HYTEM

MANUAL

3000-6000MHz Phase Shifter
Local or USB control with LCD

Type 21.02.16

CARACTERISTIQUES TECHNIQUES
ET UTILISATION

TECHNICAL SPECIFICATIONS AND USE

MAN 21.02.16
JAN 2021

GARANTIE

WARRANTY

La maintenance de cet appareil doit être assurée par du personnel qualifié muni des équipements appropriés.

Pour tout problème de maintenance, veuillez contacter notre Service Clients :

The maintenance of this instrument can only be performed by qualified personnel provided with the suitable equipments.

For any maintenance problems, contact our Customer Support Service:

HYTEM
2, bis rue du Bois Fourgon
91580 VILLECONIN
FRANCE
Tél : (33) 01 60 80 59 00
Fax : (33) 01 60 80 33 22
Email : hytem@hytem.net

RF USB Phase Shifter
3000 to 6000MHz

HYTEM

CARACTERISTIQUES ET UTILISATION ***TECHNICAL SPECIFICATIONS AND USE***

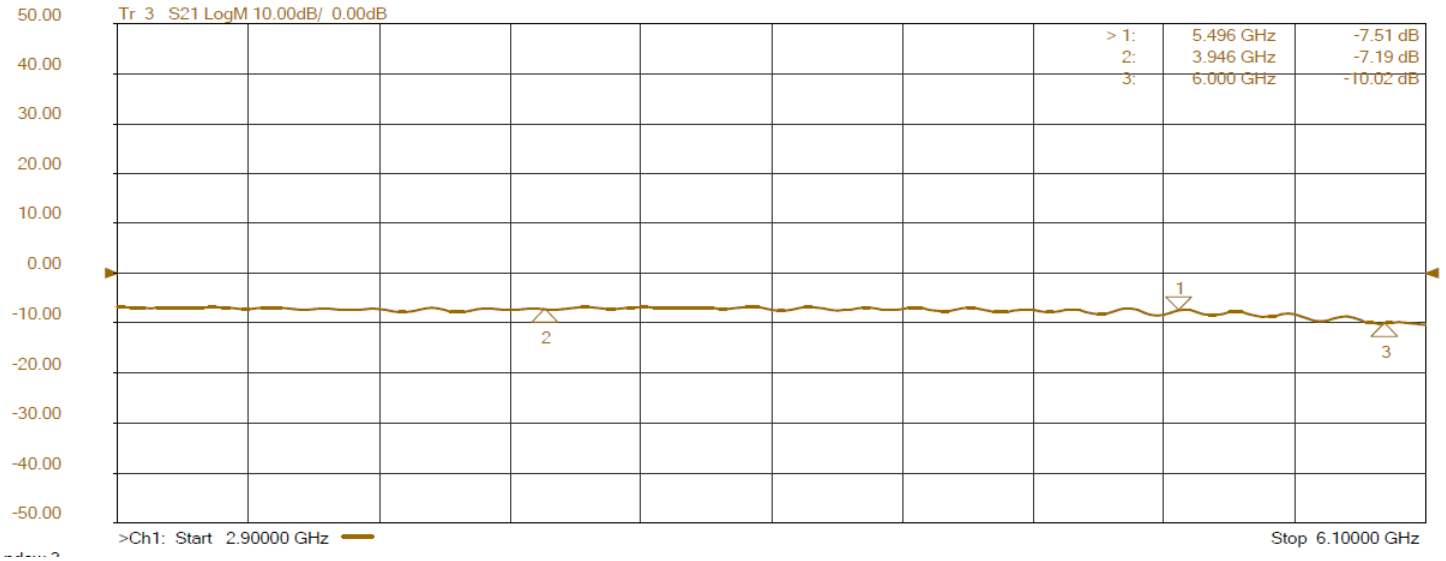
Using the RF USB Phase Shifter:

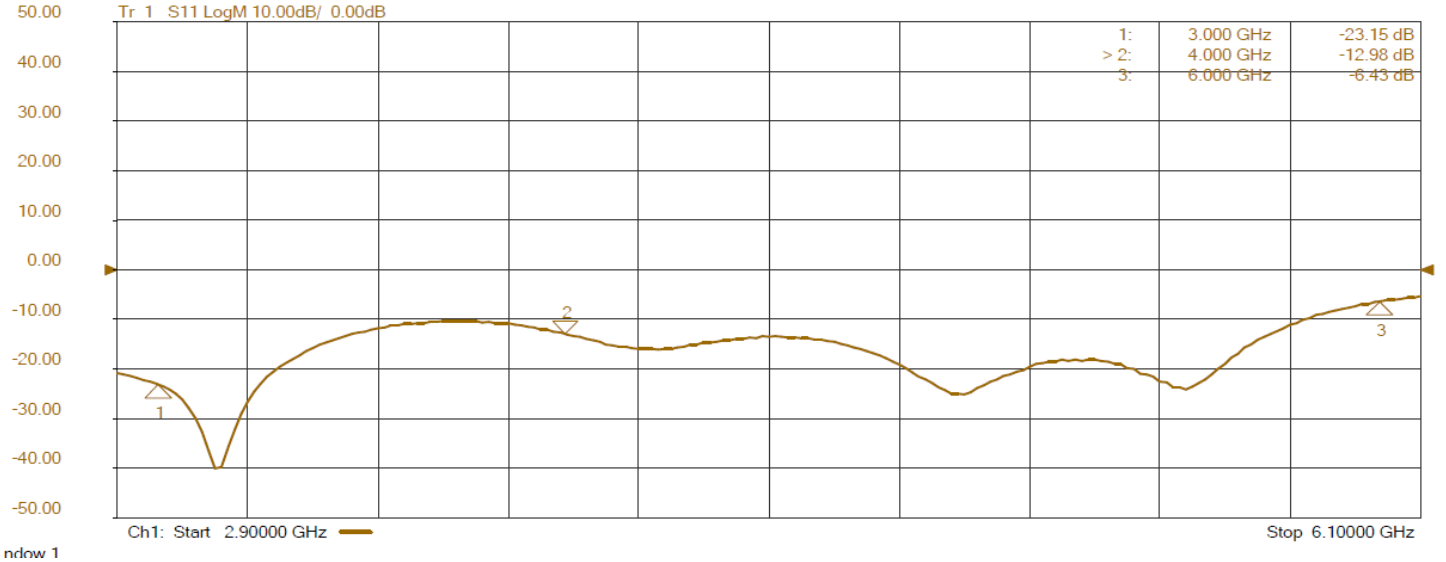
The phase shifter can be used to digitally control the RF phase of any frequency source signal from 3000 MHz to 6000 MHz. It is powered from 5V USB source computer or POWER BANK. It offers 360 degrees of phase coverage and 5.625 degrees LSB.
The phase shifting can be done in manual mode, with the help of the UP & DOWN buttons near the display or with a distant script or software. (see protocol page). The 21.02.16 Phase shifter features low RMS phase error.

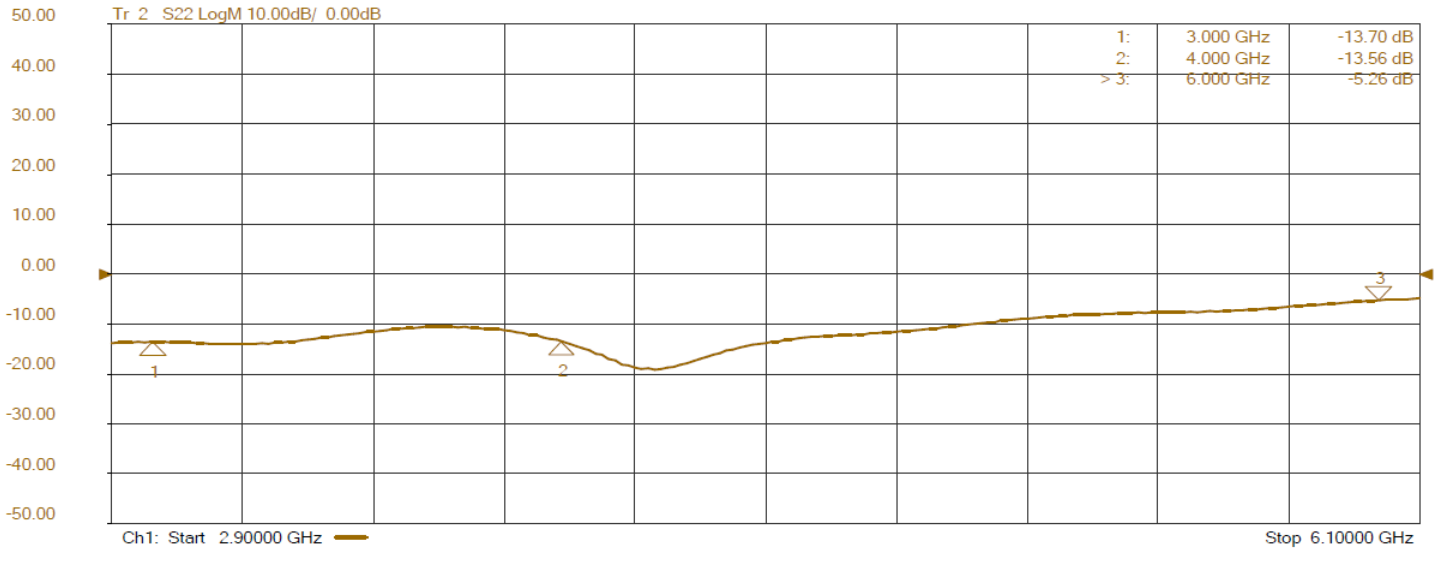
RF USB Phase Shifter
3000 to 6000MHz

HYTEM

CARACTERISTIQUES ET UTILISATION ***TECHNICAL SPECIFICATIONS AND USE***







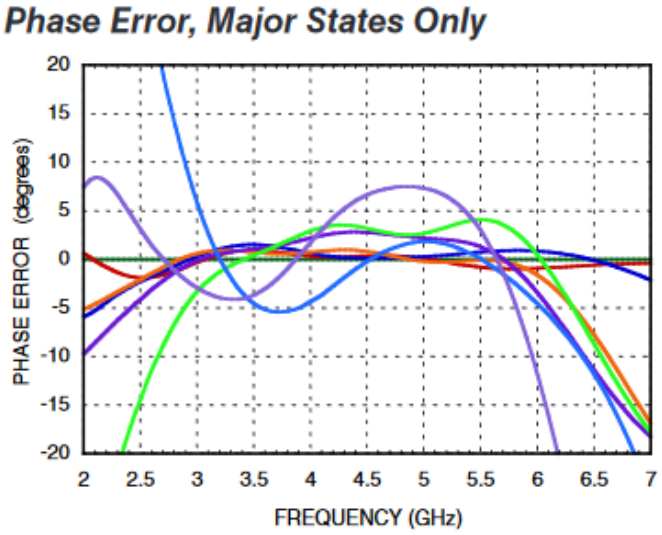
RF USB Phase Shifter
3000 to 6000MHz

HYTEM

CARACTERISTIQUES ET UTILISATION ***TECHNICAL SPECIFICATIONS AND USE***

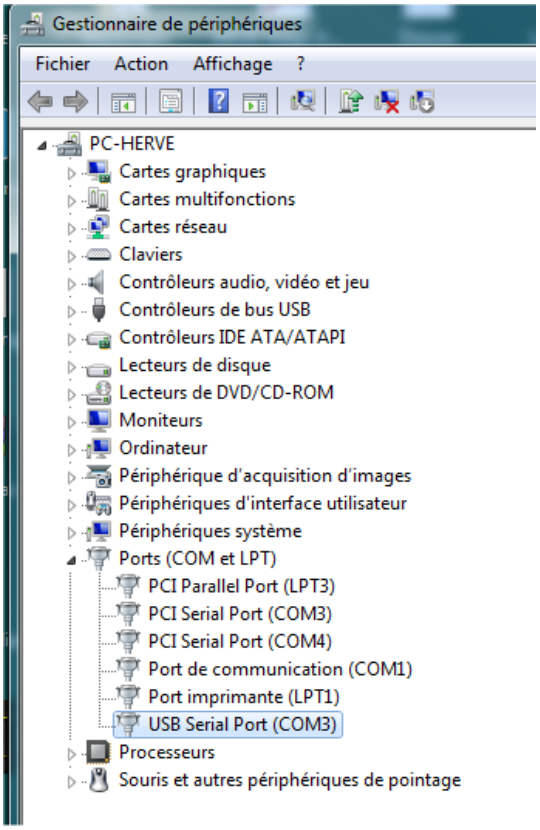
Technical specifications:

Frequency band:	3000MHz to 6000MHz
RF connectors:	SMA female
RF impedance:	50 Ω
Phase coverage:	360 degrees
Shift STEP:	5.625 degrees
Insertion Loss:	10dB @ 6GHz typical
Return Loss:	See chart
Phase Error:	+15/-25 deg @ 3.3 to 5.5GHz
Max Power Input:	30dBm (absolute maximum rating)
Power supply:	5V @ 40mA
Dimensions	73,6 x 69,2 x 18,0 mm
Weights	0,15 Kg

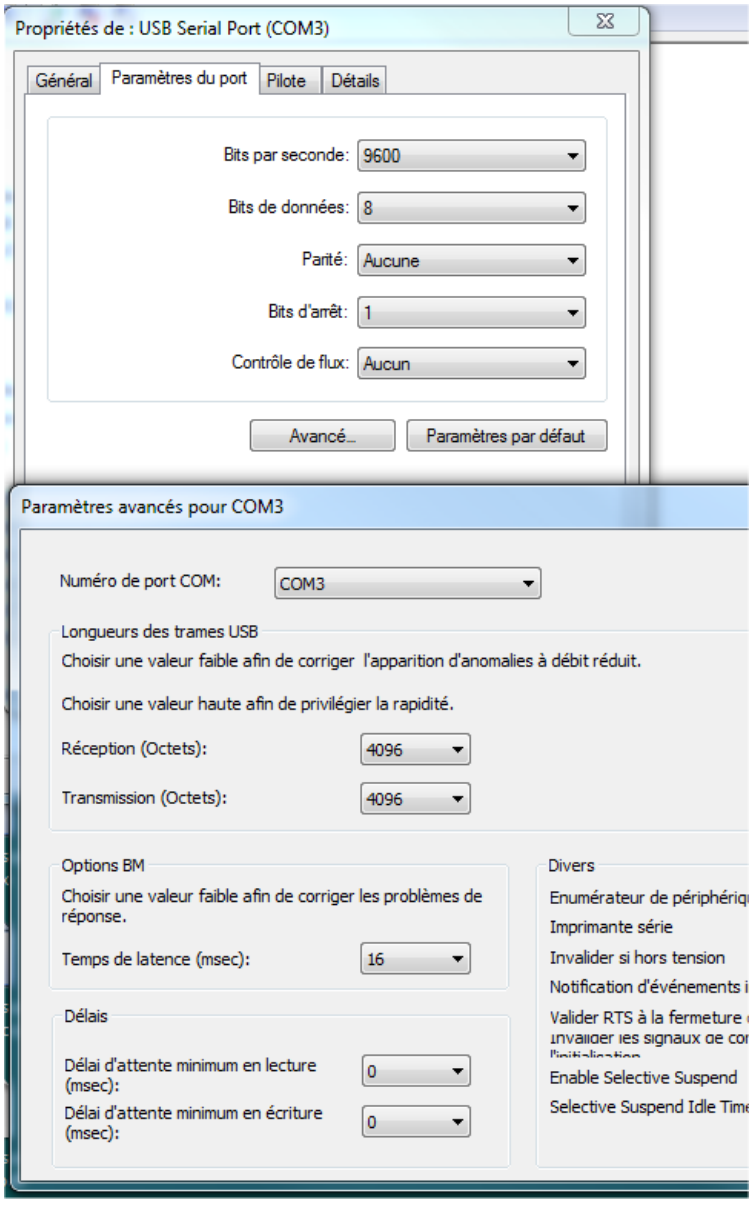


CONNECTING USB PHASE SHIFTER TO WINDOWS COMPUTER

Go to device manager. With Win 7-8-10, search for this name: “USB serial port”
Then click on ports (COM & LPT)



Find the name USB Serial port and see what COM is in use. In this example this is COM3.
But you can change it .



Select new COM port as you want to use for this phase shifter.
Remember the choosen COM PORT

Communication Protocol

38400 Bauds 8,N,1

Command +CR LF	Fonction	Return example
IDN	**Ask for information of the phase shifter IDN {name=6* alphanumeric upper},{phase shifting at boot},{boot on/off (0/1)},{version firmware}**	**IDN HHHHHH,5625,0,11{CR-LF}**
IDS xxxxxx	**Give name to phase shifter. X = 6*alphanumeric upper characters**	**New name**
PHA 0	**Place phase shifter at wanted value. Here 0°**	**Nothing or bad value{CR-LF} (If not 0)**
PHA 5625	**Minimum value with 4* digits = 5,625°**	**Nothing or bad value{CR-LF}**
PHA xxxxxx	**x = Values (from 11250 to 354375 in degrees) 5 to 6 digits for value. Must be a multiple of 5625. If the given value is not a multiple, the first value below is set.**	**Nothing or bad value{CR-LF}**
STA	**Ask for actual value**	**STA 5625{CR-LF}**
MEM	**Put actual Phase value to memory. This command is used with boot commands M0 & M1**	**mem 11250{CR-LF}**
M0	**Boot command. Sending this command force the phase shifter to 0 (ZERO) degrees when starting**	**mem off{CR-LF}**
M1	**Boot command. Sending this command force the phase shifter to value in memory (see MEM)**	**mem on{CR-LF}**
*****	**Sending unknown or bad command**	**?(CR-LF}**

Serial number of the phase shifter is also given at boot, on LCD.

Multiples of 5.625: 11.250 – 16.875 – 22.500 – 28.125 – 33.750 – 39.375 – 45.000 – 50.625 – 56.250 – 61.875 – 67.500
73.125 – 78.750 – 84.375 – 90.000 – 95.625 – 101.250 – 106.875 – 112.500 – 118.125 – 123.750 – 129.375 – 135.000
140.625 – 146.250 – 151.875 – 157.500 – 163.125 – 168.750 – 174.375 – 180.000 – 185.625 – 191.250 – 196.875
202.500 – 208.125 – 213.750 – 219.375 – 225.000 – 230.625 – 236.250 – 241.845 – 247.500 – 253.125 – 258.750
264.375 – 270.000 – 275.625 – 281.250 – 286.875 – 292.500 – 298.125 – 303.750 – 309.375 – 315.000 – 320.625
326.250 – 331.875 – 337.500 – 343.125 – 348.750 – 354.375