

QUALCOMM HALO™

**The Future of Road
Transportation is
Electric & Wireless**



qualcommhalo.com

The future of road transportation is electric and wireless

Overcoming barriers to Electric Vehicle (EV) adoption

- ✗ Lack of public charging infrastructure
- ✗ High EV cost
- ✗ Range Limitations
- ✗ Ease of use

Qualcomm Halo™ Wireless EV Charging (WEVC) is one technology that can help overcome these barriers



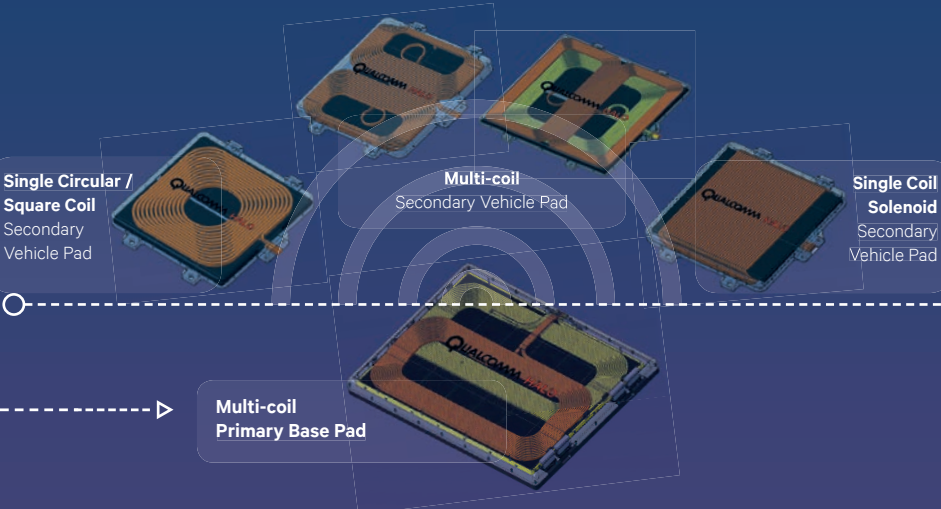
- ✓ Charge more often
- ✓ Smaller EV batteries
- ✓ No plugs or cables
- ✓ No charge posts

Magnetic Interoperability



Different secondary vehicle pads must be supported with a standardized primary base pad

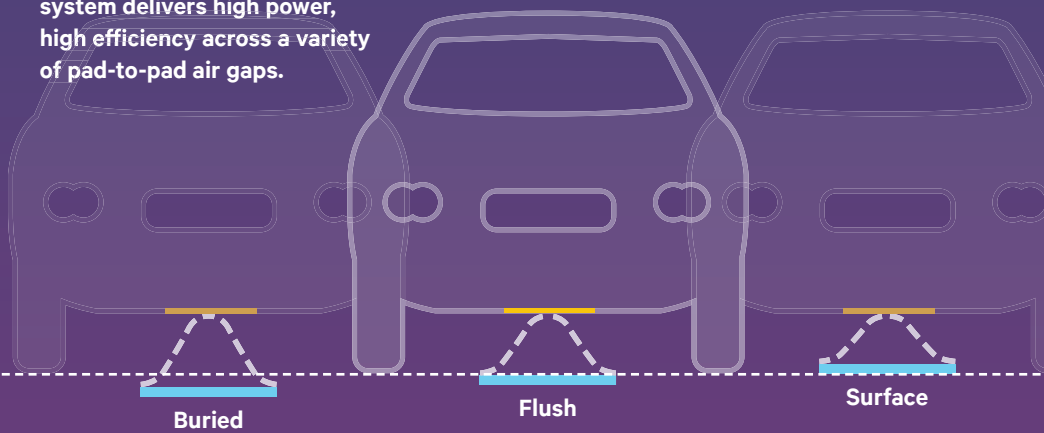
Qualcomm Halo™ multi-coil technology delivers magnetic interoperability across single coil, solenoid & multi-coil vehicle pads.



Supporting various air gaps

Flexible Charging Solution

Different EV ride-heights and pad installation methods, impact WEVC efficiency. Qualcomm Halo™ multi-coil system delivers high power, high efficiency across a variety of pad-to-pad air gaps.



Qualcomm Halo™ multi-coil technology delivers magnetic interoperability for charging EVs wirelessly



Driving magnetic interoperability through standards

Multi-coil charging pads

Controlled magnetic flux to help meet regulatory compliance criteria

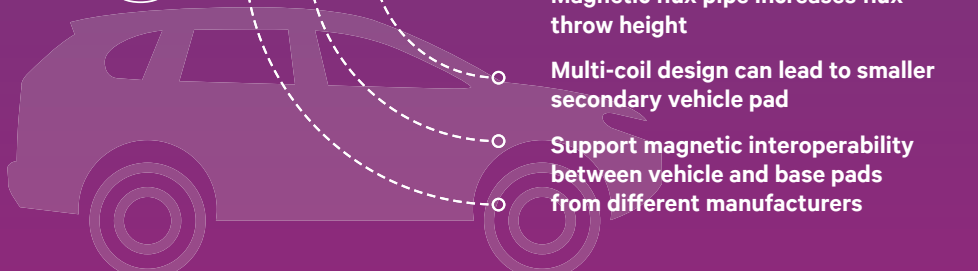
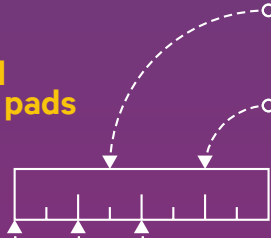
Support wireless charging for high ground clearance vehicles

Support high power charging **3.3 kW – 20 kW**

Magnetic flux pipe increases flux throw height

Multi-coil design can lead to smaller secondary vehicle pad

Support magnetic interoperability between vehicle and base pads from different manufacturers



Our Heritage

Qualcomm has multiple years of experience in wireless charging and with our partner the University of Auckland contributing to the comprehensive technology offering.

28 years of Wireless Innovation

\$26B FY13 Revenue

\$5B FY13 R&D Spend

Automotive experience: sustainable & smart transportation solutions

- Engaged with major standards & regulatory bodies
- Long history in wireless power research
- Enabling the connected car and related services



Wireless EV Charging



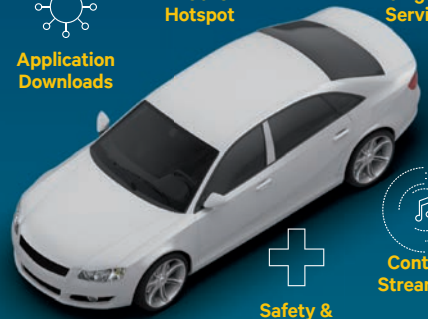
Application Downloads



Mobile Hotspot



Navigation Services



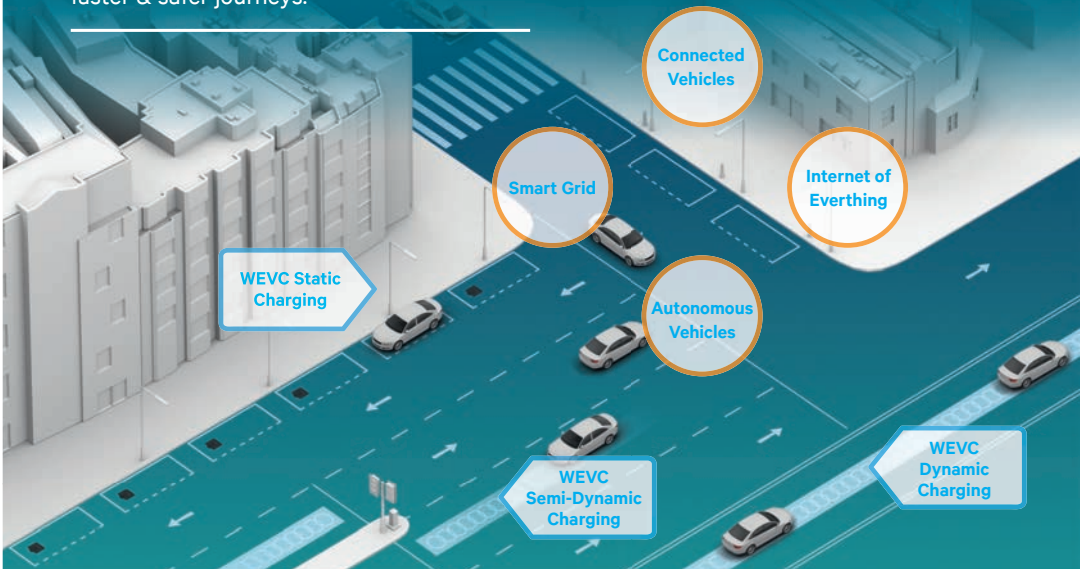
Content Streaming



Safety & Security

Our Vision

Smart cities with ubiquitous public WEVC infrastructure, reduced air pollution, faster & safer journeys.

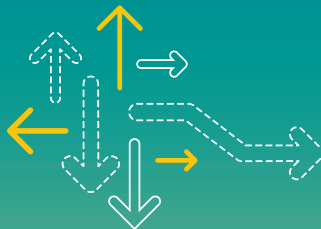




QUALCOMM

Official Founding & Technology Partner

FIA Formula E Formula E is changing the perception of EVs in the automotive industry. Qualcomm is the official founding technology partner to the Formula E championship.



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