



# IMPROVING SAFETY FOR FIREFIGHTERS

GREATER MANCHESTER FIRE AND RESCUE SERVICE DEPLOY MOTOTRBO™ RADIOS



## GREATER MANCHESTER FIRE AND RESCUE SERVICE (GMFRS)

Greater Manchester Fire and Rescue Service (GMFRS) is the second-largest fire service in England. It protects more than 2.6 million people over a 1300km<sup>2</sup> area and employs 1200 firefighters across 42 fire stations. From April 2014, it will become one of four fire services to fall under the responsibility of North West Fire Control and will work in closer collaboration with its neighbouring services in Cumbria, Lancashire and Cheshire.

The GMFRS fire-ground staff had been using analogue radios for seven years. However, the radios had reached the end-of-life and communications were unclear, especially when used in Breathing Apparatus (BA), high rise buildings and tactical ventilation scenarios. With high fault and failure rates, GMFRS was also faced with spiralling repair costs and lengthy lead times for repairs.

Ultimately concerns were growing over increasingly ineffective fire-ground communications, which could result in firefighter injury and a risk to the general public and property.

Long-term supplier Radiocom Systems Limited recommended MOTOTRBO™ radios with IMPRES™ audio accessories to help suppress ambient noise, amplify loudness and improve voice intelligibility. After various tests it became clear that the MOTOTRBO radios were the best devices to meet all GMFRS' requirements. The audio coming from the noise-cancelling microphone is crystal clear – even communications from officers wearing BA – and firefighters can now hear instructions clearly through the noise-cancelling earpiece. The move to MOTOTRBO has improved the service's firefighting capabilities and efficiencies, as well as public and operational safety. It also ensures future-proof efficient cross-border communications with the other fire services in the North West.

### CUSTOMER PROFILE

**Organisation:**  
Greater Manchester Fire and Rescue Service (GMFRS)

**Industry:**  
Emergency Services

**Partner:**  
Radiocom Systems Limited

### Motorola Solutions Products:

- 417 DP4601 Portable Two-Way Radios with Industrial Noise-Cancelling Remote Speaker Microphones (INC RSM) – for firefighters
- 67 DP4801 Portable Two-Way Radios with Bluetooth PTT Headset – for flexi duty officers
- 20 DP4401 Ex ATEX Radios with RSM PMMN4067 – for use in hazardous and explosive environments
- Extreme Noise Kit - Noise-cancelling earpiece for use with PPV fans or UHP lances
- IMPRES™ batteries
- Space-saving six-way IMPRES Multi-unit Charger
- 5-year Service from the Start with Comprehensive Coverage
- 13 DR 3000 Repeaters

**'The MOTOTRBO radios offer mission critical clear communications, decisively also for BA wearers and officers operating PPV fans and UHP lances. The radios offer improved functionality, flexibility and coverage. The robustness of the radios, the excellent noise-cancelling accessories, the long-life IMPRES batteries and the service element, all also contributed to our decision to deploy MOTOTRBO. Our firefighters' feedback has been exceptional. They now know that their messages will be heard clearly, first time.'**

Mark Scoales, ICT Senior Radio/Voice Comms Analyst, GMFRS



## CHALLENGE

Clear fire-ground radio communications are essential for the safety of firefighting teams and the public. Operational teams on-site at an emergency need to be able to communicate clearly with the flexi duty officers who are managing the incident from the Command Support Unit or Command Unit, and vice versa. Background noise in these situations can be extreme: with sirens blaring, engines roaring and equipment running, sound levels regularly exceed 85 dBA.

Officers identified a full set of technical requirements for the replacement of the analogue fire-ground radio and ancillary equipment. They highlighted the previous extremely poor and unreliable communications with BA wearers and firefighters operating noisy equipment, such as Positive Pressure Ventilation (PPV) fans and Ultra High Pressure (UHP) lances. The requirements also included the need for some radios suitable for use in potentially explosive and hazardous environments and hands-free communications for the increased efficiency of all teams.

GMFRS wanted to put the MOTOTRBO equipment fully to the test at its dry rig training centre. A representative from both Radiocom Systems and Motorola Solutions worked alongside the firefighters to properly assess the real problems and challenges firefighters face, in a commitment to deliver the right solution, down to the last accessory. GMFRS tested the INC RSM right next to a fire engine with its siren running. Whereas none of the communications from the analogue radio test could be recorded, the audio from the MOTOTRBO was crisp and clear.

## SOLUTION

The GMFRS firefighting teams use the MOTOTRBO radios in every situation they are called out to, whether fire, flood or road accident. The radios usually operate on the six Home Office Approved Fire Service Channels: two being for general Fire-Ground, two for Incident Command and two for BA. The service can use further channels for a wide spread incident, where it is working alongside other agencies. The radios natively operate in digital mode; however, all channels are also available in analogue mode for compatibility with other services that have not yet migrated.

The flexi duty officers use the DP4801 Portable Two-Way Radios as these devices have a full keypad and increased operational functionality, such as the Private Calling and

Transmit Interrupt function which allows the officer to interrupt all communications on the fire-ground. The DP4601, however, was more suited to the firefighters, who just need an easy-to-operate radio in emergency situations. Every firefighter is now equipped with a radio, which had not been the case previously. The DP4401 Ex ATEX-certified radios are kept on the Command Unit and Command Support Unit vehicles in case the teams have been called out to an incident involving hazardous material, like gas or petrochemicals.

BA crews wear the external noise-cancelling microphone attached at chest level: in tests this delivered 30% clearer communications than the alternative solution – a microphone from another supplier, integrated into the breathing apparatus. And officers operating PPV fans or UHP lances use the noise-cancelling earpiece from the Extreme Noise Kit.

To keep their hands free to carry out their tasks, all crews wear the radios on their belts and flexi duty officers can track firefighters' movements via the SmartPTT software application for the integrated GPS.

Most incidents just require communications between operational teams and the Command Unit, so no repeater is required. However, when various stations are called out to a larger incident, they can access the wider network delivered by the DR3000 Repeaters. These are strategically placed across three command vehicles based out of Hyde, Rochdale and Atherton fire stations, which geographically offer the best coverage across the region. The fire service also has other MOTOTRBO repeaters throughout the area, in, for example, hotels, shopping centres and sports stadiums, and will request access to these networks if needed.

## BENEFITS

GMFRS now has clear, effective and robust communications. Firefighters can work more efficiently and safely. The IMPRES audio accessories help to suppress ambient noise, amplify loudness and improve voice intelligibility and the IMPRES radio batteries and chargers communicate to help lengthen battery life and extend talk time, so crews can be assured their radio battery is ready when they go out on a call.

The 5-year Service from the Start with Comprehensive Coverage ensures that all GMFRS radios are insured, even against accidental damage, with any damaged radios being replaced within three business days.

### Applications:

- Voice communications for firefighters and flexi duty officers
- Voice communications for Breathing Apparatus (BA) wearers and officers operating PPV fans or UHP lances
- Transmit Interrupt for critical calls
- GPS to locate position of firefighters

### Benefits:

- **Best-in-class audio:** Improved voice quality and clarity even in the noisiest of emergency situations, with inbuilt IMPRES audio quality and noise-cancelling accessories
- **Improved safety:** For firefighters and the general public
- **Enhanced functionality:** Such as integrated GPS
- **Greater coverage:** Excellent voice clarity over wider coverage area via repeaters, or wider Manchester MOTOTRBO™ network can be activated if operations cover an extensive area
- **Interoperability:** With other fire services which have already migrated to digital, but still with option to work in analogue
- **Easy-to-operate radios:** Minimal training and disruption during changeover, hands-free operation
- **Improved battery life:** Extended talk time and radio reliability
- **Significant reduction in repair costs:** Robust radios and fast replacement turnaround

[www.motorolasolutions.com/mototrbo](http://www.motorolasolutions.com/mototrbo)

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