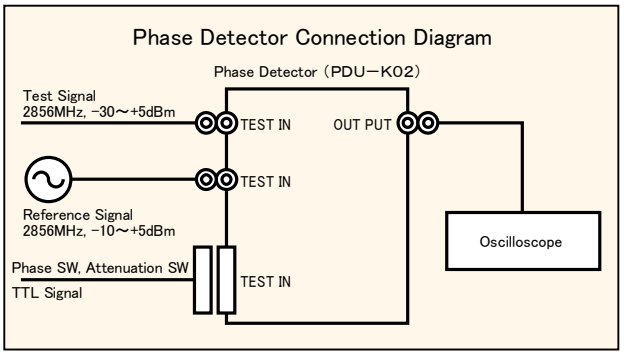
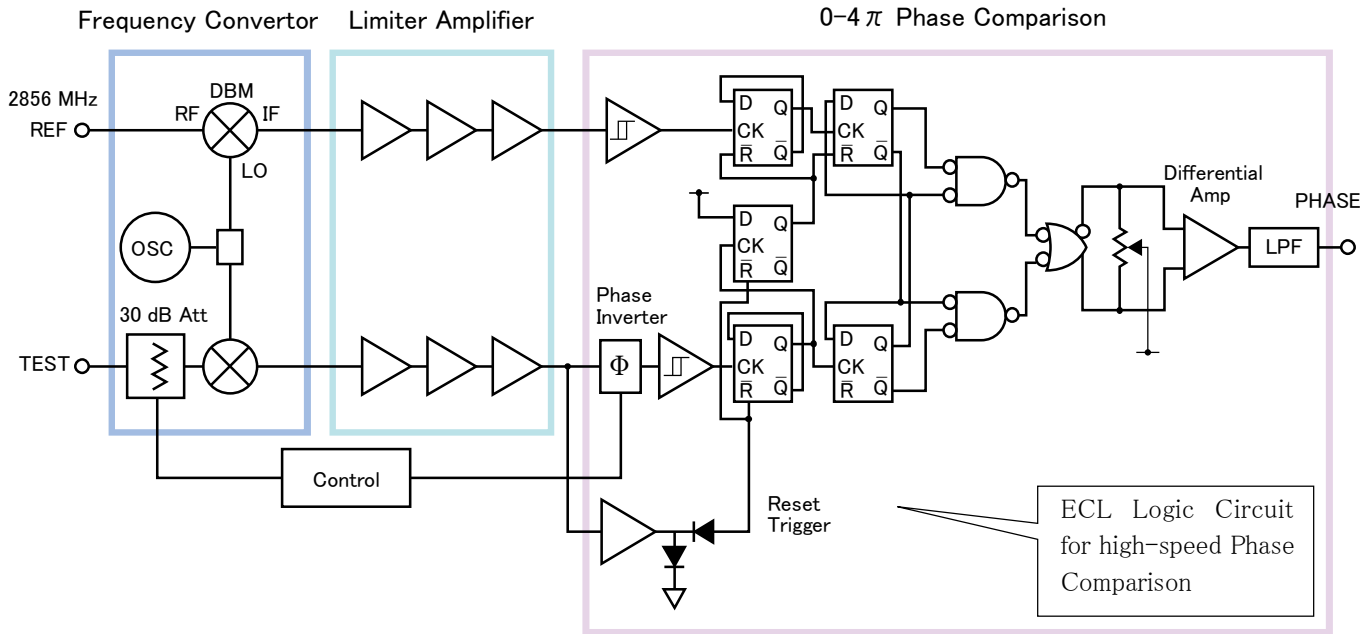
Phase Detector PDU-K02

- Phase Detection Range 540° over
- High Detection Resolution 0.2°
- High Dynamic Range -30dBm～5dBm
- High Pulse Response 80ns

Specifications

1.	Frequency	2856MHz±5MHz
2.	Measured Power Range	Teat Signal -30～+5dBm Reference Signal -10～+5dBm
3.	Maximum Input Power	20dBm
4.	Input RF Pulse width	300ns～CW
5.	Phase detecting range	540° min. within a range of -360° ～+360°
6.	Phase Detection Accuracy	Test Signal Power -10～0dB: ±1° max Out of the above Range: ±2° max These Accuracies are kept when the test signal level is 0dBm±1dB
7.	Input VSWR	1.2max
8.	Output voltage	-3.6～+3.6V(10mV/degree)within a range of -360° ～+360°
9.	Response Speed	Output rise-time: 80ns max. 10%～90% Output delay-time: 250ns max. from 90% RF input to 90% output voltage
10.	Packaging	NIM standard 2 width module

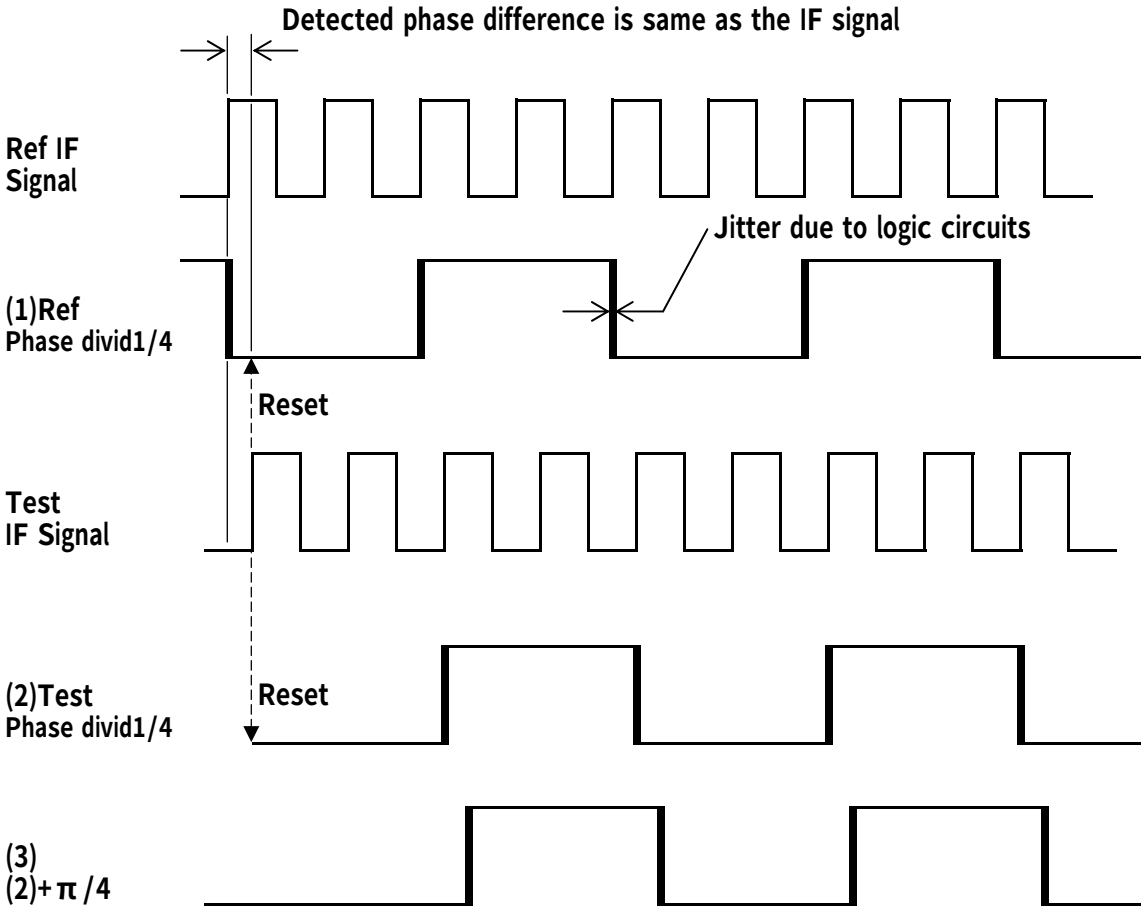




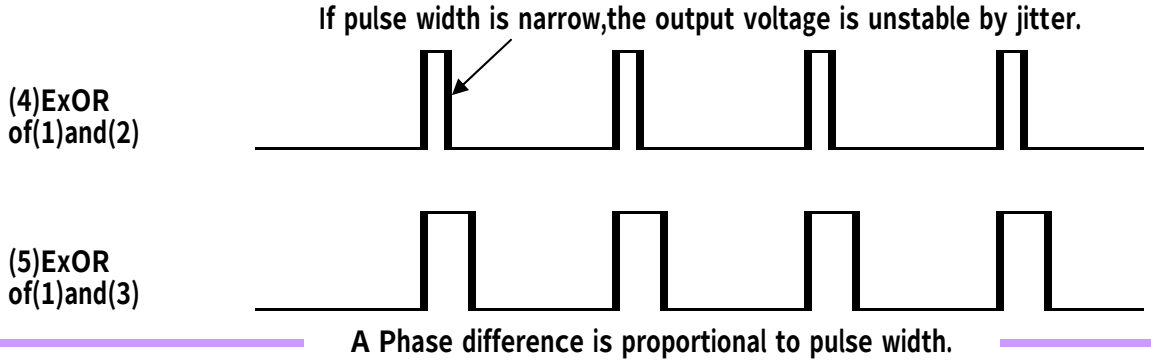
Models for 324MHz, 972MHz, 5712MHz and 11424MHz are available, and other frequency models are acceptable

NIHON KOSHUHA Co., Ltd.
Head Office : 1119 Nakayama-cho, Midori-ku, Yokohama, Japan 226-0011
E-mail : sales@nikoha.co.jp

The theory of phase detector



Added the fixed phase difference, then internal phase difference becomes more than π/4.Then the movement is stable.

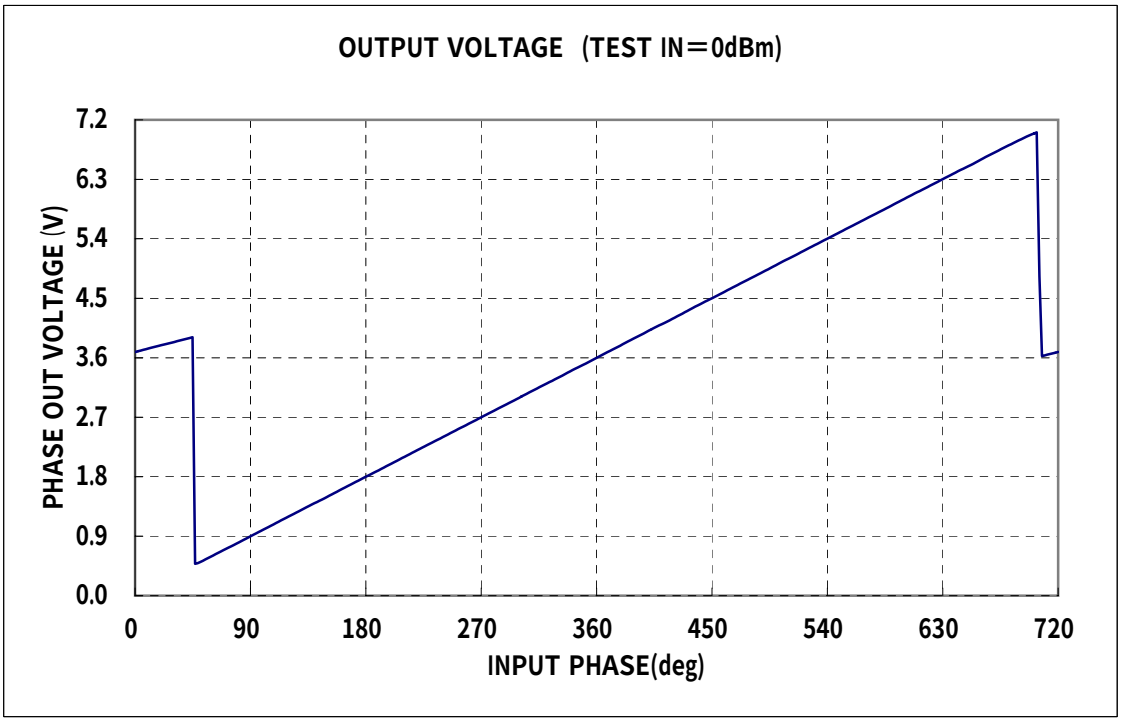


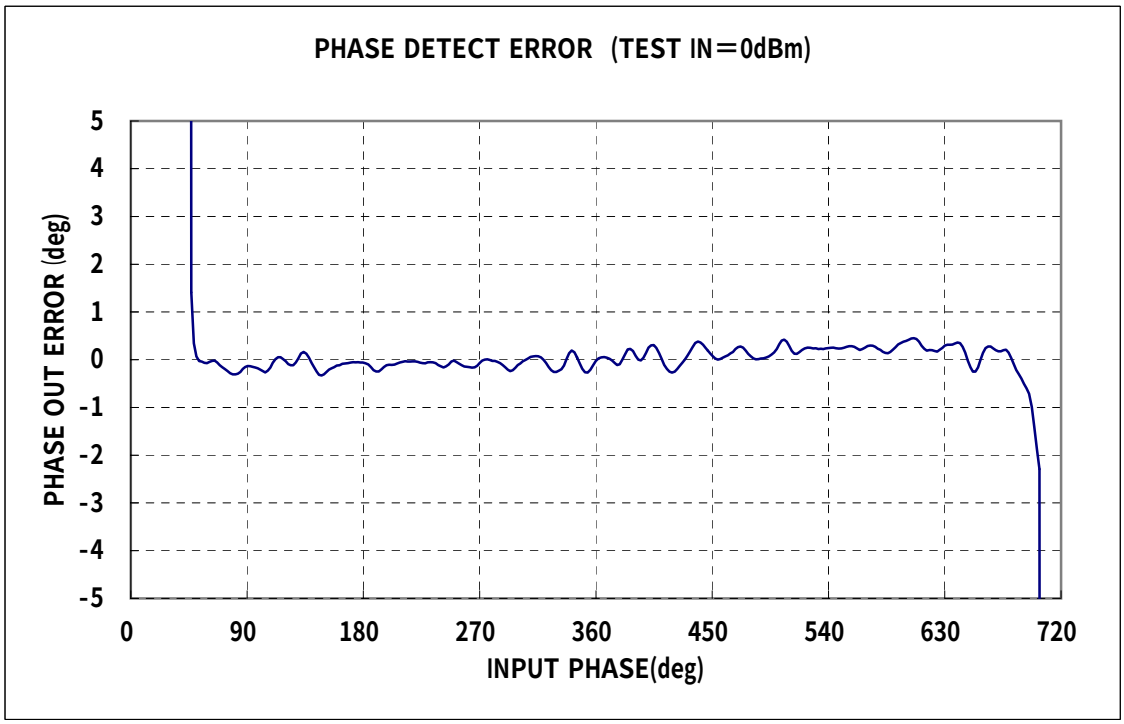
A Phase difference is proportional to pulse width.

Integrated the output pulse and converted it into a voltage signal.

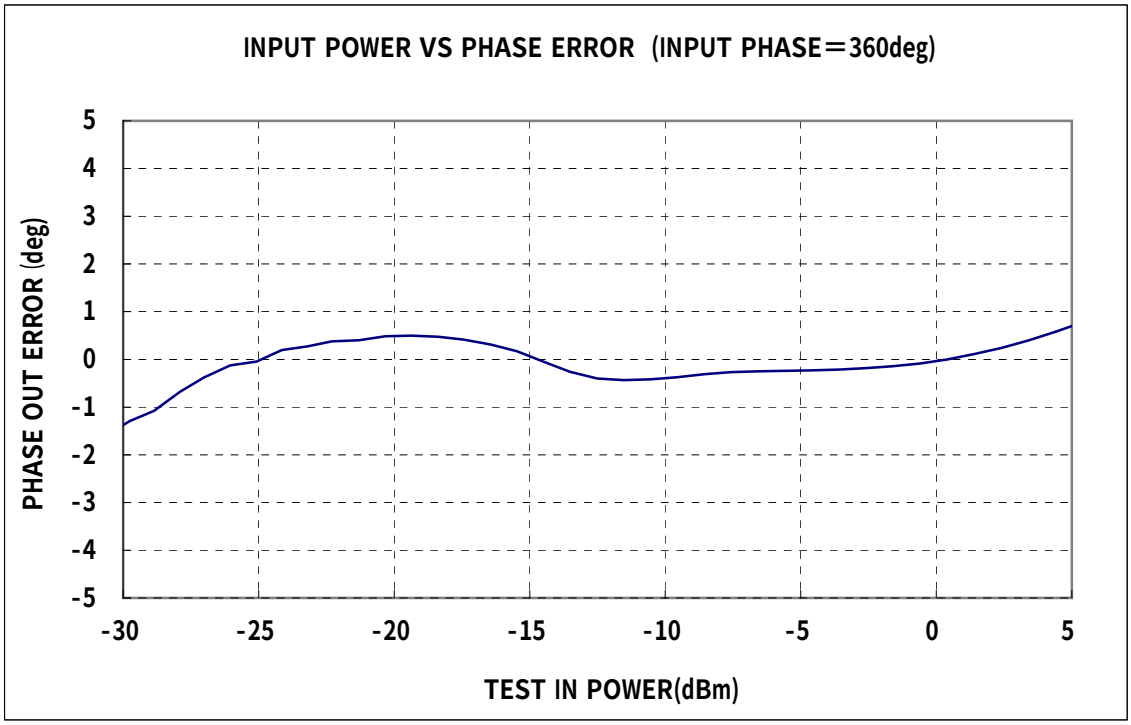
The output voltage is propotional to pulsewidth, which is namely the phase difference.

Test Data 1

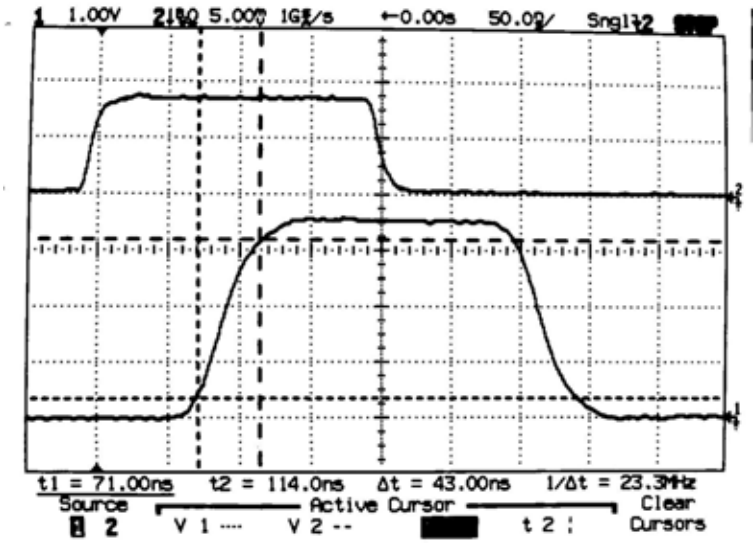

OUTPUT VOLTAGE (TEST IN=0dBm)
PHASE OUT VOLTAGE (V)
7.2
6.3
5.4
4.5
3.6
2.7
1.8
0.9
0.0
0
90
180
270
360
450
540
630
720
INPUT PHASE(deg)


PHASE DETECT ERROR (TEST IN=0dBm)
PHASE OUT ERROR (deg)
5
4
3
2
1
0
-1
-2
-3
-4
-5
0
90
180
270
360
450
540
630
720
INPUT PHASE(deg)

Test Data 2



PHASE DETECT RISE-TIME



CH1
TEST IN PULSE
INPUT TRIGR
10mV／div

CH2
PHASE OUT
OUTPUT VOLTAGE
1V／div

Time Scale
50ns／div