

Best practice guide for preventing GSM-R radio audio card failures

Version 01

AUDIENCE:

Train Crew

Installation/Maintenance Staff

Signallers

Control Office

This bulletin is aimed at persons engaged in the maintenance of GSM-R fitted vehicles, and is provided for information and action as appropriate.

There have been 45 GSM-R radio audio card failures recorded between Period 1 and Period 7 2013 / 14.

Whilst this rate of failure still gives a Mean Time Between Failure (MTBF) of 329,952 hours, an analysis of each audio card failure has been completed in order to reduce the rate of failure. Detailed below is a best practice guide for preventing GSM-R radio audio card failures going forward.

1. Before replacing the GSM-R Driver Control Panel (DCP), handset or loudspeaker please ensure power to the GSM-R radio is disconnected (isolate at the GSM-R MCB and the UPS) whilst replacing these components. The hot swapping of GSM-R DCP's, handsets and loudspeakers is to be avoided. This also applies when using the Radio Test Unit for second line bench testing.
2. The use of earthed scope probes on powered up GSM-R radios is to be avoided as some earthing points on the GSM-R radio can cause audio card failures.
3. Only use the fixings specified on the handset mounting plate as others can short out pins on the handset.
4. Only power up the GSM-R radio if it is earthed (via the Gland box) to the train chassis. All installation designs require the GSM-R radio to be earthed. Some of the radio protection devices require a path to earth (chassis).
5. When completing a GSM-R radio installation, test the wiring on the unit / vehicle before connecting the DCP and GSM-R radio. Ensure the wiring tests are correct using the Breakout Box before the GSM-R radio is connected.
6. Ensure that the DCP and handset D-type connectors are fully made and screw locks are screwed in before applying power to the GSM-R radio.

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