



Integrated low cost
Qi wireless charging
transmitters
NXQ1TXH5,
NXQ1TXL5

Plug 'n play low power wireless charging transmitters for cost-sensitive applications

Flexible and simple design: build a complete high-end performance 5 V Qi Version 1.2 compliant low power wireless charging transmitter, with a standby power of less than 10 mW.

KEY FEATURES

- ▶ Qi Low Power version 1.2 compliant
- ▶ Transmit power up to 8W
- ▶ Fully integrated transmitter with integrated power stages
- ▶ Low-power technology based on CoolFlux™ DSP
- ▶ Extremely low component count and easy-to-design solution
- ▶ Small product package: HVQFN32 (5 x 5 mm)
- ▶ Standby power of < 10 mW, including device detection
- ▶ ASK with a DSP for reliable communication
- ▶ Easy FOD tuning (2 resistors) for Qi version 1.2 certification

KEY BENEFITS

- ▶ High efficiency from 1W to 5W charging applications
- ▶ Ideal for smartphone and wearable charging applications
- ▶ Extremely small application size and easy to design
- ▶ Very low standby power including analog & digital ping
- ▶ Safe operation with FOD and optional NTC

APPLICATIONS

- ▶ Wireless Power Consortium (WPC) Qi certified/compliant wireless power transmitters
- ▶ Wireless charger for (smart)phones, toys, shavers, and other handheld devices, smartwatches and wearables, with high efficiency and small form factor

Designed for superior performance in size- and cost-optimized 5 V Qi wireless chargers, the NXP NXQ1TXH5 wireless charging transmitter integrates everything from power control, signal processing, on-chip current and voltage measurement up to a fullbridge output power stage, with output power of 8W and a standby power as low as only 10 mW. The NXQ1TXH5 meets all the latest Wireless Power Consortium (WPC) Qi low power version 1.2 specifications and is ideally suitable for a Qi certified design that is future proof.

Exceptionally high integration and advanced functionality serve to reduce footprint and standby power consumption, while making the design of a wireless charger very simple. In addition to the Qi coil and resonant capacitors, the NXQ1TXH5 requires very few external components. Also the Foreign Object Detection (FOD) tuning has been made very simple and adjustment to any Qi coil and any application is done by only 2 external resistors. The device comes in a very small, 32 pin HVQFN package (SOT617-3) of 5 x 5 mm with a 0.5 mm pitch.



The NXQ1TXH5 can be powered by a USB port or USB charger. Using the on-chip Smart Power function, the NXQ1TXH5 detects a drop in the supply voltage and, in response, reduces the transmitted output power. This makes it possible for the design to use a USB port capable of only low output power.

Two black, square integrated circuit (IC) chips are shown side-by-side. The chip on the left is labeled 'NXQ1TXH5 Wireless Power Transmitter' and the chip on the right is labeled 'NXQ1TXL5 Wireless Power Transmitter'. Both chips feature the NXP logo at the top. The chips are mounted on a white surface, and their gold-colored pins are visible at the bottom.

terminal 1
index area

CNF1 32
CNF2 1
CNF3 2
CNF3 3
SCL 4
BUZZER 5
CNF4 6
LED_G 7
LED_R 8
CNF1 9
ASEN1 10
VSEN1 11
ASEN2 12
ASEN3 13
STBY 14
VDDP1 15
VDDP1 16
OUT2 17
OUT2 18
GNDP 19
GNDP 20
GNDP 21
GNDP 22
OUT1 23
OUT1 24

NX201TXH5

33 VSS

aaa-020099

Transparent top view

terminal 1
index area

GNDD 32 GNDD 31 XTAL_OUT 30 XTAL_IN 29 CCEC 28 GNDD 27 VDDP1 26 VDDP1 25

GNDD 1 GNDD 2 TST1 3 TST2 4 GNDD 5 GNDD 6 LED_G 7 LED_R 8

NXQ1TXL5

33 VSS

GNDD 9 VSEN 10 TMF 11 ASENZ 12 GNDD 13 VDDP2 14 VDDP2 15 VDDP2 16

GNDD 17 VSEN 18 TMF 19 ASENZ 20 GNDD 21 VDDP2 22 VDDP2 23 VDDP2 24

OUT1 OUT1 GNDD GNDD OUT2 OUT2

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