHF Radio +  
Ethernet network.*

3x more range than  
VHF, at 3x the cost.

## Smart Com 450IS



# Maintainability

All Smart Com amplifiers come standard with Local & Remote Diagnostics and Automatic Gain Control (AGC).



BRANCH	Location	Down	RSSI	Atten	Mode	VDC	Report
▼ 100.0.1		-4	-40	6	Auto	10.1	0 mins
▼ 100.0.2		-4	-40	6	Auto	10.1	0 mins
▼ 100.1.1		-4	-40	6	Auto	10.1	0 mins
▼ 100.1.2		-4	-40	6	Auto	10.1	0 mins
▼ 100.1.3		-4	-40	6	Auto	10.1	0 mins
BRANCH 2	Contains 0 amplifiers						Add Amp
BRANCH 3	Contains 0 amplifiers						Add Amp
BRANCH 4	Contains 0 amplifiers						Add Amp
UNASSIGNED AMPLIFIERS	Contains 0 amplifiers						Add Amp
ETHERNET	Contains 0 ethernet devices						Add CMTS

Messages	Show All	Date/Time	Type	ID	Value
[1784]	High voltage alarm	Thu Apr 9 14:51:44	High Voltage	100.1.2	17.2
[1782]	High voltage alarm	Thu Apr 9 14:51:42	High Voltage	100.1.3	17.2
[1786]	High voltage alarm	Thu Apr 9 14:51:41	High Voltage	100.1.1	17.2
[1942]	High voltage alarm	Thu Apr 9 14:51:38	High Voltage	100.0.2	17.2

# Permissibility

## Smart Com 150IS



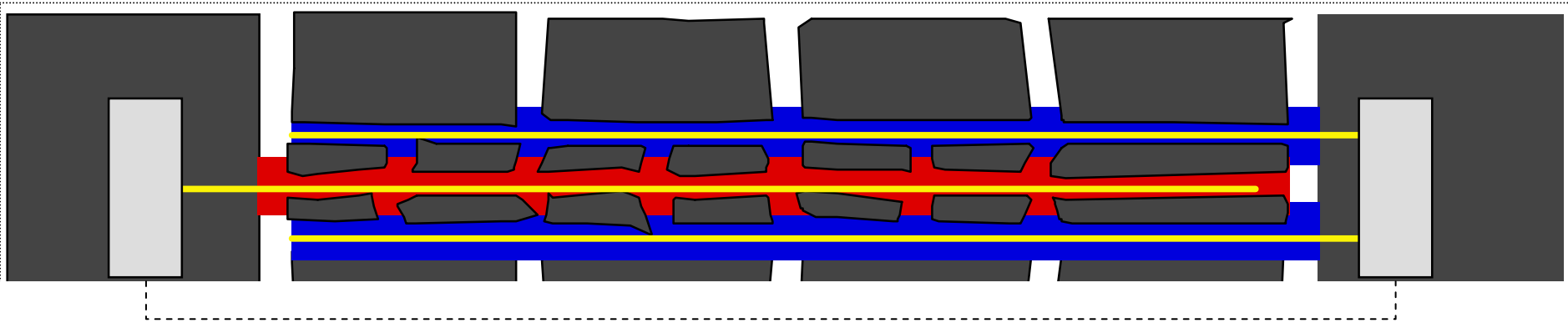
- MSHA C.F.R. 30 part 23 approval 23-A050001-0 March 8, 2005.
- Over 60 Part 23 approved systems operating in US coal mines.
- 24 hour battery backup with Control PS-1558A 33 Ah UPS.

## Smart Com 450IS



- Approval in progress, target date 4Q 2009.
- 24 hour battery backup with Control PS-1558A 33 Ah UPS.

# Redundancy



Install two Base Stations with identical voice channels, linked to each other by fiber, Internet or surface radio.

-Miners can move through stoppings from one coverage area to the other while maintaining communication.

-In the event of a branch failure, miner moves to unaffected area to communicate.

# Single Cable Survivability

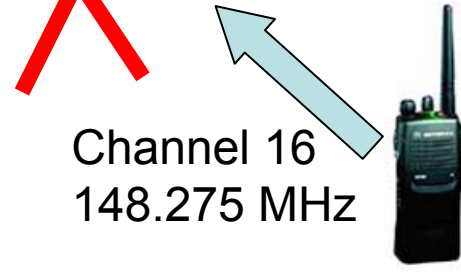
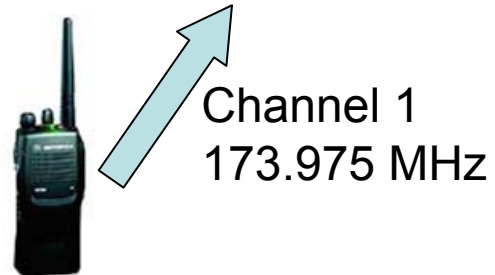
Link Primary Base Station Channel 1 with  
Secondary Base Station Channel 16  
using UHF Radio, Fiber or IP Link

**Primary**

**Secondary**



Channel 1 ← **INVERSE** → Channel 16  
Tx 148.275 MHz Tx 173.975 MHz



# ***Varis Mine Technology Ltd.***

*(a division of Becker Mining Systems)*

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**VARIS** SMART UNDERGROUND  
COMMUNICATIONS

**Smart Com Leaky Feeder networks**