

EPC Wireless Power Solutions – From Single Device Charging to Multiple Device Large Surface Area Power



Wireless power is ready to be incorporated into our daily lives. Transmitters can be placed in furniture, walls, floors, to efficiently and economically power or charge our electronic and electrical devices.

Magnetic resonance technology is the key to ubiquitous implementation – enabling large surface area transmission, spatial freedom for placement of receiving devices, and the ability to power multiple devices simultaneously.

EPC offers a full range of transmit and receive reference designs from single device charging to multiple devices powered simultaneously across a large surface area.

At the core of these EPC reference designs are eGaN® FETs and ICs operating at 6.78 MHz frequency (meeting the AirFuel™ Alliance standard) resulting in maximum wireless power system efficiency.

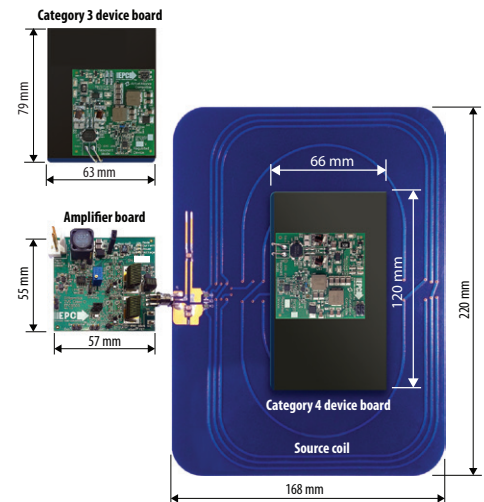


Reduce Time to Market – Wireless Power System Demonstration Kits

All EPC wireless power demonstration kits contain a transmit unit (wireless power amplifier and transmit coil) and device receive unit(s). In addition, power amplifiers and device receive units are available to purchase individually.

The kits cover power levels ranging from AirFuel class 2 through AirFuel class 4 as well as a multi-mode demo kit that covers both the AirFuel class 2 as well as the Qi inductive standard in a single amplifier.

		Device Receive Unit			
Transmit Unit (amplifier)		EPC9513 Category 3 (6.5 W)	EPC9515 Category 4 (13 W)	Category 3 (6.5 W) Category 4 (13 W)	Category 3 (6.5 W) Qi (5 W)
	Typical Application	Smart Phone, Digital Assistant, Any 1 A USB Device	Tablet, Any 2 A USB Device	Small Form Factor Laptop, 19 V Lamp	Smart Phone, Digital Assistant, Any 1 A USB Device
	EPC9510 Class 2 (10 W)	EPC9127 Class 2 Demo Kit			
	EPC9509 Class 3 (16 W)		EPC9128 Class 3 Demo Kit		
	EPC9512 Class 4 (33 W)			EPC9120 Class 4 Demo Kit	
	EPC9511 Multi-Mode (10 W)				EPC9121 Multi-Mode Demo Kit



EPC9128 Class 3 kit.

Wireless Power Amplifiers

Amplifier boards are available for customers that have their own coil design.

	AirFuel Class	Power Level	Power Amplifier Board	Topology
Transmit Power (amplifier)	2	10 W	EPC9510	ZVS Class D
	2	10 W	EPC9051	Class E
	3	16 W	EPC9509	ZVS Class D
	3	16 W	EPC9052	Class E
	4	33 W	EPC9512	ZVS Class D
	4	33 W	EPC9053	Class E
	5	60 W	EPC9065	ZVS Class D
	5	60 W	EPC9083	Class E
	Multi-Mode	10 W (AF) 5 W (Qi)	EPC9511	ZVS Class D

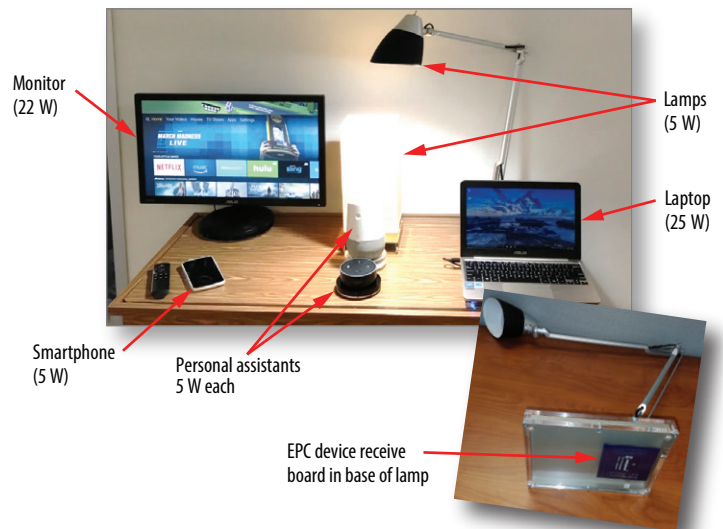


EPC9512 Amplifier board.

Device Receive Units

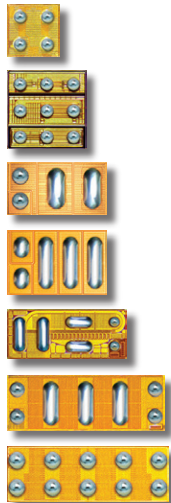
Device receive units are available for customers that want to get various consumer electronic products quickly to market.

Device Receive Unit	AirFuel Category	Power Level	V _{OUT}	I _{OUT}	Device Receive Board	Example Application
	3	5 W	5	1	EPC9513	Smart Phone
	4	10 W	5	2	EPC9515	Tablet, Phablet



eGaN® FETs and ICs for Wireless Power

EPC's gallium nitride devices are ideal for wireless power due to their ability to operate efficiently at high frequency, deliver high power, and in a small, low profile footprint.



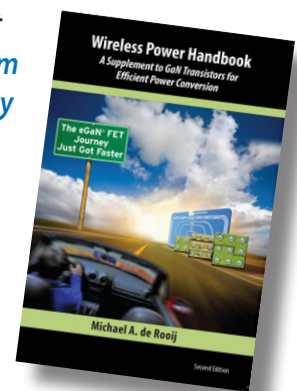
Part Number	Configuration	V _{DS}	R _{DS(on)} (mΩ)	Pulsed I _b (A)	Package (mm)	Wireless Power Function
EPC2108	Dual with Bootstrap	60	240/240/3300	5.5/5.5/0.5	BGA 1.35 x 1.35	Main power stage in amplifier
EPC2107	Dual with Bootstrap	100	390/390/3300	3.8/3.8/0.5	BGA 1.35 x 1.35	Main power stage in amplifier
EPC2038	Single with Gate Diode	100	3300	0.5	BGA 0.9 x 0.9	Synchronous bootstrap in amplifier
EPC2037	Single	100	550	2.4	BGA 0.9 x 0.9	Main power stage in amplifier / Synchronous bootstrap in amplifier
EPC8010	Single	100	160	7.5	LGA 2.1 x 0.85	Main power stage in amplifier
EPC2036	Single	100	73	18	BGA 0.9 x 0.9	SEPIC pre-regulator
EPC2007C	Single	100	30	40	LGA 1.7 x 1.1	Main power stage in amplifier
EPC2012C	Single	200	100	22	LGA 1.7 x 0.9	Main power stage in amplifier
EPC2019	Single	200	50	42	LGA 2.8 x 0.95	Main power stage in amplifier / Boost FET in receive circuit
EPC2046	Single	200	25	55	BGA 2.9 x 0.95	Main power stage in amplifier

The technological capability to achieve a wireless power future is here today!

A major challenge for implementing wireless power is the design of the amplifier. The aim of this handbook is to understand the many challenges to designing an amplifier for wireless power, such as radiated EMI, multi-mode systems, and ways to improve efficiency.

With their low capacitance, zero reverse recovery, and low on-resistance, eGaN® FETs and ICs ensure low operating losses leading to higher amplifier efficiency and help keep EMI generation low.

Available at **Amazon.com** and **Digi-Key**



For More Information

Please contact info@epc-co.com or your local sales representative

Visit our website: epc-co.com

Sign-up to receive EPC updates at bit.ly/EPCCupdates or text "EPC" to 22828



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