



## Applications

- TETRA / TETRAPOL coverage enhancement
- Outdoor : Mountainous areas
- Indoor : Confined areas

## Key Features

- Output power +17 dBm
- Echo canceller (optional)
- Outdoor case IP65
- Wall - or mast-mounting
- Antenna and radiating cable compliant
- IP Monitoring by modem GPRS, GSM-R or TETRA

## Benefits

- Cost effective alternative to BTS
- Only one equipment for TETRA & TETRAPOL
- Easy remote monitoring

## Contact us

- [protel@protel.it](mailto:protel@protel.it)
- [www.protel.it](http://www.protel.it)

# Solution for TETRA coverage

## AIR Repeater™ TETRA RF/RF Medium Single



## To ensure TETRA coverage everywhere

The "AIR Repeater™ TETRA/TETRAPOL RF/RF" is designed to enhance outdoor coverage by cell extension as a cost-effective alternative to TETRA Base Station. In addition, it ensures continuity of service for TETRA / TETRAPOL radio mobile network in the infrastructures inadequately covered or not, such as tunnels, industrial buildings or warehouse, shopping centers, hospitals, subway parking, etc...

Thanks to the gain limiter, the equipment is able to operate with mobile phones near or far from the repeater without risk of saturation.

Whole-integrated in an outdoor case, this repeater can be easily installed anywhere.

The equipment can be configured and monitored with the embedded WEB/SNMP server. Remote access is available through GPRS or TETRA modem. An optional NMS is available to monitor several systems from a centralized monitoring center.

The echo cancellation algorithm *AIR Repeater™* (Advanced Insulation Repeater) guarantees the features compliance for operation at maximum gain of 90 dB and antenna insulation of 60 dB.

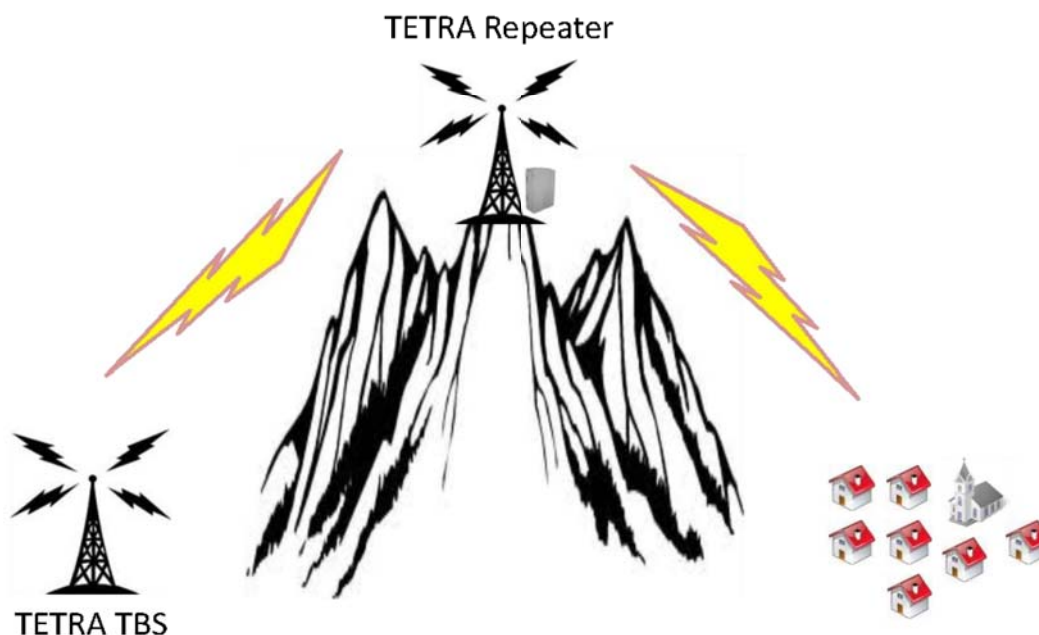


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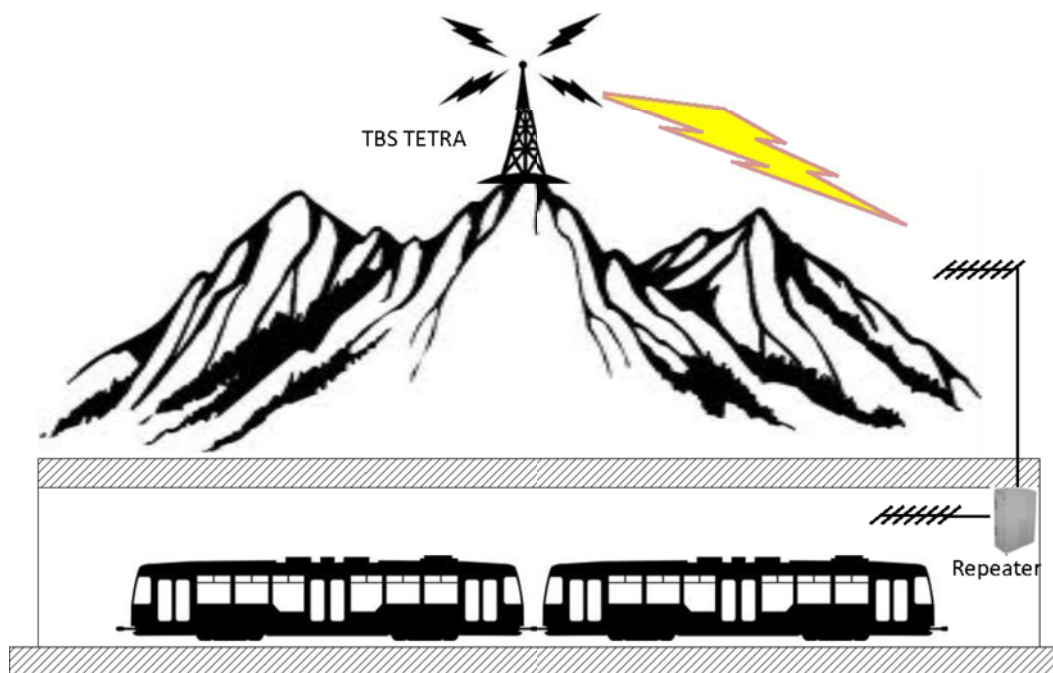
Quality Model FP1004D / ed 27 / 07 / 2011

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### Example of outdoor usage



### Example coverage of small rail tunnel





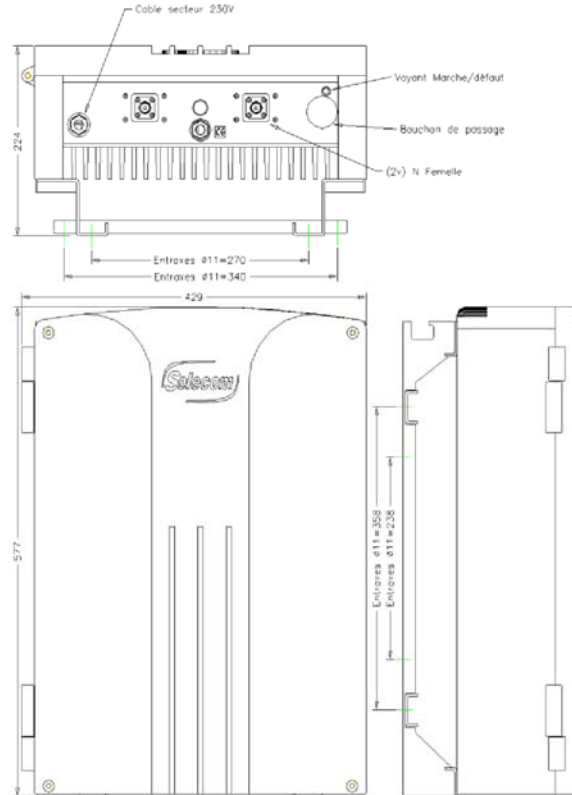
# Solution for TETRA coverage

## AIR Repeater™ TETRA RFIRF Medium Single






| RF Features                                |            | <u>Up - Link (RX)</u>  | <u>Down - Link (TX)</u>  |
|--|------------|--|--|
| Frequency range (to specify when ordering) |            | 380 - 385 MHz<br>385 - 390 MHz<br>410 - 415 MHz<br>415 - 420 MHz<br>450 - 455 MHz<br>455 - 460 MHz | 390 - 395 MHz<br>395 - 400 MHz<br>420 - 425 MHz<br>425 - 430 MHz<br>460 - 465 MHz<br>465 - 470 MHz |
| Bandwidth (to specify when ordering)       |            | From 1 to 5 MHz<br>(Adjusted SAW filter)   |  |
| Gain                                       |            | Adjustable from 50 dB to 80 dB   |  |
| Dynamic gain range                         |            | 30 dB (step 1 dB)  |  |
| Noise factor                               |            | ≤ 6 dB   |  |
| Nominal output power                       | 1 carrier  | + 17 dBm   | + 17 dBm   |
|  | 2 carriers | + 14 dBm   | + 14 dBm   |
|  | 4 carriers | + 11 dBm   | + 11 dBm   |
|  | 8 carriers | + 8 dBm  | + 8 dBm  |

| Cabinet Features     |   |
|----------------------|---|
| Power supply voltage | Integrated 230 VAC power supply           |
| Power consumption    | 72 W                                      |
| Dimensions           | H 577 mm x D 224 mm x L 429 mm            |
| Weight               | 28 kg                                     |
| Connectors           | N female                                  |
| Rating class         | IP65                                      |
| Temperature range    | - 25°C / + 55°C                           |
| Cooling system       | Natural convection cooling with heat sink |
| Monitoring           | Dry Loop<br>Green & Red LED<br>WEB, SNMP  |

### Mounting Plan



| Ordering Code | Designation  |
|---------------|--|
| Ref 603 090   | Repeater RF/RF Medium Power TETRA/TETRAPOL<br>- IP Monitoring  |
| Ref 603 092   | Repeater RF/RF Medium Power TETRA/TETRAPOL<br>- IP Monitoring<br>- Circulator on DL access (for radiating cable application) |
| Ref 603 099   | Repeater RF/RF Medium Power TETRA/TETRAPOL<br>- IP Monitoring<br>- Echo-canceller  |

| Options  |   |
|--|---|
| Cabin protection<br>                  | <ul style="list-style-type: none"> <li>✓ Protection against Sunlight and Rain</li> <li>✓ Compatible with all SELECOM Repeaters</li> <li>✓ Easy installation</li> <li>✓ Support for laptop or measuring device</li> </ul>  |
| Electrical Case<br>                   | <ul style="list-style-type: none"> <li>✓ Outdoor case</li> <li>✓ Cost effective solution</li> <li>✓ Isolation Transformer</li> <li>✓ GFCI</li> <li>✓ Re-starter</li> <li>✓ Service Outlet</li> <li>✓ CE compliant</li> <li>✓ Custom design on request</li> </ul>                          |
| GPRS Modem<br>                      | <ul style="list-style-type: none"> <li>✓ For the remote control via GPRS network</li> </ul>   |
| NMS (Network Management System)<br> | <ul style="list-style-type: none"> <li>✓ NMS software manages a complete network of different</li> <li>✓ Screens with complete status and reports</li> <li>✓ Location on a map of each equipment</li> <li>✓ SMS, EMAIL alerts</li> <li>✓ Equipments control in case of needing</li> </ul> |
| Solar panels<br>                     | <ul style="list-style-type: none"> <li>✓ Free Energy</li> <li>✓ Battery for autonomy in case of lack of sunlight</li> <li>✓ Automatic relay to standard power supply</li> <li>✓ Ecological solution</li> </ul>  |
| Couplers<br>   | <ul style="list-style-type: none"> <li>✓ Balanced couplers (1 to 2, 1 to 3, 1 to 4)</li> <li>✓ Unbalanced couplers (1/3-2/3; 1/5-4/5; 1/10-9/10)</li> <li>✓ For all types of antenna combinations</li> </ul>  |
| Antennas<br>   | <ul style="list-style-type: none"> <li>✓ Donor antenna</li> <li>✓ Wall mounted antennas indoor</li> <li>✓ Ceil mounted antennas indoor</li> </ul>   |
| Feeders<br>  | <ul style="list-style-type: none"> <li>✓ Coaxial feeders</li> <li>✓ Radiating cables</li> </ul>   |