

## Audio Overlay Installation Guidelines

Revision A, 8/2020

**Relevance:** This app note applies to the Z3 Plus, PD8 Plus module and the discontinued ZEPICIII, PD8 module.

**Purpose:** The purpose of this App note is to emphasize long held rail industry best practices for installing audio overlay track circuits. It is useful to periodically review this material to insure proper installation and maintenance for audio overlays whether installed by railway personnel or 3<sup>rd</sup> party contractors.

1. Insure that the operating frequency of the audio overlay is compatible with the operating frequency of all other equipment on the same track and neighboring tracks, if applicable.
2. Use properly rated primary surge protection and ground rods. See relevant AREMA specifications.
3. Periodically inspect primary surge protection for wear due to surge activity. Reduced effectiveness of primary protection can expose secondary protection to excessive surge levels resulting in equipment failure.
4. Use twisted # 6 bond strand for track wires between rail connections and the overlay unit. Audio overlays are generally used in switch unlock, DED and AEI presence detection applications. As such, these products may be located near crossings and within signal system circuits. If a short circuit were to occur in the track wires or surge protection or house wiring, the signal system would be put to stop due to the low resistance of #6 track wires, calling attention to the affected area.
5. Monitoring diagnostic data provided by DED and AEI systems will facilitate the prompt and efficient maintenance of audio overlays.
6. The product user manuals for these products have been updated to include a simple shunt test to work hand in hand with best practice installation methods detailed in this app note.
7. Check [zukinut.com](http://zukinut.com) often for current user manuals, installation tips and troubleshooting procedures.