CYD8012

Wireless Charging Transmitter Module

Datasheet

(5W/7.5W/10W)

Content

1. Introduction

CYD8012 is a single-coil wireless power transfer transmitter solution using A11 coil of the Qi power transmitter design. This solution delivers efficient wireless charging performance with a maximum charging efficiency up to 82%. The maximum transmission power is 10W, and the maximum charging distance is 7mm. It has many protection measures and alarm functions such as foreign object detection (FOD). It has intelligent output power control and conversion efficiency control to achieve optimal temperature-rising control.

2. Application scope

- ✓ Smartphones such as Apple, Samsung, and others that support wireless charging or wireless fast charging.
- ✓ Consumer electronics such as: desk lamps, Bluetooth speakers, Bluetooth headsets, portable intelligent electronic products, intelligent wearable products.
- ✓ Furniture wireless charging expansion accessories for offices, conference rooms, airports, cafes, restaurants, shopping malls, etc.

3. Characteristics

3.1 Technical parameters

Parameter	Description
Product function	Compliant with WPC1.2.4 power transmitter design A11 single coil wireless charging
Charging method	Induction coupling
Operating frequency	110 - 205KHz
Input power	9V/1.27A, 15W (maximum)
Transmission power	9V/1.10A, 10W (maximum)
Maximum conversion efficiency	82%
Maximum charging distance	7mm
No-load power consumption	120 - 650mW
Protection mechanism	FOD, Over-temperature, Over-current, Low-voltage, Short-circuit
LED indicator	Green, Red

3.2 Maximum ratings

Parameter	Symbol	Rating	Unit
Operating temperature	Ta	-20 to +65	℃
Storage temperature	Tstg	-40 to +150	℃
Storage humidity	Tstr	<95%	RH
Maximum input voltage	Vcc	9.5	V
Maximum steady-state current	Imax	2	A

3.3 Parameters and ratings

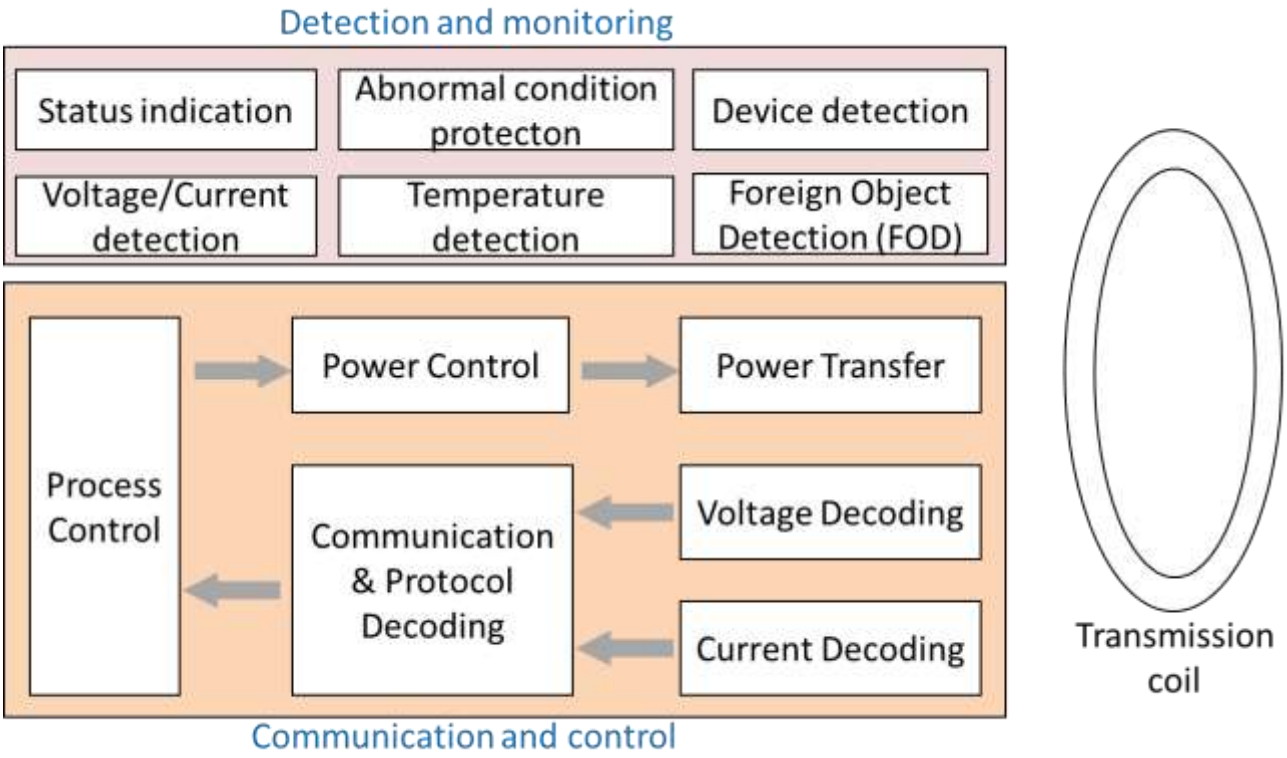
Parameter	Test conditions	Typ.	Min.	Max.	Unit
Standby power consumption	Vcc = 9V, no load	110	100	250	mW
Operating frequency	Adjust load and distance	/	110	205	KHz
Maximum power transfer efficiency	Vcc=9V	80	75	82	%
Input voltage	10W output	9	7.5	9.5	V
Input voltage	7.5W output	9	7.5	9.5	V
Input voltage	5W output	9	4.8	9.5	V
Output power	Vcc = 9V	10	/	/	W
Charging distance	5W/10W output	5	/	7	mm
Over-temperature protection	-	60	55	65	℃

3.4 LED indication

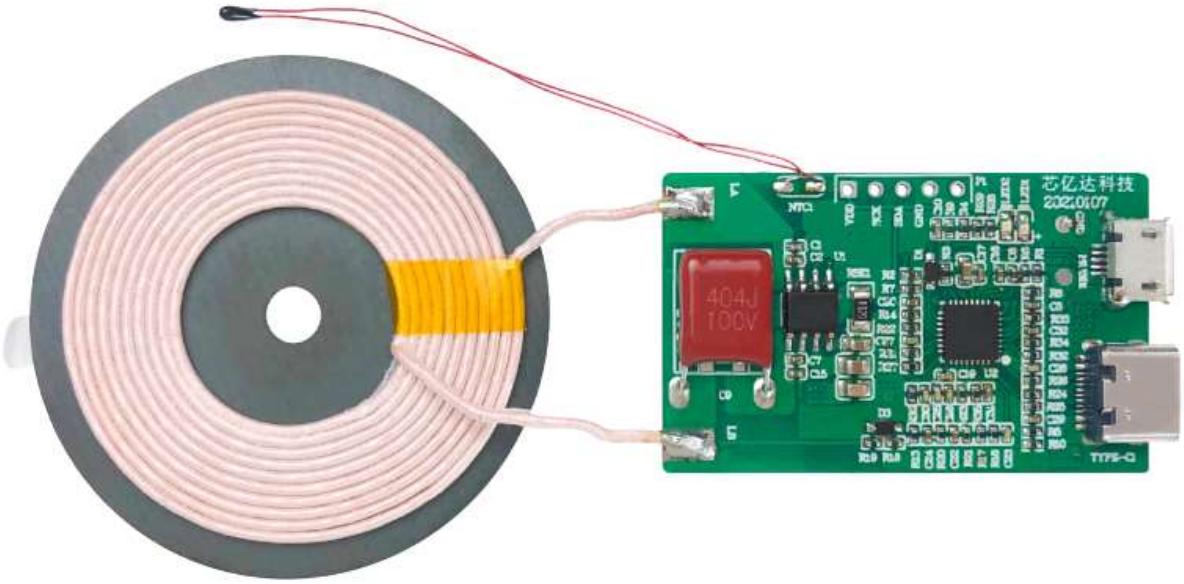
The Green/Red LED light indicates the module's status

Status	Color
Power on	Green (0.5 sec.) → Red (0.5 sec.) → Green & Red (0.5 sec.)
Standby (no load)	off
Charging	Green
Fast charging	Red
Fully charged	Green & Red
Foreign Object Detection	Green & Red flashing alternatively
Input power low voltage	Red flashing

4. Functional diagram

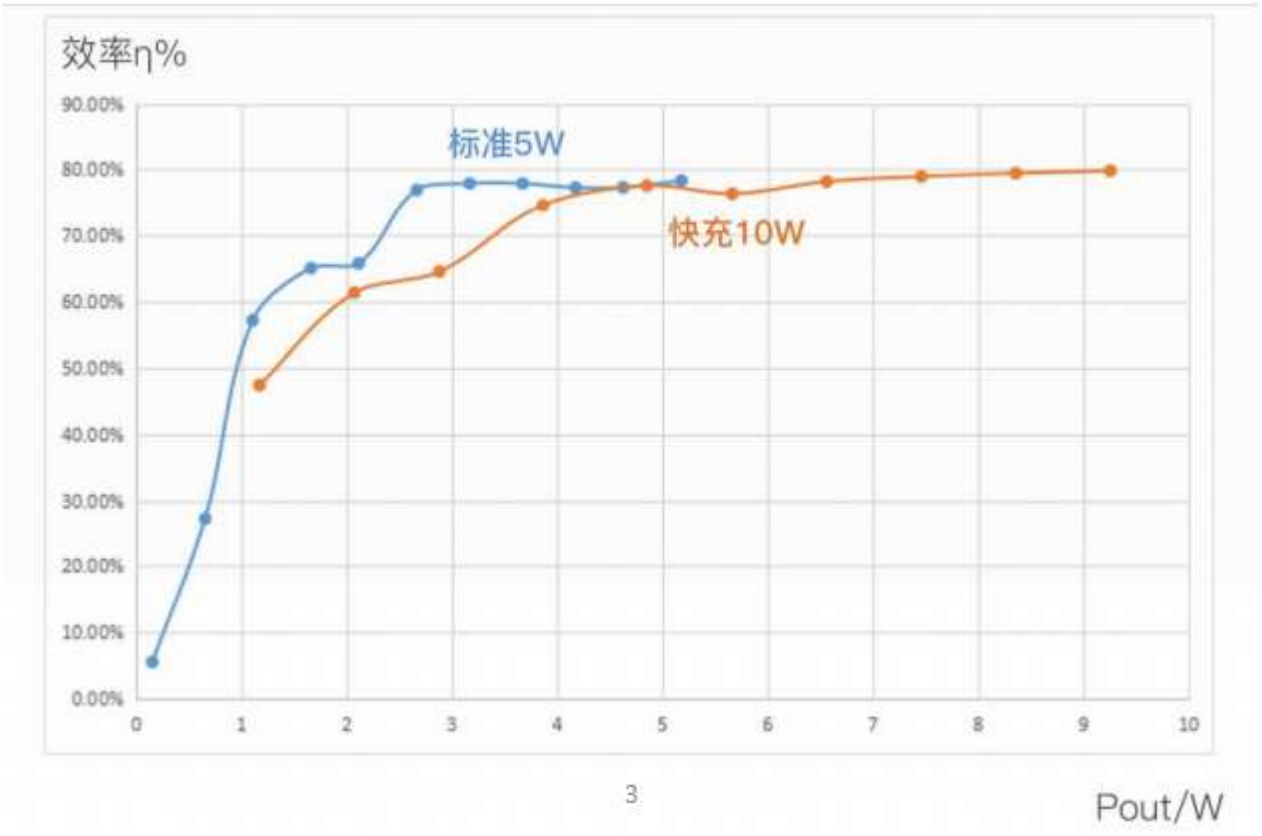


5. Picture



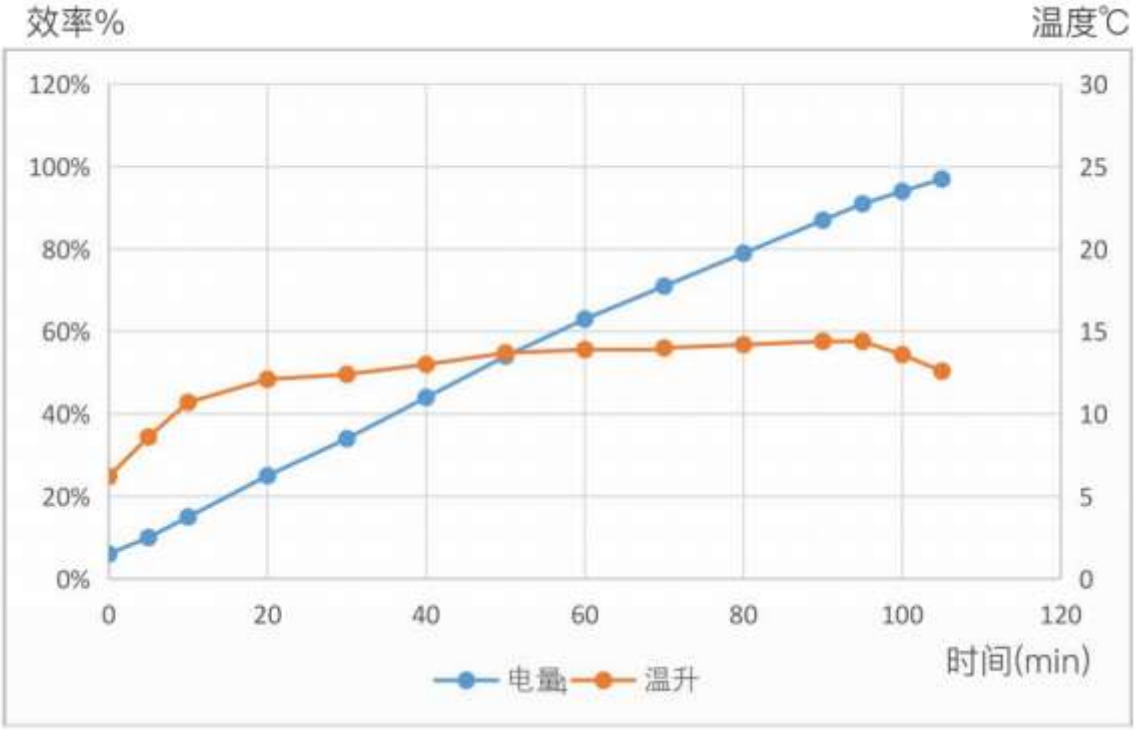
6. Measurement data

Power transfer efficiency vs. output power



5W Receiver		10W Receiver	
Pout/W	η	Pout/W	η
0.15	5.58%		
0.65	27.28%	1.17	47.42%
1.11	57.20%	2.07	61.36%
1.66	65.08%	2.88	64.55%
2.11	65.78%	3.87	74.61%
2.67	76.96%	4.85	77.60%
3.17	77.94%	5.66	76.40%
3.67	77.93%	6.56	78.24%
4.17	77.31%	7.46	78.99%
4.63	77.33%	8.36	79.49%
5.18	78.37%	9.26	79.84%

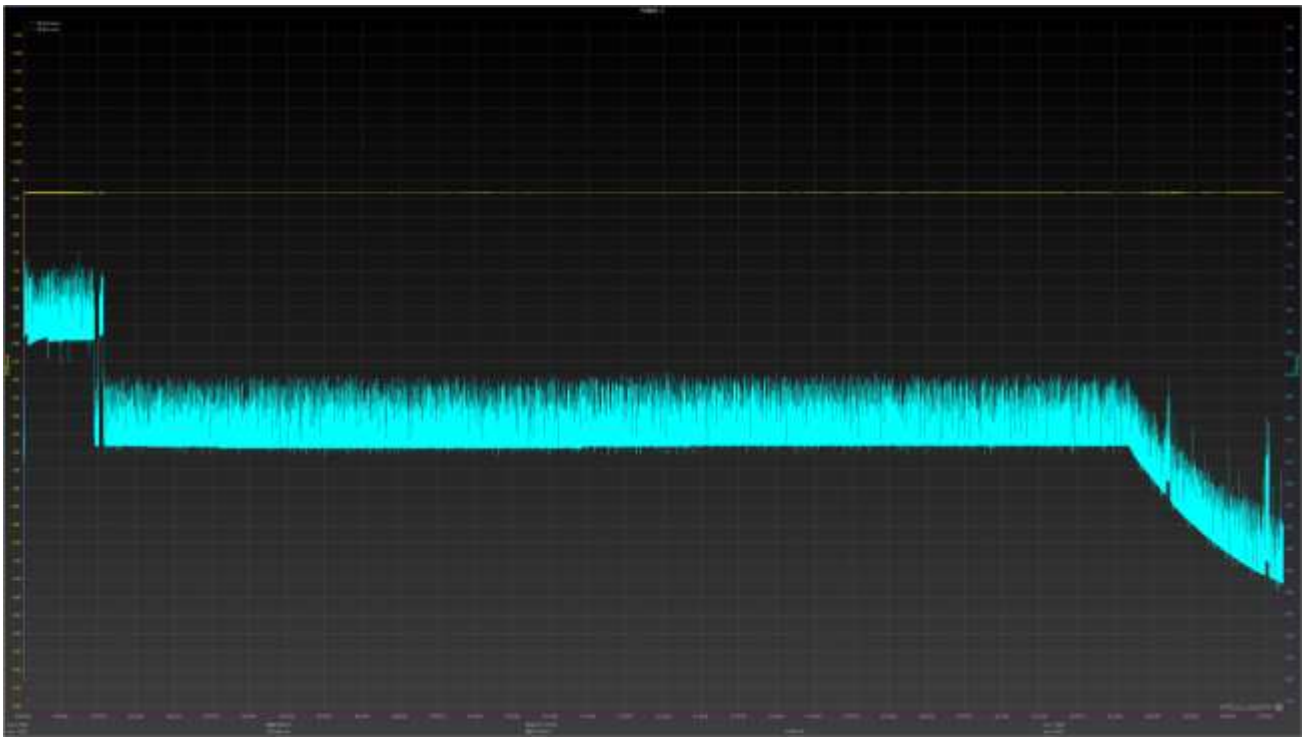
Samsung S7 Charging vs. temperature rising



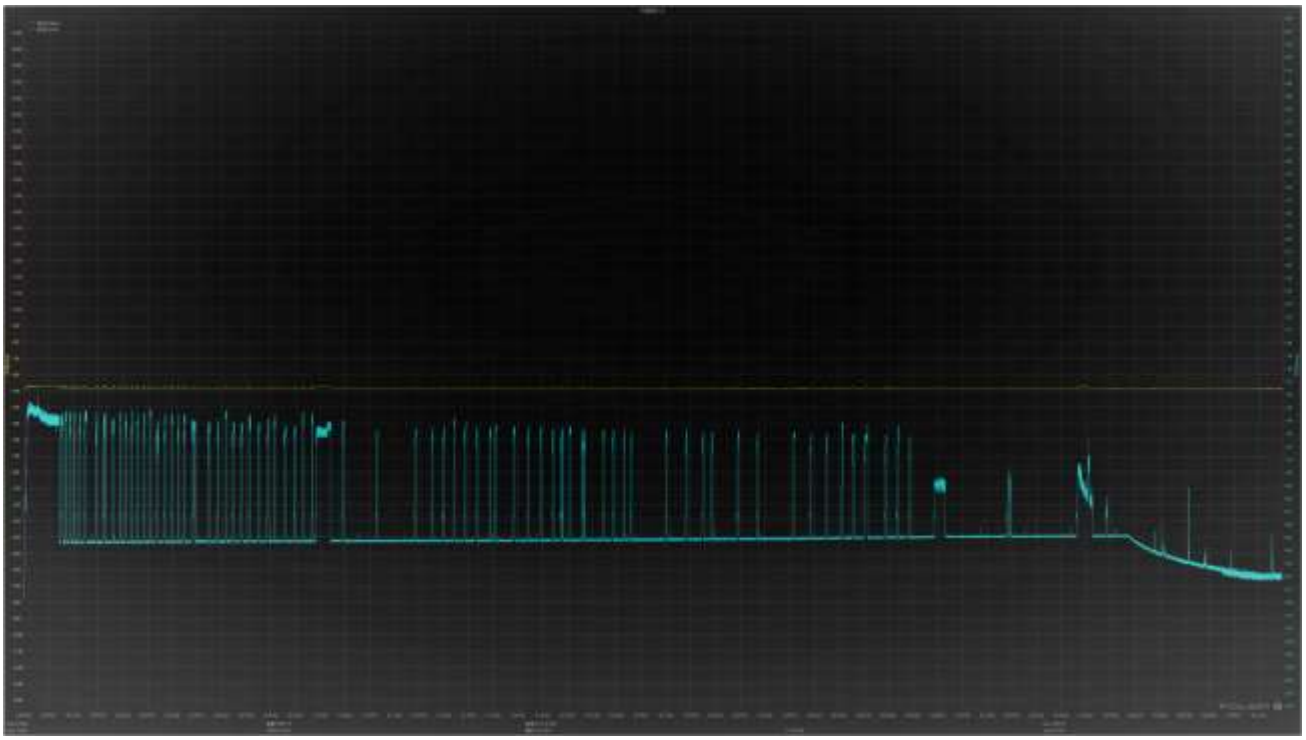
Time(min）	Battery power capacity	S7 temperature rising (℃）
0	6%	6.2
5	10%	8.6
10	15%	10.7
20	25%	12.1
30	34%	12.4
40	44%	13
50	54%	13.7
60	63%	13.9
70	71%	14
80	79%	14.2
90	87%	14.4
95	91%	14.4
100	94%	13.6
105	97%	12.6

7. iPhone X Charging curve

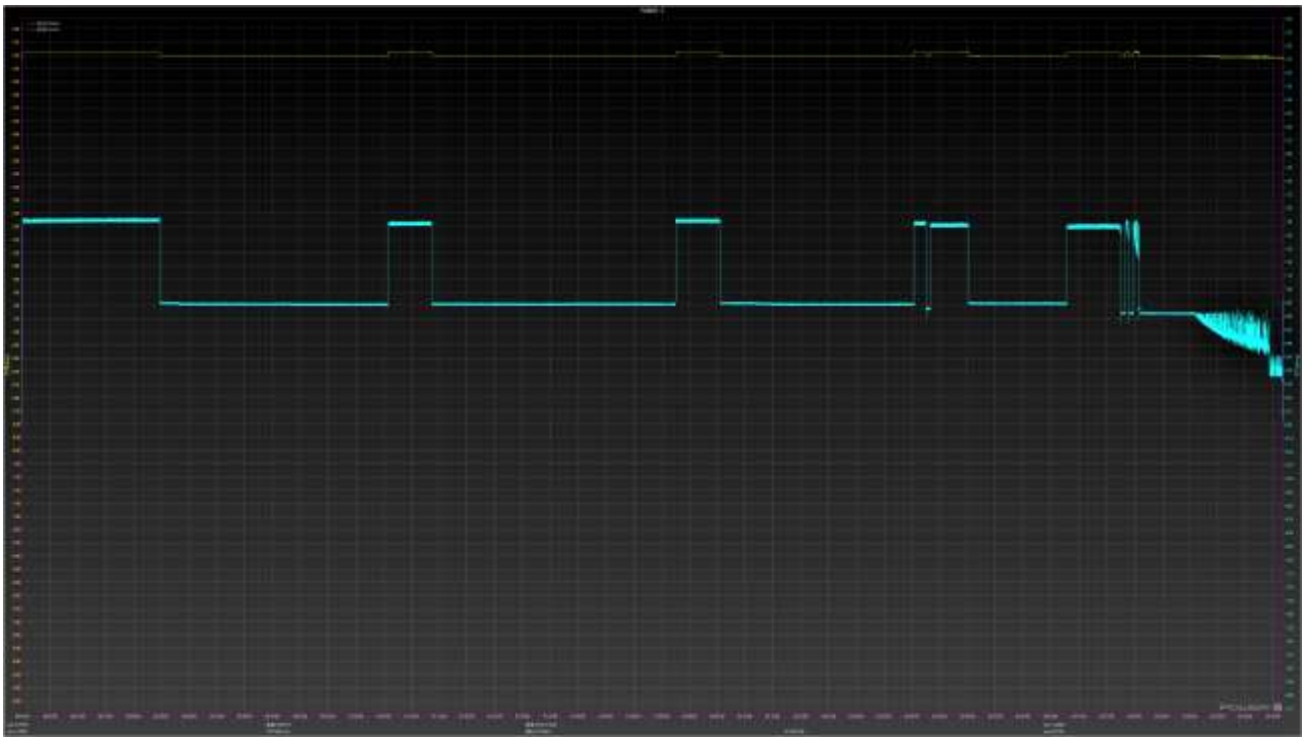
8. SAMSUNG S7 Charging curve



9. iPhone 8 Charging curve



10. XIAOMI MIX2S Charging curve



11. Compatibility test

Receiver Device	Compatible or not
iPhone 8	√
iPhone X	√
SAMSUNG S6	√
SAMSUNG S7	√
XIAOMI MIX2S	√
Wireless power receiver (BQ5013B)	√
Wireless power receiver (NE6053)	√