OFFLINE RESILIENCE GUIDE // UK EDITION

Mesh + Resilient Local Communications

Understand what mesh networking can and cannot do, where PMR446 fits, and how to plan household or community communications without claiming a network can do more than it can.

OFFLINE REFERENCE | UPDATED 30 SEP 2026 | UK FOCUS

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LAYER 1 // ACT

FIELD CARD

Immediate actions first. Then read the conditions and limits below.

FIRST ACTIONS

- Write a communications plan before choosing a radio or mesh technology.
- Use at least two independent paths where practical: for example mobile phone plus radio/physical meeting point.
- Treat any mesh as local connectivity unless it has a separately working route to the internet.
- For UK radio, use compliant equipment within current Ofcom rules.

DO NOT

- Do not imply that a mesh automatically reaches emergency services.
- Do not transmit on frequencies/power levels for which your equipment or operator is not authorised.
- Do not depend on an app that requires a cloud login if your objective is internet-independent messaging.

IF THIS HAPPENS

- If mobile data fails but local devices can still connect, a local-only service may continue to pass messages within its coverage.
- If the system has only one gateway or power source, that single point can still fail even when the radio layer is “mesh”.

WHAT YOU NEED

- Paper contacts and meeting points
- Charged devices / spare power
- Agreed channels or local service addresses
- A test schedule
- Clear expectations about range and coverage

> **BOUNDARY**
> This is a practical reference aid. Current official instructions, emergency services, competent professionals and product documentation take priority where they conflict.

Mesh connectivity ≠ internet access ≠ emergency-service communication

A mesh is a network in which nodes can connect through one another rather than every device depending on a single central access point. That can improve local reach or provide alternate paths between participants. It does not create internet connectivity unless at least one node has a working internet gateway, and it does not create a route to 999/112 unless the technology/service explicitly provides one.

Wi-Fi mesh

Consumer Wi-Fi mesh systems use multiple access points to extend one local network. They are useful for coverage around a building, but most still depend on power at each node and often on a single router/gateway for internet. During a broadband outage the local Wi-Fi may remain useful; during a power outage unpowered mesh nodes disappear.

Device-to-device and Bluetooth concepts

Some applications can exchange data directly over Bluetooth or local Wi-Fi. The benefit is that nearby devices may communicate without a mobile network. The limitations are range, platform compatibility, battery use, app availability and whether the app secretly depends on an online account or server for setup. Test the exact application in airplane mode before relying on it.

LoRa-style low-bandwidth networks

LoRa and similar long-range low-data-rate radio technologies are useful for small messages and sensors, not broadband. Range depends heavily on frequency, antenna height, terrain, buildings and legal power limits. Some popular “mesh” projects use licence-exempt spectrum; others may have regional settings or equipment requirements. Use the UK-legal configuration and do not assume a product sold online is legal to transmit as configured.

PMR446 in the UK

Ofcom describes compliant PMR446 as a mobile, short-range, simplex, peer-to-peer service operating in 446.0–446.2 MHz, with compliant use licence-exempt and limited to low power (0.5 W ERP maximum). Use purpose-built compliant PMR446 handhelds as supplied. Range claims on packaging are best-case marketing; buildings, terrain and other users can reduce practical range substantially.

Amateur radio

Amateur radio can support technically capable local and long-distance communication, but transmitting generally requires an appropriate UK amateur radio licence and compliance with its conditions. It is a training and community pathway, not an excuse to transmit unlawfully during ordinary disruption. If it interests you, learn and license before you need it.

Community plan beats gadget collection

Agree who checks whom, what time windows to listen, which channel or local page to use, what happens if radio fails, and where people meet if no electronic path works. Use short, plain messages and avoid sharing sensitive personal details over open or shared radio channels. A communications plan should degrade gracefully from internet → mobile/SMS → local network/ radio → paper/physical contact.

Verify / learn

These references are resolved from GPN’s central source registry so authority, coverage and source changes can be managed in one place. If a current official source conflicts with this guide, follow the current official source.

> **PRIMARY / AUTHORITATIVE SOURCE**
>
> **Ofcom licence-exempt devices / PMR446**
>
> Only compliant equipment operated within the applicable technical conditions is licence-exempt. Spectrum rules can change.
>
> https://www.ofcom.org.uk/spectrum/radio-equipment/licence-exempt-devices

> **PRIMARY / AUTHORITATIVE SOURCE**
>
> **UK Emergency Alerts**
>
> Get Prepped Now does not independently poll this service for a local all-clear.
>
> https://www.gov.uk/alerts

Editorial review date: 30 September 2026. Next scheduled review: 28 January 2027.

INFORMATION CHECK✓ CURRENT REVIEW

REVIEWED	NEXT REVIEW DUE	REGISTERED REFERENCES
30 Sep 2026	28 Jan 2027	2 sources

Source availability is not hazard status. Offline reference material must never be interpreted as a live all-clear.

GET PREPPED NOW // ORIGINAL GUIDE

Source page: https://getpreppednow.co.uk/guides/resilient-local-communications-mesh.html
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