

WACM 2 - Description of operation

The Component (WACM 2) operation starts after the vehicle is started and the user accommodates a compatible device over the charging mat. The Component provides wireless power transfer to the compatible mobile device (phone) within the vehicle. The Component comprises a Power transmitter, a Primary Coil, and the Mobile Device is equipped with a Power Receiver which comprises a Secondary Coil. The Primary Coil and Secondary Coil form the two halves of a coreless resonant transformer. Appropriate Shielding at the bottom face of the Primary Coil and the top face of the Secondary Coil, as well as the close spacing of the two coils, ensures that power transfer occurs with an acceptable efficiency. In addition, this Shielding minimizes the exposure of users to the magnetic field.

The Component is a device designed to communicate with Qi inductive charging capable devices and provide wireless charging power to these devices with the following characteristics:

- Powered-At-All-Time (PAAT) component operating inside the vehicle.
- Supports charging wireless charging compatible devices using the WPC Qi standard for 5 Watt charging.
- Communicates with the wireless charging compatible devices using unidirectional receiver to transmitter communication per Qi protocol for 5 Watt charging.
- Performs Foreign Object Detection (FOD) to detect a foreign object absorbing energy intended for mobile device.
- Ability to disable the charging feature or shift the wireless charging fundamental frequency (+/- 15 KHz) without suspending power to the mobile device.
- Nominal default fundamental charging frequency of 110 kHz when charging Qi device.
- Ability to determine if the radio is performing a seek / scan and reduce the power transfer to minimize possible interference.
- Data rate of 500 kBaud via CAN communication to the vehicle.