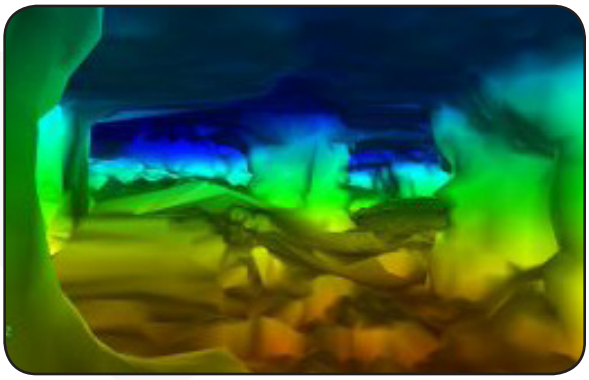
COMTROL'S DEVICEMASTER FREEWIRE COMMUNICATES WIRELESSLY TO A RUGGEDIZED UNDERGROUND 3D LASER SCANNER

Since 1978 the Mine Safety and Health Administration (MSHA) has been protecting miners' safety and health by requiring mining operations to comply with mandatory national safety standards.



One part of these standards defines the proximity that miners can be to a void in the ground after mining has been completed. These voids can be very hazardous locations. The need to know the volume and layout of these voids is critically important in order to accurately refill them and ensure safety after the mining operation is complete.

MDL is a Scottish designer of laser measurement technology and provides eye-safe laser based measurement systems created to assist in safety identifying and filling mining voids. The Void Scanner, VS150, is a cavity monitoring system specifically designed to facilitate boom deployment into stopes, cavities, manholes and bunkers. This allows operators to see a 'real-time' 3D view of the data generated by the VS150. The information obtained from this reading is used to determine the amount of material needed to fill a void that was created from mining.

An added complexity to successful deployment of the VS150 system is that many of MDL's customers need to have the information relayed over a distance to a safe mining location. Because these systems are often deployed into hazardous locations inaccessible to people, there was a need to create a wireless RS-232 link from the monitoring location to the VS150 scanner.

After testing many different wireless products, MDL chose to implement Comtrol's DeviceMaster FreeWire product for the VS150 mining application. With the advanced features that the FreeWire had to offer, it was a clear choice. They are now able to communicate wirelessly to the VS150 scanner from a remote location that provides a much safer environment for the workers.

Continued on back

DEVICEMASTER FREEWIRE SPECIFICATIONS

HARDWARE

Bus Interface Specification

Enclosure	Metal IP40 Rating
Installation Method	Panel Mounting
LED Indicators	Power, 10Mbps, 100Mbps
Dimensions	
4.95" x 0.95" x 2.96"	
Product Weight	.76 lbs

ELECTRICAL SPECIFICATIONS

Device	
DC Input Voltage	4.75 - 5.25 VDC
Current Consumption	
+5VDC	600 mA
Power Consumption (max)	3 W
Comtrol External Power Supply	
Output Voltage	5VDC
Output Current	
+5VDC	2.5 A
Line Frequency	50/60 Hz
Line Voltage	100-240 VAC
ESD Surge Protection	
Provides minimum of 15KV protection for all serial lines	

ENVIRONMENTAL SPECIFICATIONS

Air Temperature	
System on	0° to 50° C
System off	-20° to 70° C
Operating Humidity	
Non-condensing	10% to 90%
Altitude	0 to 10,000 Feet
Heat Output	10.24 BTU/Hr

SERIAL COMMUNICATIONS

Connector Type	DB9 Male
Supported Standards	RS-232
Baud Rates	300 to 921 kbps
Receive Buffer	1,024 Bytes
Transmit Buffer	4,096 Bytes
Device Driver Data Control	
Data Bits	7 or 8
Parity	Odd, even or none
Stop Bits	1 or 2
Flow Control	Hardware or Software

NETWORK SPECIFICATIONS

Ethernet Interface	10/100 Base-T
WLAN/Ethernet Protocols	
802.11g, ARP, TCP, Telnet, ICMP, SNMP, DHCP, BOOTP, Auto IP, HTTP, SMTP, TFTP, SLP, DNS, Dynamic DNS, RFC2217, WLAN roaming	
Wireless Security	
WPA and WPA2 (personal and enterprise modes), PAP, MS-CHAPv2, 802.1x EAP with TLS/TTLS/LEAP/PEAP/FAST, WEP	
Data rates with automatic fallback	
54MBPS, 48MBPS, 36MBPS, 24MBPS, 18MBPS, 12MBPS, 11MBPS, 9MBPS, 6MBPS, 5.5MBPS, 2MBPS, or 1MBPS	
Frequency Range	2.4 GHZ ISM Band
Operating Range	100 m
Transmitter Output	
802.11g mode	
Channel 2-10, 12, 13	15 dBm
Channel 11	14 dBm
Channel 1	12 dBm
802.11b mode	
Channel 14	14 dBm
Reciever Sensitivity (PER <10%)	
11g:	
54Mbps	-68 dB Min
48Mbps	-68 dB Min
36Mbps	-75 dB Min
24Mbps	-79 dB Min
18Mbps	-82 dB Min
12Mbps	-84 dB Min
9Mbps	-87 dB Min
6Mbps	-88 dB Min
11b:	
11Mbps	-82 dB Min
5.5Mbps	-84 dB Min
2Mbps	-86 dB Min
1Mbps	-88 dB Min
External Antenna Type	
Detachable RP-SMA connector with dipole swivel 2.0dB gain	
Operating Mode	
Infrastructure, ad-hoc	

REGULATORY STANDARDS

Emissions
- European Standard EN55022
  - EN 301 489-1
  - EN 301 489-17
  - EN 300 328
- FCC Part 15 Subpart B and Subpart C: Class B limit AS/NZS 4268
  - CISPR 22 Class B limit

Immunity
- EN55024:
- IEC 1000-4-2/EN61000-4-2: ESD
- IEC 1000-4-3/EN61000-4-3: RF
- IEC 1000-4-4/EN61000-4-4: Fast Transient
- IEC 1000-4-5/EN61000-4-5: Surge
- IEC 1000-4-6/EN61000-4-6: Conducted Disturbance
- IEC 1000-4-11/EN61000-4-11: Dips and Voltage Variations

Safety
- IEC 60950/EN60950
  - CSA C22.2 No. 60950/UL 60950 Third Edition

Other
- European Standard: RoHS 2 compliant under CE.

REGULATORY APPROVALS

MANAGEMENT AND UTILITIES

Serial Port Emulator Software
Management Utility
Web Browser Interface
Console Accessible Via Serial Port or TELNET
Simple Network Management Protocol (SNMP)
- MIB I and II; IP

Firmware Downloads Via TCP/IP (master mode tftp, slave mode TFTP, or BOOTP)
On-line HELP

EXPORT INFORMATION

Packaged Shipping Weight	2.13 lbs
Packaged Dimensions	
10.25" x 7.5" x 3.375"	
Country of Origin	Japan
ECCN	5A992
Schedule B Number	8473.30.1180
FCC License Number	N6C-SX10WG

FEATURES

SNMP Support
RoHS Compliant
2-Year Warranty

COMTROL®

Warranty Information
Comtrol offers a 30-day satisfaction guarantee and 5-year limited warranty.

Sales Support
+1.763.957.6000
sales@comtrol.com

Technical Support
+1.763.957.6000
www.comtrol.com/support

Email, FTP, and Web Support
info@comtrol.com
ftp.comtrol.com
www.comtrol.com