

PowerSphyr's SkyCurrent 30: Experience the Future of Wireless Charging!

Seamless Dual Mode Wireless Charging Platform

PowerSphyr's SkyCurrent 30 is the ultimate wireless charging platform delivering its dual-mode wireless charging pad and a suite of 'fast charging' receiving units. The SkyCurrent 30 charging pad can support a mix and match of devices and power requirements to deliver the ultimate in 'drop & go' charging!



SkyCurrent 30 Charging Pad

Specifications:

- **Input Power**
60 Watts - 20V, 3A)
- **Qi Frequency and Coil Dimensions**
100 kHz, 43.5 mm x 43.5 mm
- **MR Frequency and Coil Dimensions**
6.78 MHz, 230 mm x 120 mm
- **Bluetooth Frequency**
2.4 GHz
- **SkyCurrent 30 Charging Pad Dimensions**
273 mm x 149 mm x 25 mm, 1 lb. (0.46 kg)

Features:

- **Flexibility**
Dual-mode charging pad supports both AirFuel's magnetic Resonant (MR) and WPC's Qi charging standards
- **Multi-Device Charging**
Charge multiple MR-enabled devices, with varying power requirements, at the same time
- **'Fast Charge' capability**
Charge MR-enabled receiving devices at up to 30 Watts per device or 3 Qi-enabled receiving devices
- **Spatial Freedom**
MR-enabled devices can charge anywhere on the charging pad
- **Safe and worry-free charging**
Charging pad fail-safe circuitry prevents over-charging of receiving devices and has over-temp and FOD protection
- **Power indicator**
Indicator light shows when power is on

Qi and MR-enabled receiving units

Specifications:

- **Support for a wide range of standards**
 - Dual-mode receivers that support both AirFuel and WPC
 - AirFuel
 - WPC

Features:

- **Optimized wireless receiving unit**
AirFuel certified magnetic resonant (MR) receiving units
- **High performance**
Wirelessly charge each receiver simultaneously
- **Safe and worry-free charging**
- **Flexible, low-cost design**
Complete engineering design services to deliver product solutions

Wireless Charging Proof Points

- Any Qi-enabled smartphones
- Bluetooth™ speaker enabled with SkyCurrent 30 MR
- Personal headset enabled with SkyCurrent 30 MR
- LED light enabled with SkyCurrent 30 MR

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PowerSphyr's SkyCurrent 30 is the ultimate wireless charging platform delivering its dual-mode wireless charging pad and receivers. The SkyCurrent 30 charging pad can support a mix and match of devices and power requirements to deliver the ultimate in 'drop & go' charging!

Inductive Charging - Qi:

- **How it Works**
PowerSphyr's inductive charging works by creating a wireless transfer of electrical energy between two coils at an operation frequency of 100 kHz. The charging area for Qi inductive devices is over each of the three Qi alignment marks.
- **Powering Up**
Once the power supply is plugged in the charger boots up. After a few seconds the charger is ready to use.
- **Standby Mode**
If there are no Qi-enabled device over the Qi coil, indicated on the charging pad by Qi alignment marks, then it will start in standby mode to reduce power consumption.
- **Power Transfer Mode**
When a Qi-enabled device is placed over the Qi mark the charger will send an amplitude modulated Power Signal, or *ping*, to detect the device. Once detected, the charger then goes into power transfer mode and charges the device. When the device is removed, the charger will go into standby mode once again.

Magnetic Resonant Charging - AFA:

- **How it Works**
PowerSphyr's electromagnetic resonant charging works by creating a wireless transfer of electrical energy between two coils both tuned to resonate at the same frequency (6.78 MHz). The charger converts DC into AC and pushes the current through a resonant transmitting coil to create an electromagnetic field. All MR-enabled devices within the charging area, which encompasses the entire charging pad, will then receive power from the electromagnetic field via a resonant receiving coil and convert it back into DC to power and charge the device.
- **Powering Up**
Once the power supply is plugged in the charger boots up. After a few seconds the charger is ready to use.
- **Power Save Mode**
If there are no MR-enabled devices on the charger then it begins in a power save mode. In this mode the charger will send out a beacon signal to detect MR-enabled devices, reducing power consumption.
- **Power Transfer Mode**
When a MR-enabled device is placed within the charging area, the charger detects the device via Bluetooth. The charger then goes into a power transfer mode. In this mode the charger transmits enough power to meet the demand of the receiver, or until it reaches its maximum power output (30W). Once all devices are removed the charger will go into power save mode once again.

Dual Mode Charging - Qi and AFA:

- **How it Works**
PowerSphyr's dual mode charging works by having both inductive and resonant coils all in one charging area. If a dual-mode device is placed on the charging area, it connects to whichever charging type the charger detects first and follows the methods described above.
- **Resonant-Only Charging Area**
If a dual mode device is placed over a resonant-only part of the charging area and not over one of the three Qi alignment marks, it will connect and charge via magnetic resonance.
- **Qi & Resonant Charging Area**
If the device is placed over a Qi coil, indicated by three Qi alignment marks, it is over both Qi & MR coils. When this happens, the device will typically connect and charge via inductive charging. However, since MR has a larger spatial freedom, it may connect to MR first. This depends on both the coil-to-coil coupling and whether or not the device has had enough time to connect via MR before Qi is detected.