

# ROTHENBUHLER 1678 REMOTE FIRING DEVICE

The 1678 Remote Firing Device is designed with the same solid performance and excellent reputation as the 1669 model. Smaller and more compact, the Mini Controller fires up to four remotes, built with hard anodized, extremely tough and corrosion resistant cases. The increased firing capacity, user replaceable smart battery system and brighter LEDs with a dim setting are just a few of the enhanced features this new design offers.

The Rothenbuhler 1678 Remote Firing Device (RFD) is an intelligent and discrete 2-way controlled initiation system used on land as a primary firing mechanism to detonate explosive charges. The Remotes respond only to commands transmitted from a similar digitally encoded (addressed) Mini Controller. The RFD's unique and field proven design will only allow a system with the correct "address" to interrogate and actuate the Remotes. The latest microprocessor and message encoding/validation technology (CRC-32) has been combined to provide a safe, reliable, accurate, and compact tool.

The RFD is safer to use than conventional electric initiation methods. The Remotes have a timed automatic disarming feature for added safety. All Mini Controller and Remote buttons, LEDs and hardware are recessed, to minimize the possibility of damage. All system cases are watertight to a depth of 100 ft. All RFD cases have a vent for pressure equalization and airtight to an altitude of 30,000 ft.

The RFD has a versatility and reliability not before seen in demolition initiation systems. Due to the unique design of the Rothenbuhler RFD, the system can individually command from 1-4 Remotes with each Mini Controller unit. The Remotes can be individually selected on, armed, fired, and interrogated for status via the keypad on the Mini Controller. If a Remote has a low battery, this will also be indicated on the Mini Controller's keypad if the Remote is within range. With the 1678 system and the SLEEP MODE feature, the Remotes can be left in standby mode for approximately 200 hours and still maintain the energy to initiate blasting caps.



Mini Controller

## FEATURES

- **8-Position Controller fires up to 8 Remotes**
- **Mini Controller fires up to 4 Remotes**
- **Rechargeable batteries**
- **Light display toggles between bright & dim**
- **Up to 12 Miles L.O.S. 2-way communication**
- **Faster communication**
- **Increased firing capacity**
- **5 position charger and conditioner**
- **New and improved Test Box features**



8 Position controller



ROTHENBUHLER 1678 Remote Firing Device

## MINI CONTROLLER

Part Number:	
Width	3.5" (8.9 cm)
Height	6.4" (16.3 cm)
Length	2.5" (6.4 cm)
Weight:	2.7 lbs (1.2 kg)
Case	Black 6061 Aluminum with Hard Anodized Finish
Battery	<ul style="list-style-type: none"> <li>• Rechargeable NiMH</li> <li>• Run Time Per Charge 12+ Hours</li> <li>• Recharge time 1-4 Hours (<i>Charge time may vary</i>)</li> <li>• Battery Life Approximately 2 years or 300 charge cycles</li> <li>• Standby Current 110 milliamps</li> <li>• Transmit Current 1-2.5 Amp</li> </ul>
Detonator Output	<ul style="list-style-type: none"> <li>• Firing Energy - 2.8 Joule (typical), 1.8 Joule (minimum)</li> <li>• Pulse Voltage Level - 50 VDC (typical), 45 VDC (minimum)</li> <li>• Capacitor - 2,200µF Electrolytic</li> <li>• Max Firing Resistance - 28Ω (<i>includes firing cables, detonators, detonator leg wires</i>)</li> </ul>
Frequency Stability	±2.5PPM or (0.0000025%)
Modulation	11K2F3D (AFSK)
Transmit Power	2-5 Watts (Mini Controller)
Operating Power	7.2 VDC
Transmission Range	12 Miles (19.31 km) - LOS Test Box 3 Feet (91 cm) - LOS

## REMOTES: ELECTRIC & RSTI

Part Number:	
Width	3.5" (8.9 cm)
Height	6.4" (16.3 cm)
Length	2.4" (6.1 cm)
Weight:	2.5 lbs (1.1 kg)
Case	Black 6061 Aluminum with Hard Anodized Finish
Battery	<ul style="list-style-type: none"> <li>• Rechargeable NiMH</li> <li>• Run Time Per Charge Adjustable between 12-300 Hours (<i>User Setting Dependent</i>)</li> <li>• Battery Recharge 1-4 Hours (<i>Charge time may vary</i>)</li> <li>• Battery Life Approximately 2 years or 300 charge cycles</li> <li>• Standby Current 80 milliamps</li> <li>• Transmit Current 1-2.5 Amp</li> </ul>
Detonator Output	<ul style="list-style-type: none"> <li>• Firing Energy 0.470 Joule (typical), 0.350 Joule (minimum)</li> <li>• Pulse Voltage Level - 2,500 VDC (typical), 2,250 VDC (minimum)</li> </ul>
Frequency Stability	±2.5PPM or (0.0000025%)
Modulation	11K2F3D (AFSK)
Transmit Power	2 Watts (Electric Remote)
Operating Power	7.2 VDC
Transmission Range	12 Miles (19.31 km) - LOS



## SPECIFICATIONS

Radio	Carrier Frequency: 150-174 MHz (FCC Certified)
Operating Temperature Range	<ul style="list-style-type: none"> <li>• -30°C (-22°F) to 60°C (140°F)</li> <li>• -26°C (-15°F) to 60°C (140°F) - RSTI</li> </ul>
Timing	<ul style="list-style-type: none"> <li>• Arm Time: 4 ± 0.5 Seconds</li> <li>• Arm Time Period (Before Auto Disarm): 1-60 Minutes (<i>Unit will remain Armed (ready to fire), for 20 Minute before automatically switching to disarmed state.</i>)</li> <li>• Disarm Time: 3 ± 0.1 Seconds</li> <li>• Electric Remote Fire Time: 20 Milliseconds</li> <li>• RSTI Fire Time: 225 ± 125 Milliseconds</li> </ul>
<b>WARRANTY</b>	<b>2-YEAR LIMITED MANUFACTURERS WARRANTY</b>