

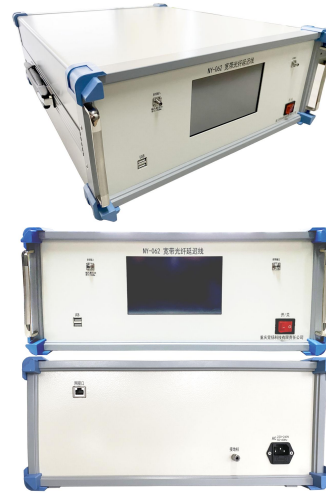
NY062 series Millimeter Wave Broadband Delay Line

Feature

- ※ Controllable delay
- ※ High stepping accuracy
- ※ Low signal distortion
- ※ Millimeter wave Ultra wideband

Application

- ※ Radar simulation
- ※ Signal processing
- ※ Electronic war



Description of NY062 Series

NY062 series millimeter wave broadband delay line is mainly composed of high-power electro-optical conversion module, electro-optical modulation module, optical fiber delay module, photoelectric conversion module, delay control and visual touch screen system, network remote control system, RF input / output interface and power supply system, etc. The main function is to delay the millimeter wave signal received by the radar(The specific delay can be set on the touch screen) and then input it to the receiving system of the machine room. In this process, the millimeter wave signal through electric / optical conversion, optical optical delay, optical / electrical conversion and matching amplification process. Due to the natural ultra strong anti-interference ability of optical fiber communication, it can avoid the interference of spatial leakage signals caused by traditional cable delays. Based on this anti-interference characteristic, the receiving system can obtain a reference signal that is closest to the radar transmitted signal, thereby accurately calibrating the system.

Input signal form: common ground radar pulse or continuous wave signal, pulse group or pulse rapid frequency conversion signal.

Schematic

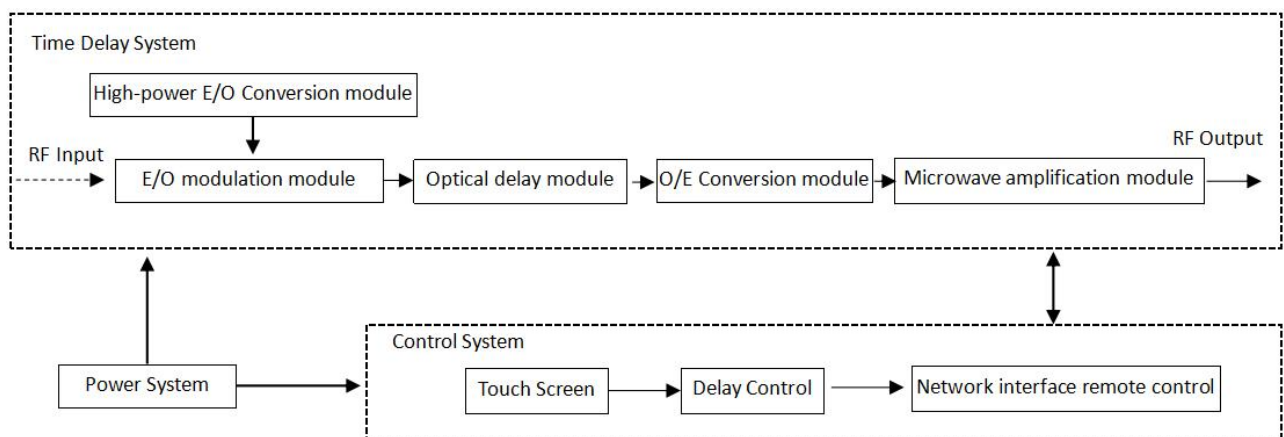


Figure 1. Principle block diagram of NY062 series

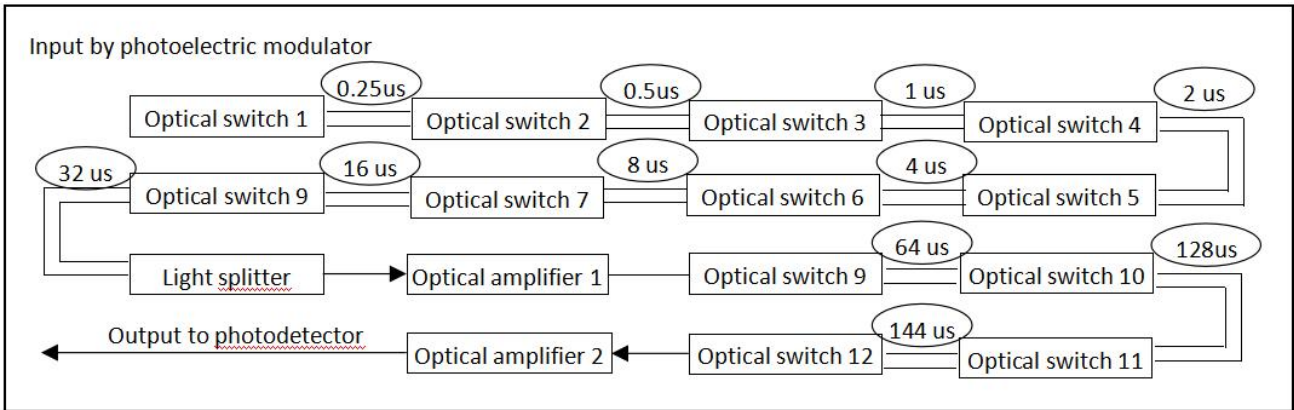


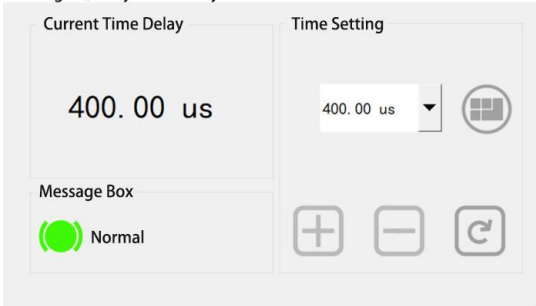
Figure 2. Internal architecture diagram of optical fiber delay module

Electrical / Optical Characteristics

Parameter	Value			Unit	Remarks
	Min	Typ.	Max		
Frequency	17	-	40	GHz	-
Flatness	-	-	2	dB	Within any 2GHz
Time delay	0.25	-	400	us	-
Altitude	37.5	-	60000	m	-
Time delay step	-	0.25	-	us	-
Altitude step	-	37.5	-	m	-
Time delay accuracy	-	-	0.05%	-	-
Insertion loss	-	-	40	dB	-
Group delay fluctuations	-	-	1	ns	K or Ka band
	-	-	2	ns	Full frequency band
Clutter rejection ratio	60	-	-	dBc	-
Harmonic suppression ratio	30	-	-	dBc	-
Maximum input power		-	15	dBm	-
Pass-through suppression	60	-		dBc	-
VSWR	-	-	1.4	-	50Ω, Full frequency
Working temperature	-10	-	+35	°C	-
Storage temperature	-20	-	+45	°C	-
Connector	Type K				
Power supply	220VAC/50Hz				

Display function

Setting Query Control system

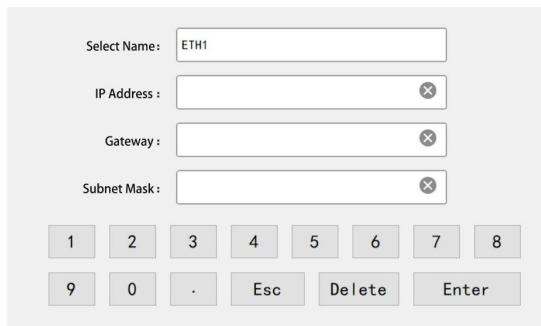


(a) Main interface

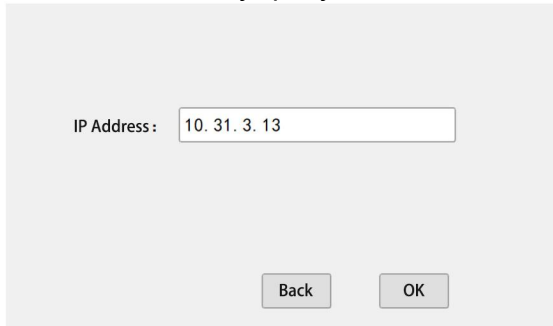
Historical Query



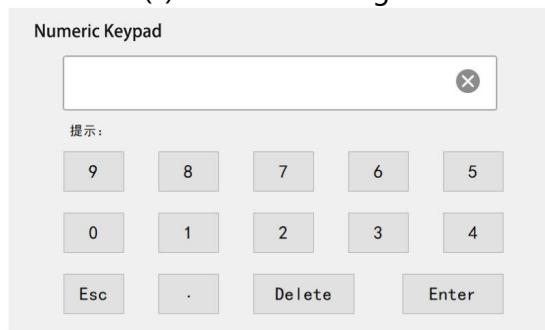
(b) History query



(c) Network Settings



(d) IP address



(e) Numeric keyboard

Figure 3. Touch screen control

Item	Functional Description
Query	Enter the history query interface, and display the history record. As shown in Figure b.
Settings	Enter the network setting interface (Figure c) to set the local IP address, gateway, and subnet mask
Control System	Connect to the background program to set up the background IP address. As shown in Figure d.
	Displays the current delay status. Press "" to display and quickly select the delay time set for the last 5 times
	Enter the numeric keyboard interface and set the delay. As shown in Figure e.
	Increase by step of 0.25us over the delay time currently displayed
	Step is reduced by 0.25us based on the currently displayed delay time
	The delay time can be set to the value displayed in the current display box "", and the setting result can be returned to the message box on the main interface.
	Delay state was set successfully
	The delay state setting is abnormal

Typical curve

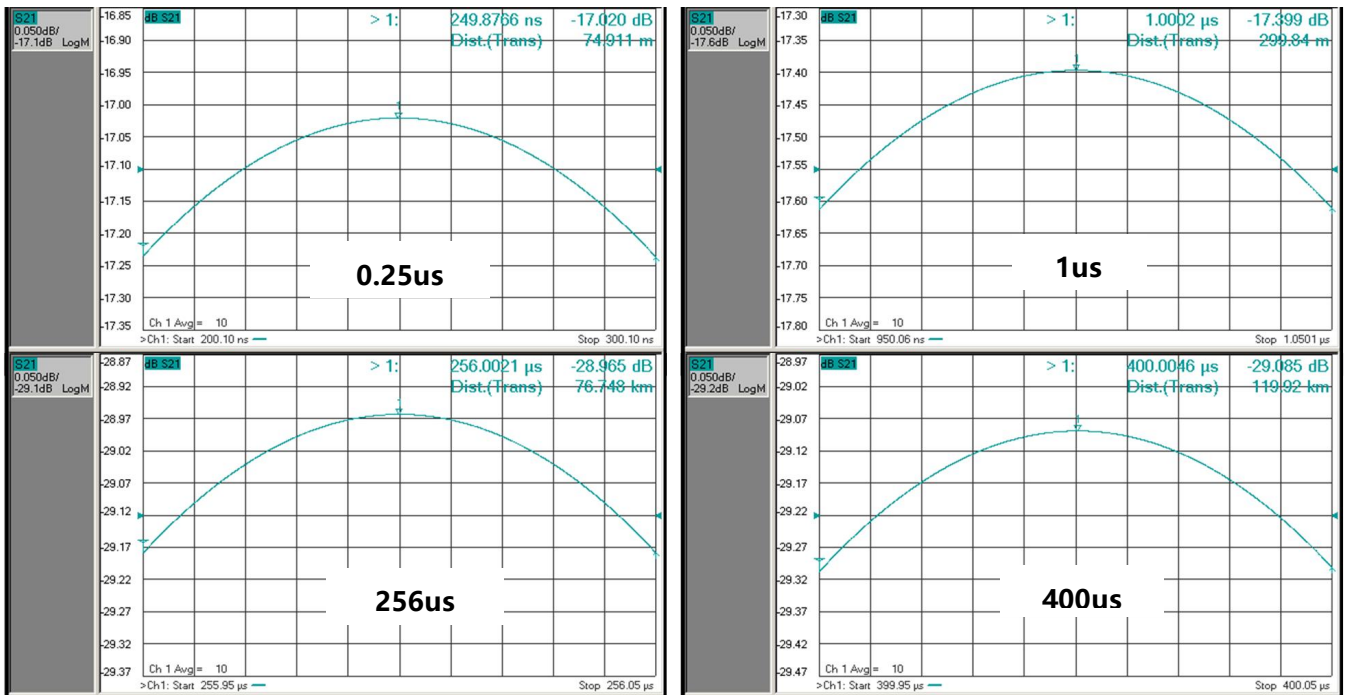


Figure 4. Typical Time delay

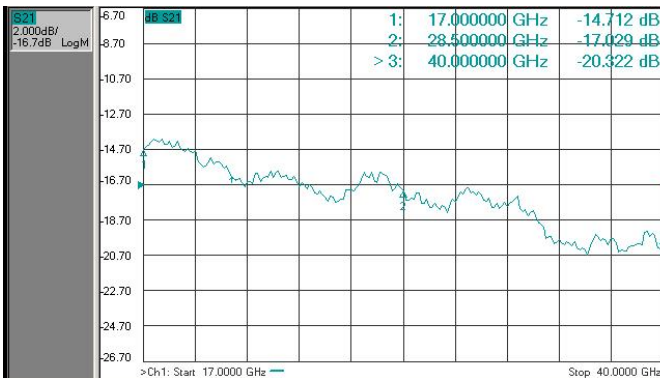


Figure 5. S21 Curve

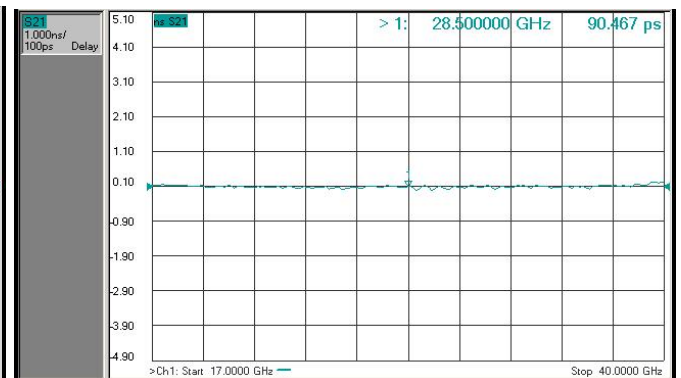


Figure 6. Group time delay

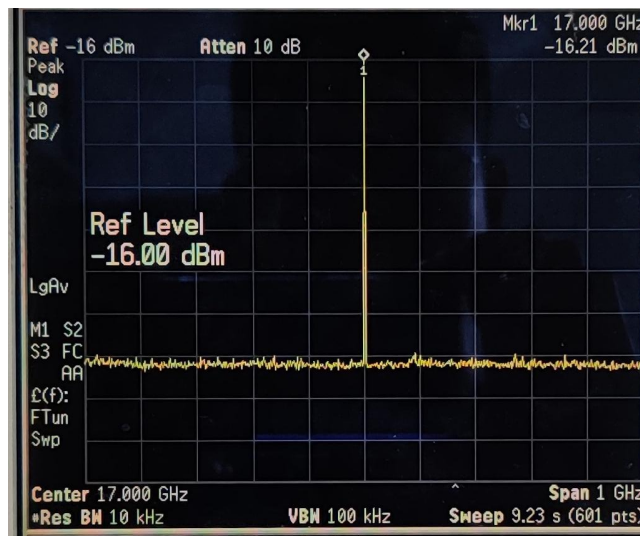


Figure 7. Stray inhibition test diagram (input signal power 0 dBm)

Dimension and Interface

NY062 millimeter wave broadband delay line integrated in a standard 19-inch 4U chassis. The chassis is made of aluminum alloy, and the middle of the front panel is a touch screen, which can display the current delay state and realize the switching function of delayed state.

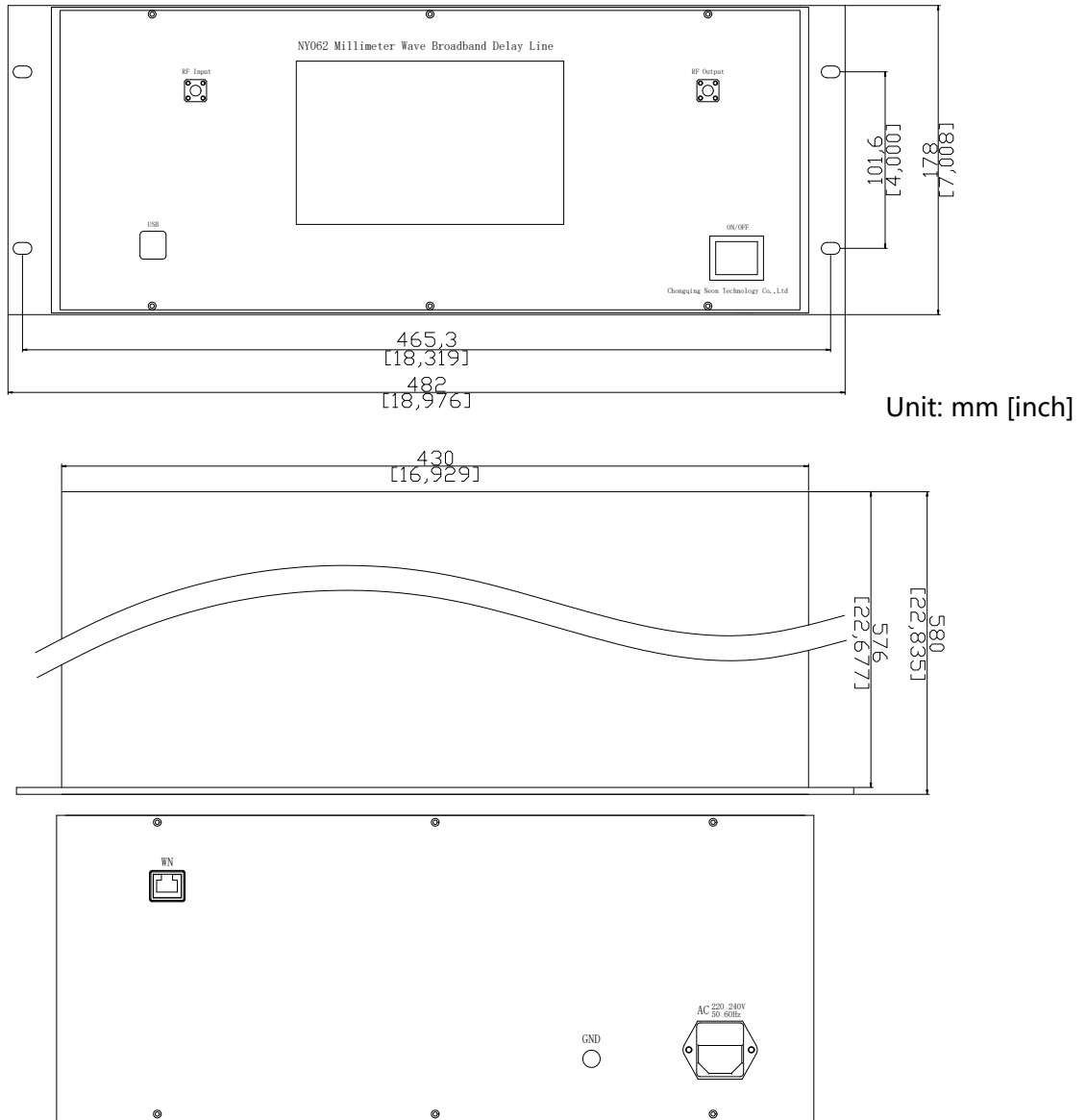


Figure 8. NY062 Dimensions

Interface definition of NY062 Series							
Interface	RF input	RF output	USB	ON/OFF (Power)	WN (Network interface)	GND	AC (Power interface)
Interface Type	SMA-K	SMA-K	Type -A	SPST KCD 4	YT-RJ45	M6	220V/AC

- This series of products is customized, and the product information in this article is for reference only. NY062 series Millimeter Wave Broadband Delay Line