Precision Tunable Phase Shifter

Millimeter Wave Phase Shifter

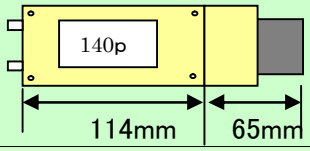
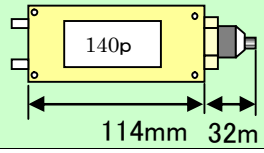
◆Features:·····High-precision mechanical system where even a V-band band can be used

◆Wide Band:····· DC to 4GHz, DC to 60GHz

◆Reatability (resolution):····· 0.01666ps

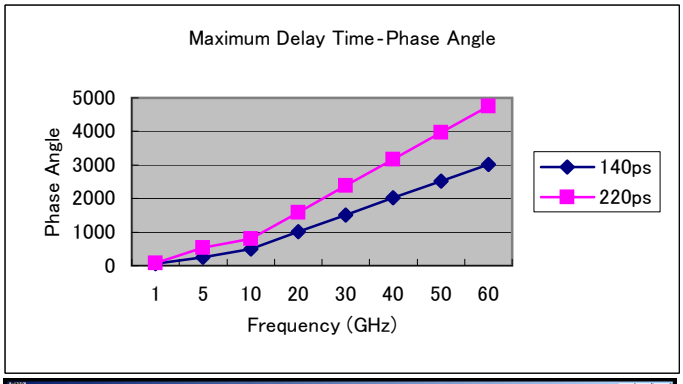
◆Can be controlled by PC:····· USB interface

◆Option:····· Custom delay circuit settings can be done

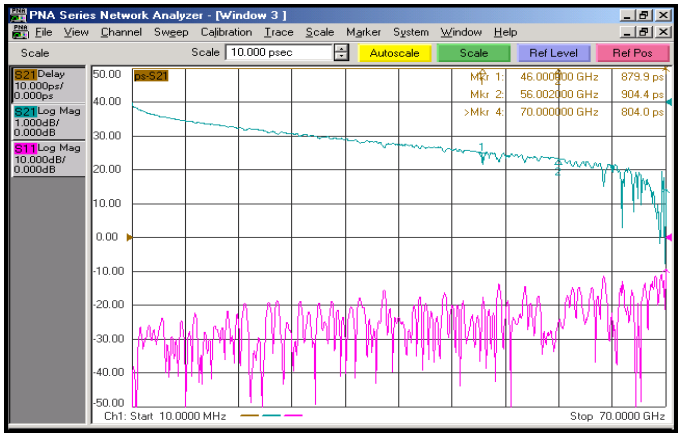
Model Number / Item	Condition	P45K140	P45K220	P65V140	P65V220
Frequency (GHz)	MIN	DC			
	MAX	40		60	
Delay Time (ps)	MIN	698	828	720	845
	MAX	838	1050	860	1070
Variable Phase Amount	deg/GHz	50.4			
VSWR	DC to 20GHz	1.15	1.15	1.2	1.2
	20 to 45GHz	1.3	1.3	1.3	1.4
	45 to 65GHz			1.3	1.4
Insertion Loss (dB)	DC to 20GHz	1.0	1.1	1.4	1.9
	20 to 45GHz	1.2	1.7	2.0	2.8
	45 to 65GHz			2.5	3.8
	With Stepping Motor Appearance / Measurements / Weight	Size(mm)			
		114+65×43×25	146+65×43×25	114+65×43×25	146+65×43×25
		Weight(g)			
		360	460	360	460
	Vernier Dial Type Appearance / Measurements / Weight	Size(mm)			
		114+32×43×25	146+32×43×25	114+32×43×25	146+32×43×25
		Weight(g)			
		290	380	290	380

Phase Angle and Maximal Delay of the Phase Shifter

Frequency GHz(Max)	1	5	10	20	30	40	50	60
140ps type	50.4	252	504	1008	1512	2016	2520	3024
220ps type	79.2	528	792	1584	2376	3168	3960	4752



*The 140ps type moves up to 42mm in physical length. 1mm (3.333ps) per rotation.
*The 220ps type moves 66mm in physical length. 1mm (3.333ps) per rotation.
*Through the stepping motor, 1mm per rotation can be divided into 1000 with a half-step.
*The actual measuring data S21 when the 140ps type is increased to the maximum is 65GHz and at a low loss of 2.5dB. S11 is 16dB.



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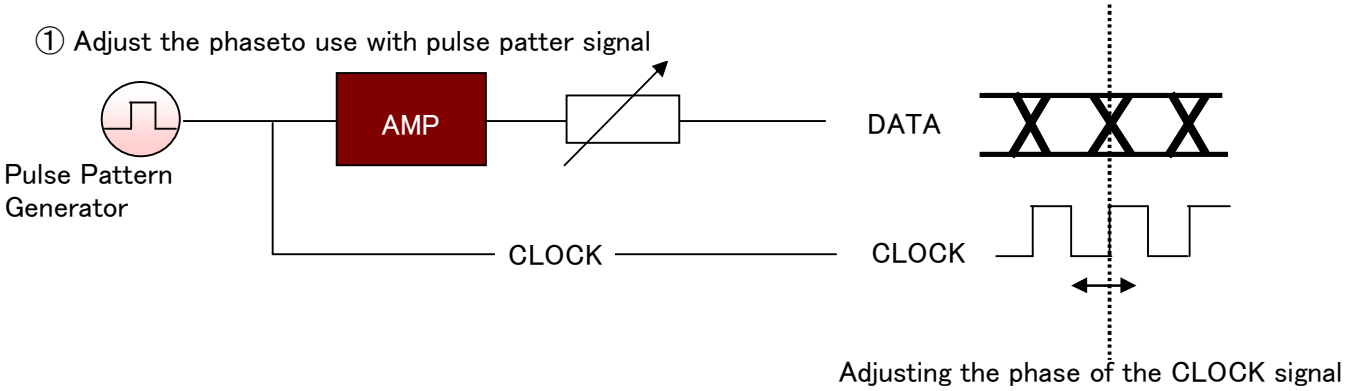
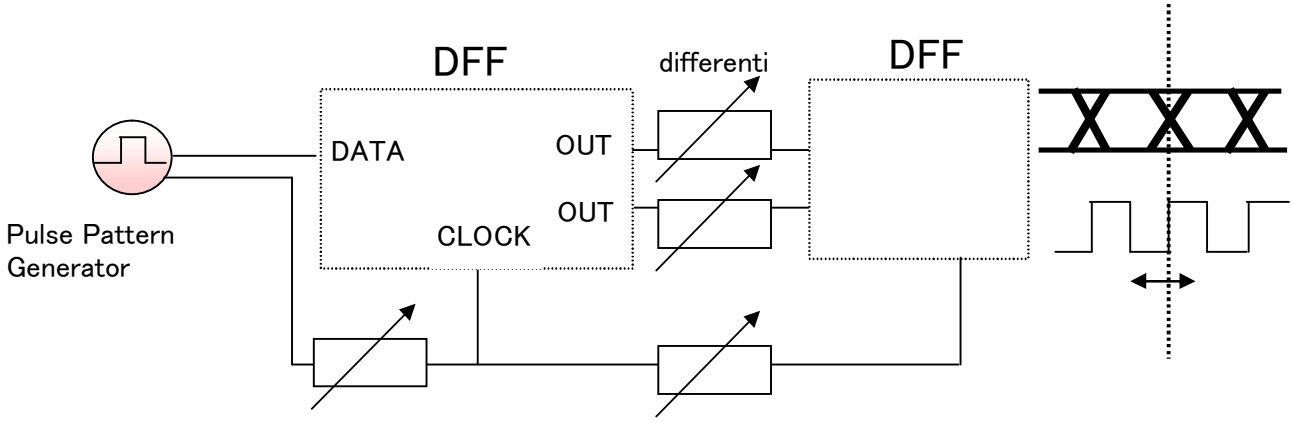
Example: At Phase Shift System

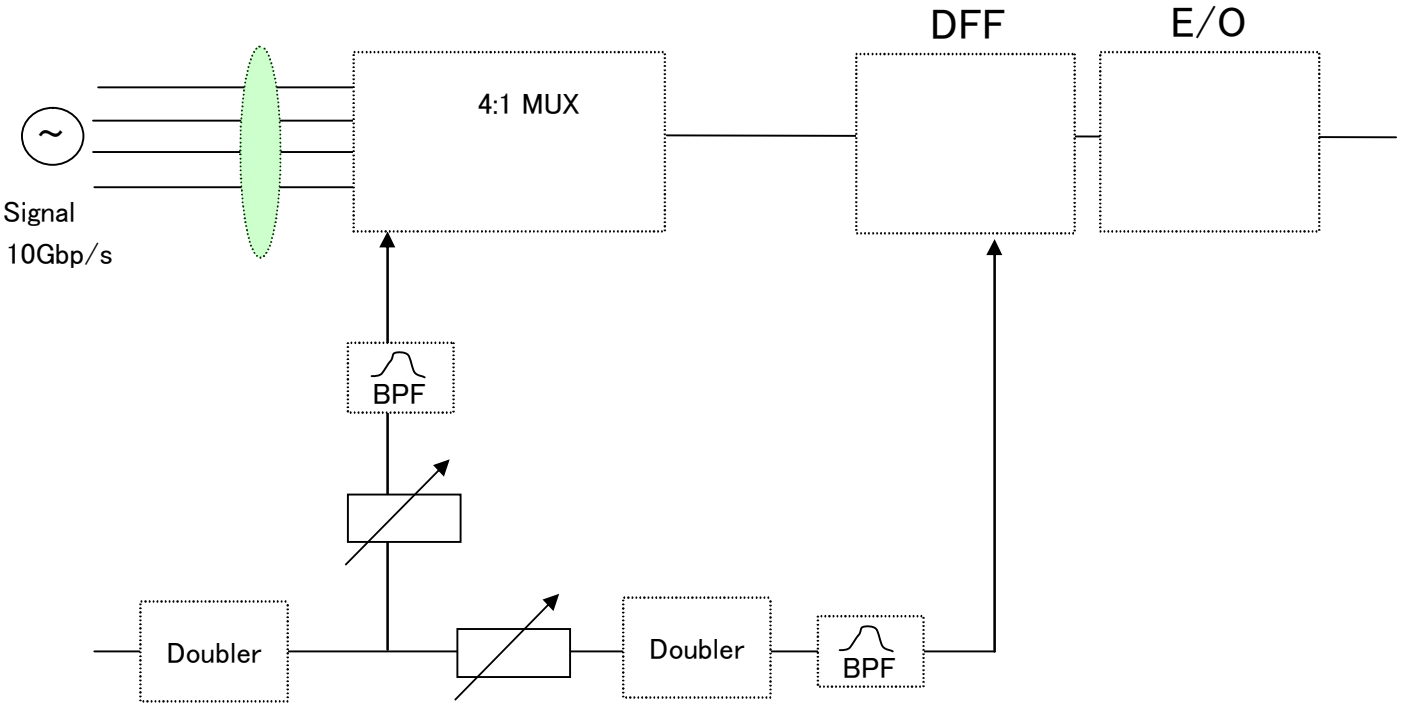
① Adjust the phaseto use with pulse patter signal



② Adjustments to keep making the bit error of the differential signal circuit close to 0



③ Precise tests with optical communication circuitsclose to 0



*Do not hesitate to contact us for inquiries concerning electrical characteristics, mechanical requirements, etc.