



**SMART
UNDERGROUND
COMMUNICATIONS**



**SMARTBLAST[®]
REMOTE
FIRING DEVICE**

- Two-Way Communications
- Safe, Reliable and Cost Efficient
- Electric and Shock Tube Detonation
- Automatic Disarm with Timer
- VHF, UHF & LTE Options

SMARTBLAST® OVERVIEW

Improved Safety. Improved Productivity. Reduced Cost.

smartblast® works in conjunction with a mine's Leaky Feeder system or LTE network to safely provide full, two-way blast control for underground and surface applications. It utilizes technology that has over 15 years of military and commercial experience to provide safe, reliable and cost efficient blasting in the tunnelling and mining sectors. smartblast® allows you to initiate blasts far away from the blasting site for increased safety.

smartblast® uses the latest microprocessor and message encoding/validation technology that has been combined to provide a safe, reliable and accurate remote firing device. Smartblast® has a versatility and reliability not before seen in initiation systems.



SAFETY

smartblast® has reduced misfires which means reduced risk entering charged stopes. Furthermore, two-way communication between the Controller and the Remote(s) confirms status before and after the blast has been initiated. Finally, initiate blasts from a safe distance underground or on surface. For example, you can initiate the blast from the refuge station after you have confirmed that everyone is safe and accounted for.

PRODUCTIVITY

Because smartblast® has reduced misfires, it eliminates production delays. Since it is completely portable, there is no waiting when setting up secondary blasts. Also minimize ground stress by initiating face blasts in any sequence.

REDUCED COST

Hard-wired Central Blasting systems and VLF initiation systems are expensive to install and maintain. Since smartblast® works in conjunction with a mine's existing Leaky Feeder network there is no additional infrastructure required and less blasting wire needed. Payback can be measured in weeks, not months.



RB1670

The smartblast® RB1670 has the capability to initiate non-electric shock tube, as well as standard electric blasting caps. The system can be used repeatedly throughout an operation and will give an "answer back" or confirmed status of all or any one of the Remotes. The Remotes can be held in the standby (not armed) mode for up to 12 hours and still maintain the energy to initiate the shot. The RB1670 includes redundant internal safety circuitry and a timed automatic disarming feature. If the Remotes do not receive a properly addressed firing signal within 2 minutes of being armed, the system will automatically return to the disarmed state.

The RB1670 has a versatility and reliability not before seen in initiation systems. The unique design offers the versatility of commanding 1 to 8 Remotes with a single Controller. The Remotes can be individually selected, armed, fired and interrogated for status via the keypad on the Controller.





RB1673 & RB1675

The RB1673 is the VHF version of the system while the RB1675 introduces LTE communication to the smartblast® product line and is available in LTE Cat-M or Cat-1. The RB1673 & RB1675 work on different communication infrastructures but both systems offer the same features.

Controller Unit that is capable of commanding up to 64 Remotes that can be either electric or non-electric, in 8 Remote groups.

A history event log keeps a record of information such as unit state, post blast motion detect value, firing voltage level, battery level and the date and time the event was logged.

Each Remote unit has a sensor that measures the seismic motion that may be expected when a successful blast detonation has occurred. The Controller unit then reports that a post-fire motion was detected, useful in underground operations when the successful initiation of a blast cannot be easily determined.

The automatic-disarming function ensures that the unit returns to a safe state in the event of a loss of communications, after a time out period.

The Sequential Fire feature allows the user to space the firings of each Remote unit so that they do not fire at the same time, 0-2 seconds between the firing of each Remote. This feature is particularly useful when firing multiple blocks where a delay is needed between each block.

The RB1673 has increased firing capacity. A minimum of 350V, allowing for approximately 75 electric caps in series, or a maximum circuit resistance of 150Ω



CHARACTERISTICS

All system cases are watertight and have a vent for pressure equalization. The electronics have been specially mounted to help prevent damage from shock and vibration from blasting, transportation and mishandling.

The RB1670, RB1673 & RB1675 are equipped with sequential firing, a 1-5 mile range (LOS) and a rechargeable NiMH battery. On each Controller there is an interactive keypad, polls and displays for status of all Remotes and transmit and confirmation indicators.

UPGRADING

With the RB1673 series up to 64 Remotes can be tied into one Controller, eliminating the need for multiple Controllers. There is also a PC based smartblast® Controller available to upgrade existing RB1670 series users. Capable of electronic and shock tube detonation, smartblast® enables all personnel to be on surface and out of harm's way during blasting. smartblast's cost savings can be measured in reduced maintenance alone as it eliminates the need to maintain a separate central blast cable system. Just maintain one system, your existing Leaky Feeder and initiate safely with smartblast®.



RB-1670

RF DATA	
Carrier Frequency	VHF - 148 to 174 MHz; UHF - 450 to 470 MHz
Frequency Stability	± 3 ppm
Modulation	(FSK)
Transmit Power	1 - 5 Watts
Operating Voltage	12 Vdc
Transmission Range	1 - 5 miles*
Receiver Sensitivity	12 dB SINAD:<0.45uV
Fire Output (Electric)	27 volts (1.2 joules)
Fire Output (Non-Electric)	2.5 kV (0.625 joules)

RB-1673

RF DATA	
Carrier Frequency	150-174 MHz
Frequency Stability	±1.5 ppm
Modulation	11K2F3D (FSK)
Transmit Power	1 - 5 Watts
Operating Voltage	7.5 Vdc
Transmission Range	1 - 5 miles*
Receiver Sensitivity	12 dB SINAD:<0.45uV
Fire Capacity (Electric)	150 ohms; (350 volts @ 5 joules)
Fire Output (Non-Electric)	2.5 kV (0.6 joules)

RB-1675

LTE Data	
LTE-M Bands	1, 3, 5, 8, 18, 19, 20, 25, 26, 28, 39
LTE-Cat 1 Bands	1, 2, 3, 4, 5, 7, 8, 12, 13, 18, 19, 20, 25, 26, 28, 38, 39, 40
LTE-M Data Rates	Max 350 Kbps up/down
LTE Cat 1 Data Rates	Max 10 Mbps down Max 5 Mbps up
Operating Voltage	7.5 Vdc
Transmission Range	Subject to LTE coverage
Fire Capacity (Electric)	150 ohms; 350 volts (1.2 joules)
Fire Output (Non-Electric)	2.5 kV (0.625 joules)

* Line-of-sight. Typical transmission range based on power level, frequency, terrain, and local interference.

Technical data are limit values.

If the product is integrated into systems or operated in combination with other devices, its permissible operating values can deviate from these limit values. Subject to technical modifications without prior notice.

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