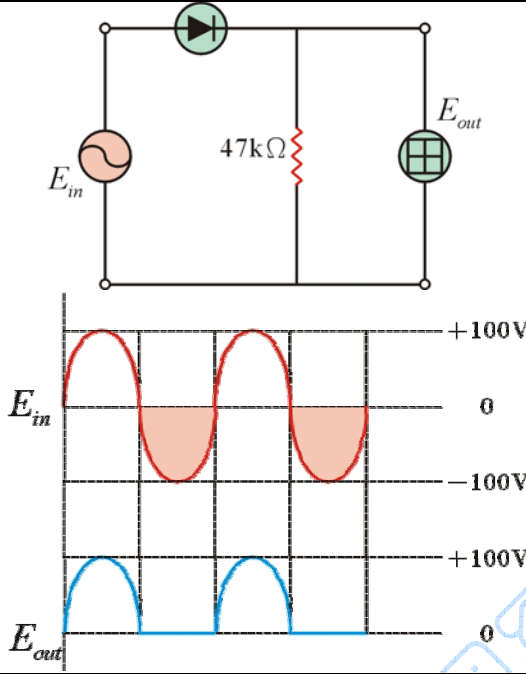
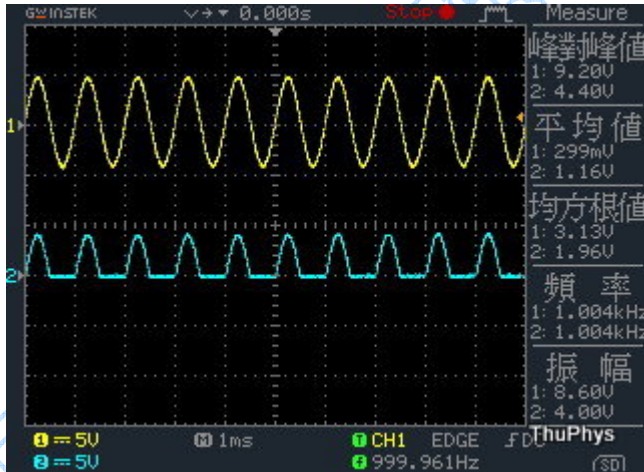
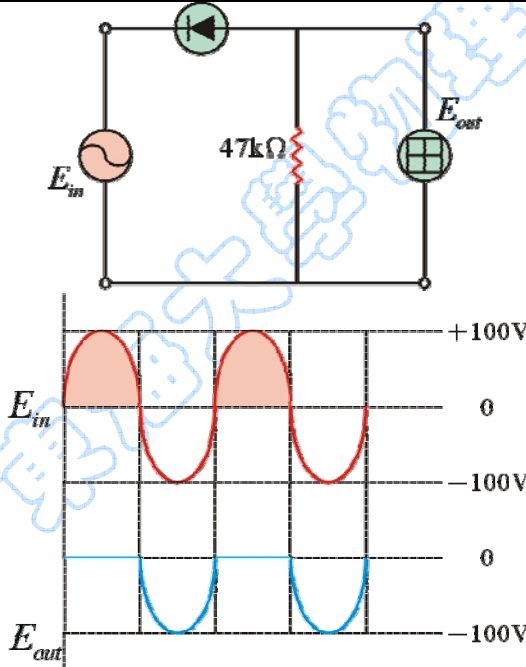
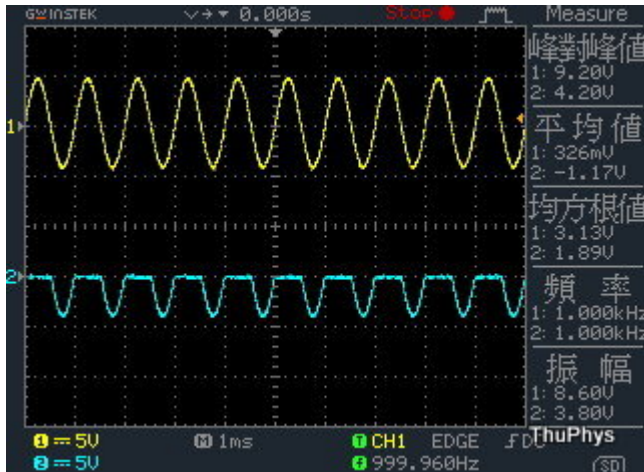


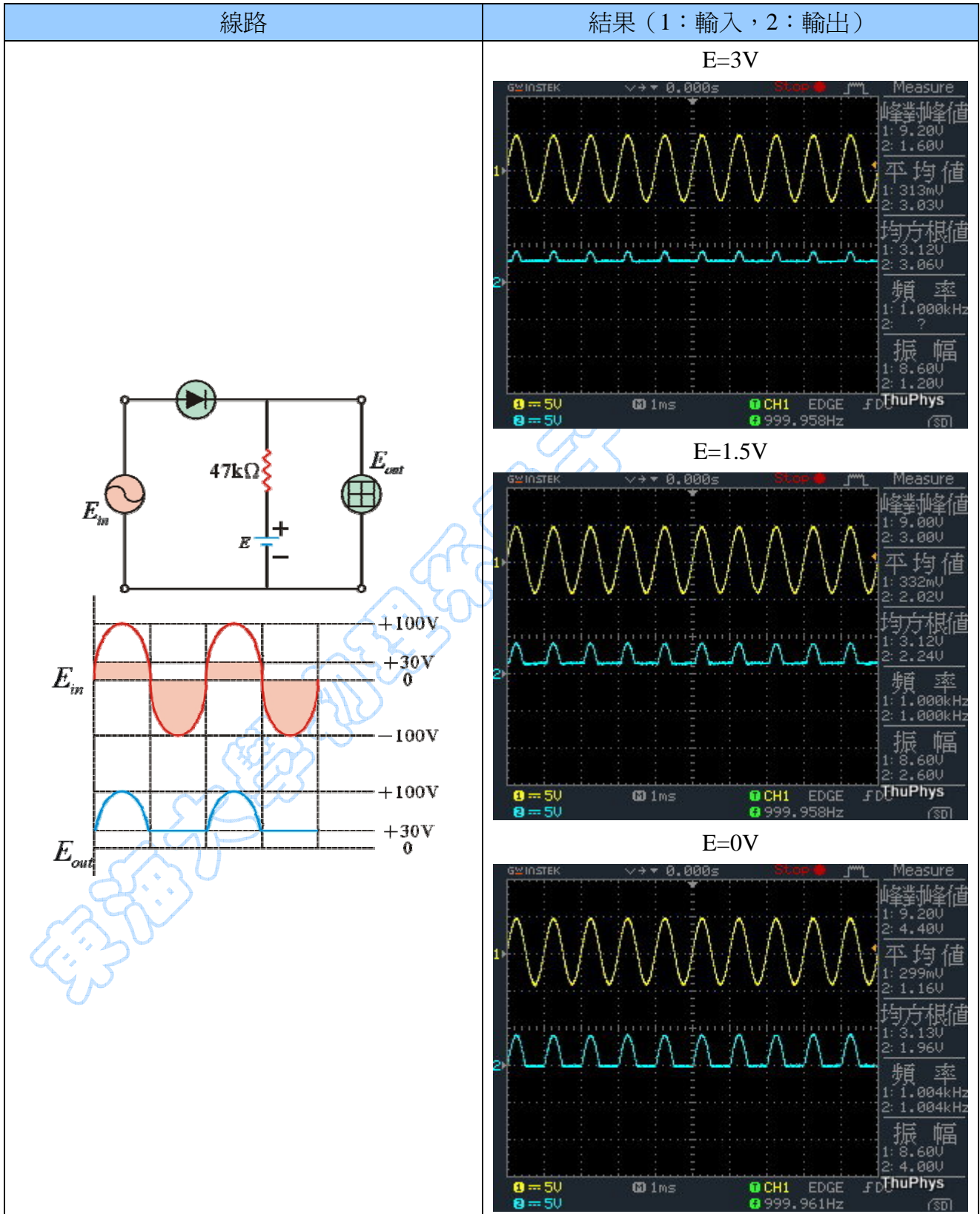
# 數據表格：剪截電路與箝位電路

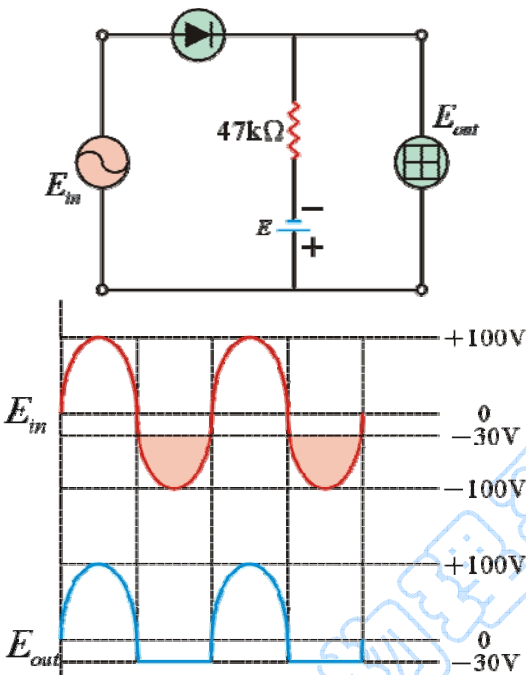
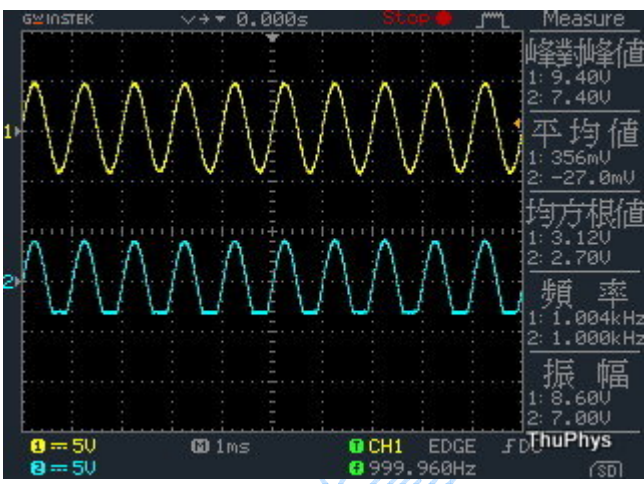
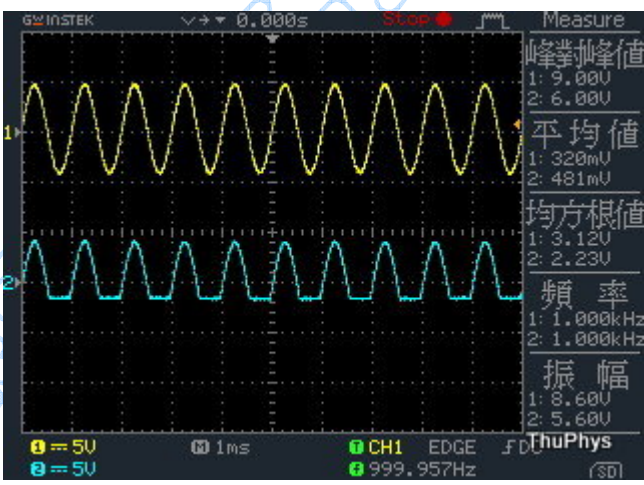
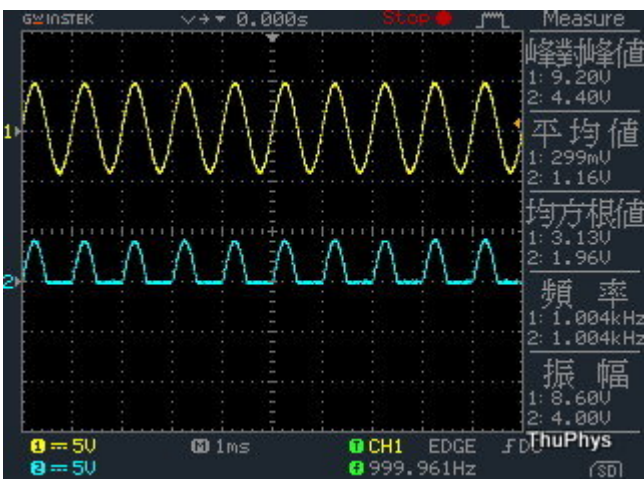
【項目一】串聯二極體剪截電路  
二極體：1N4004

線路	結果 (1: 輸入, 2: 輸出)
	
	

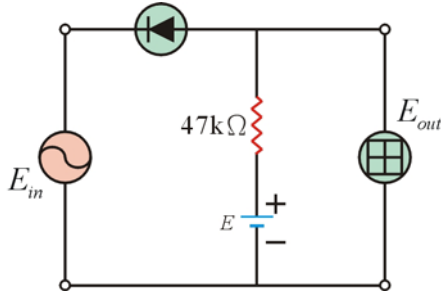
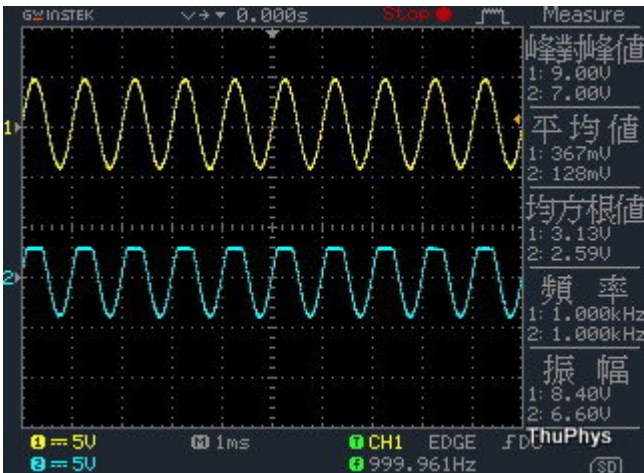
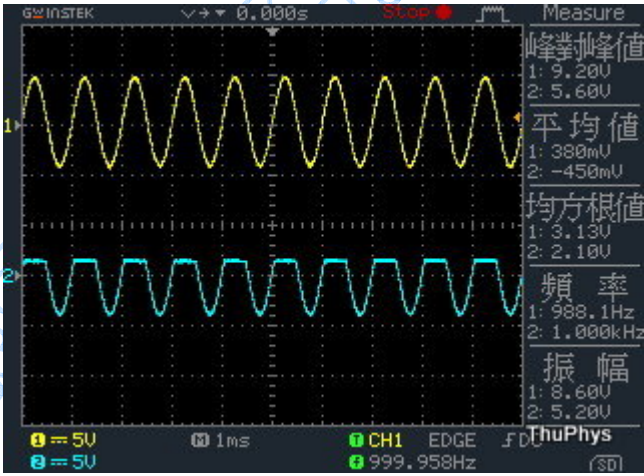
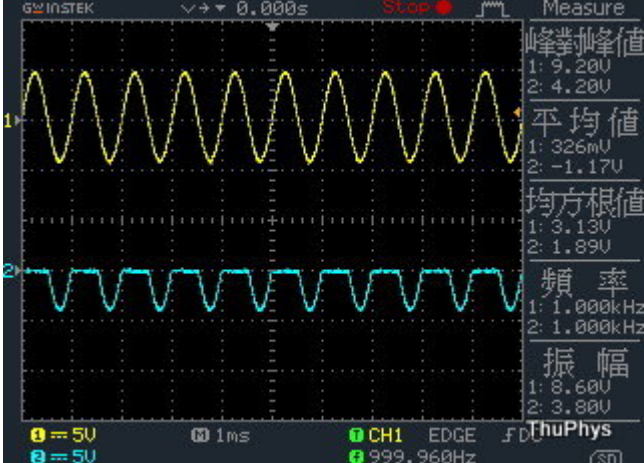
(表 1)

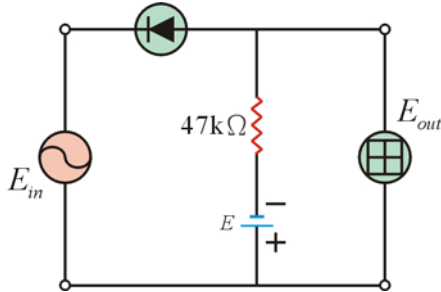
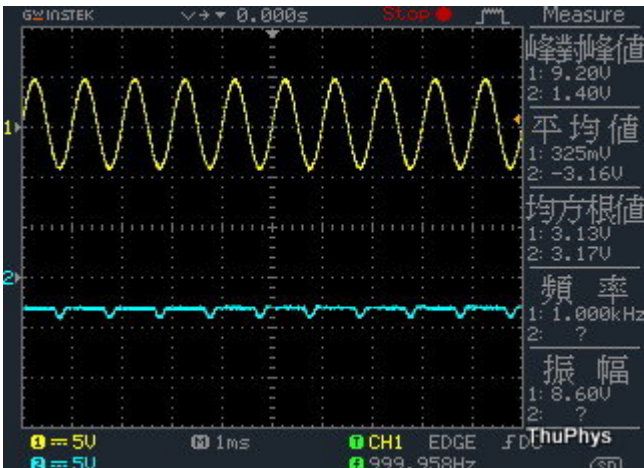
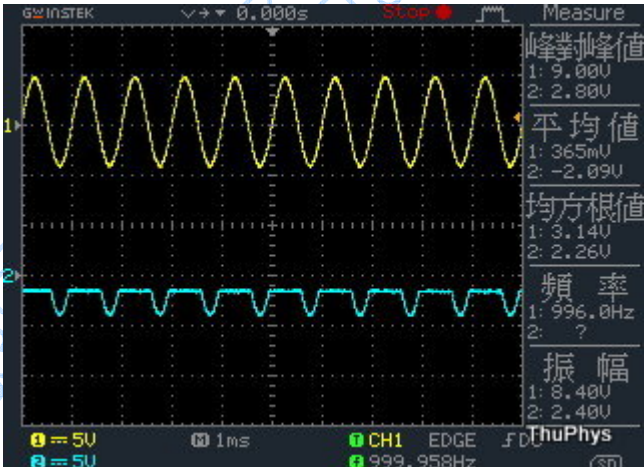
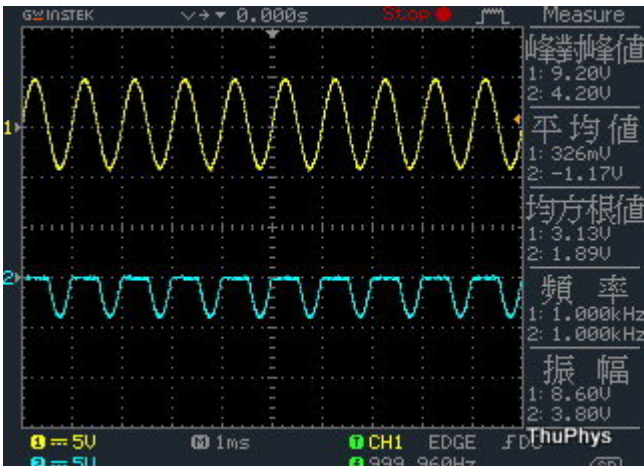
【項目二】加有偏壓之串聯二極體剪截電路  
二極體：1N4004



線路	結果 (1: 輸入, 2: 輸出)
	<p style="text-align: center;"><b>E=3V</b></p>  <p style="text-align: center;"><b>E=1.5V</b></p>  <p style="text-align: center;"><b>E=0V</b></p> 

東海大學物理系

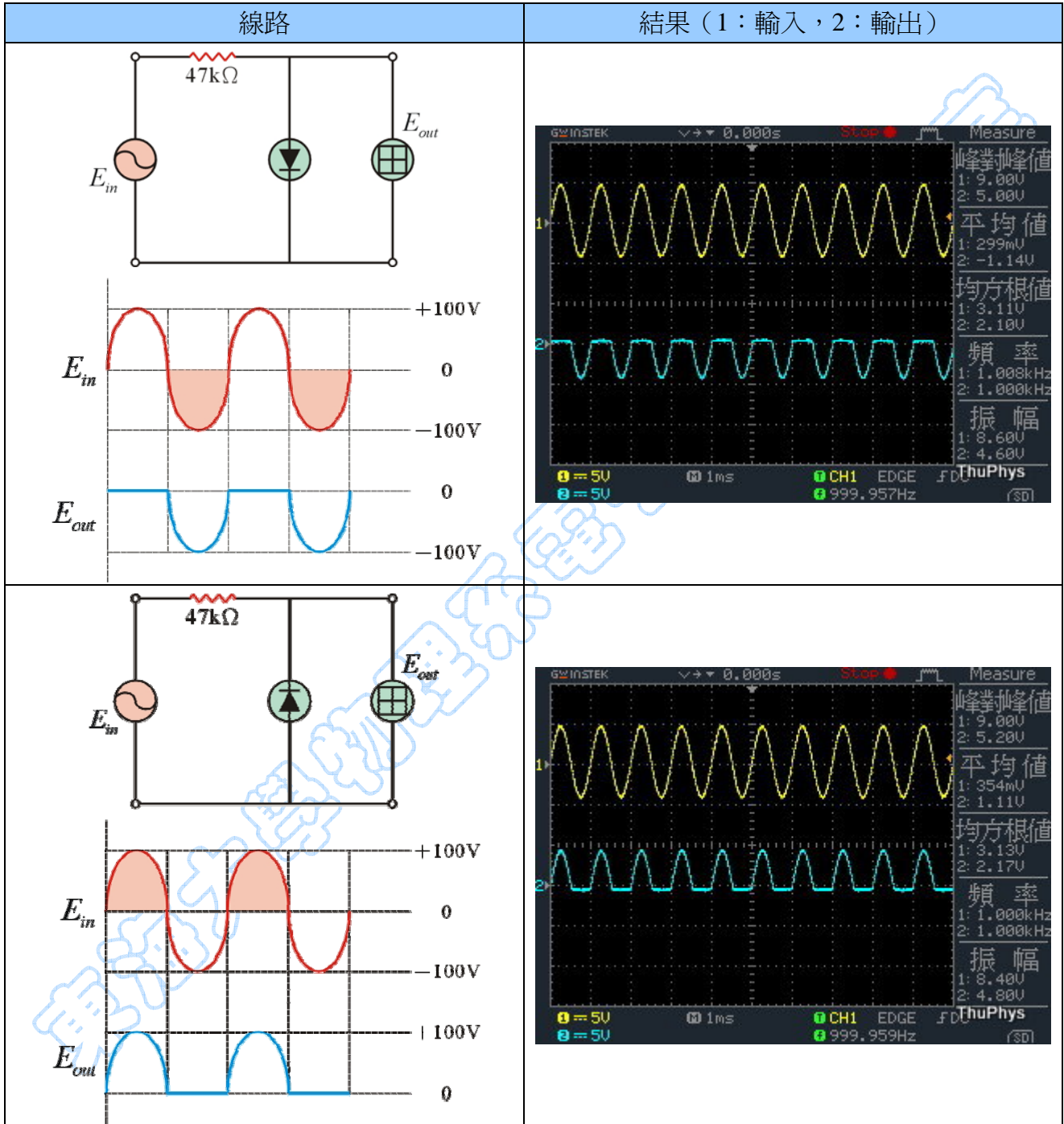
線路	結果 (1: 輸入, 2: 輸出)
	<p style="text-align: center;"><b>E=3V</b></p> 
	<p style="text-align: center;"><b>E=1.5V</b></p> 
	<p style="text-align: center;"><b>E=0V</b></p> 

線路	結果 (1: 輸入, 2: 輸出)																				
	<p style="text-align: center;"><b>E=3V</b></p>  <table border="1" style="float: right; width: 150px;"> <tr><td>峰峯值</td><td>1: 9.20V</td></tr> <tr><td></td><td>2: 1.40V</td></tr> <tr><td>平均值</td><td>1: 325mV</td></tr> <tr><td></td><td>2: -3.16V</td></tr> <tr><td>均方根值</td><td>1: 3.13V</td></tr> <tr><td></td><td>2: 3.17V</td></tr> <tr><td>頻率</td><td>1: 1.000kHz</td></tr> <tr><td></td><td>2: ?</td></tr> <tr><td>振幅</td><td>1: 8.60V</td></tr> <tr><td></td><td>2: ?</td></tr> </table>	峰峯值	1: 9.20V		2: 1.40V	平均值	1: 325mV		2: -3.16V	均方根值	1: 3.13V		2: 3.17V	頻率	1: 1.000kHz		2: ?	振幅	1: 8.60V		2: ?
	峰峯值	1: 9.20V																			
		2: 1.40V																			
平均值	1: 325mV																				
	2: -3.16V																				
均方根值	1: 3.13V																				
	2: 3.17V																				
頻率	1: 1.000kHz																				
	2: ?																				
振幅	1: 8.60V																				
	2: ?																				
<p style="text-align: center;"><b>E=1.5V</b></p>  <table border="1" style="float: right; width: 150px;"> <tr><td>峰峯值</td><td>1: 9.00V</td></tr> <tr><td></td><td>2: 2.80V</td></tr> <tr><td>平均值</td><td>1: 365mV</td></tr> <tr><td></td><td>2: -2.09V</td></tr> <tr><td>均方根值</td><td>1: 3.14V</td></tr> <tr><td></td><td>2: 2.26V</td></tr> <tr><td>頻率</td><td>1: 996.0Hz</td></tr> <tr><td></td><td>2: ?</td></tr> <tr><td>振幅</td><td>1: 8.40V</td></tr> <tr><td></td><td>2: 2.40V</td></tr> </table>	峰峯值	1: 9.00V		2: 2.80V	平均值	1: 365mV		2: -2.09V	均方根值	1: 3.14V		2: 2.26V	頻率	1: 996.0Hz		2: ?	振幅	1: 8.40V		2: 2.40V	
峰峯值	1: 9.00V																				
	2: 2.80V																				
平均值	1: 365mV																				
	2: -2.09V																				
均方根值	1: 3.14V																				
	2: 2.26V																				
頻率	1: 996.0Hz																				
	2: ?																				
振幅	1: 8.40V																				
	2: 2.40V																				
<p style="text-align: center;"><b>E=0V</b></p>  <table border="1" style="float: right; width: 150px;"> <tr><td>峰峯值</td><td>1: 9.20V</td></tr> <tr><td></td><td>2: 4.20V</td></tr> <tr><td>平均值</td><td>1: 326mV</td></tr> <tr><td></td><td>2: -1.17V</td></tr> <tr><td>均方根值</td><td>1: 3.13V</td></tr> <tr><td></td><td>2: 1.89V</td></tr> <tr><td>頻率</td><td>1: 1.000kHz</td></tr> <tr><td></td><td>2: 1.000kHz</td></tr> <tr><td>振幅</td><td>1: 8.60V</td></tr> <tr><td></td><td>2: 3.80V</td></tr> </table>	峰峯值	1: 9.20V		2: 4.20V	平均值	1: 326mV		2: -1.17V	均方根值	1: 3.13V		2: 1.89V	頻率	1: 1.000kHz		2: 1.000kHz	振幅	1: 8.60V		2: 3.80V	
峰峯值	1: 9.20V																				
	2: 4.20V																				
平均值	1: 326mV																				
	2: -1.17V																				
均方根值	1: 3.13V																				
	2: 1.89V																				
頻率	1: 1.000kHz																				
	2: 1.000kHz																				
振幅	1: 8.60V																				
	2: 3.80V																				

(表 2)

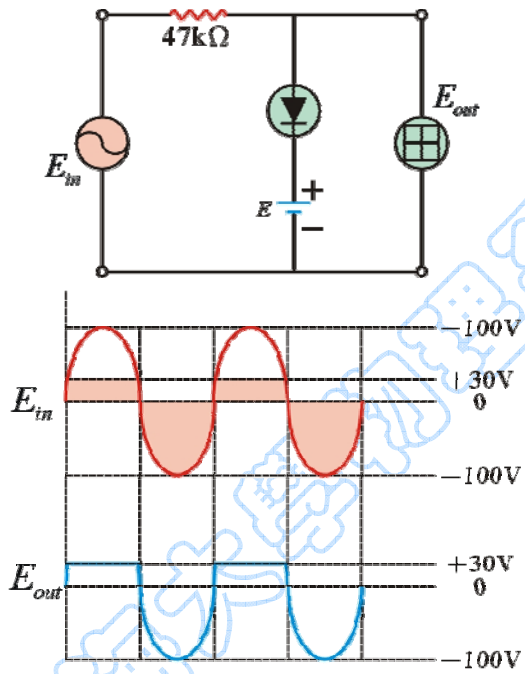
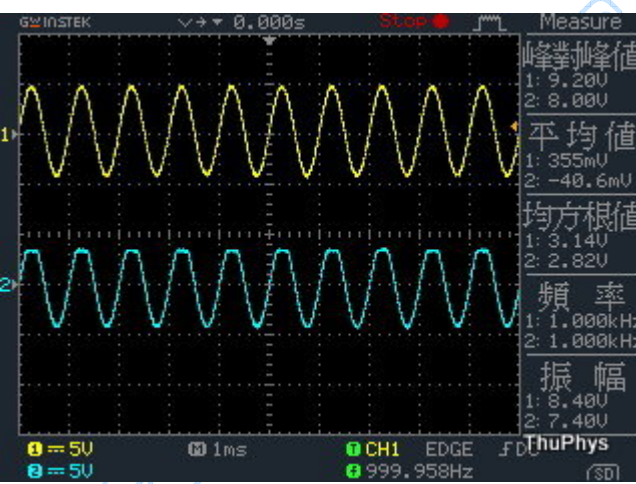
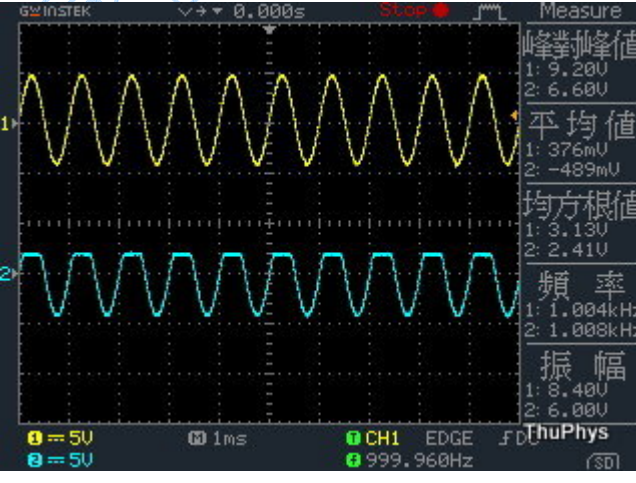
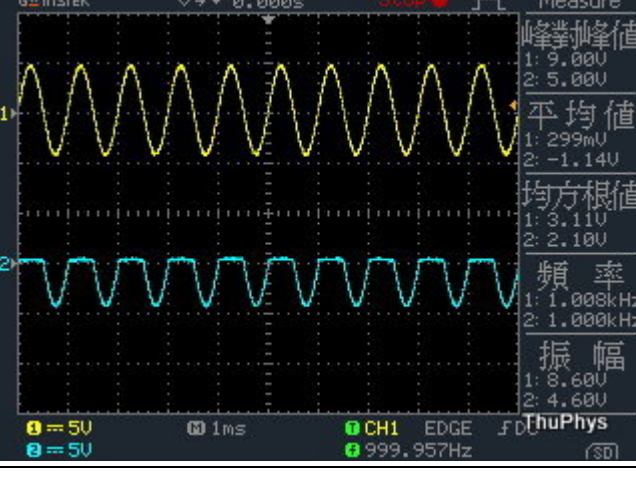
【項目三】並聯二極體剪截電路

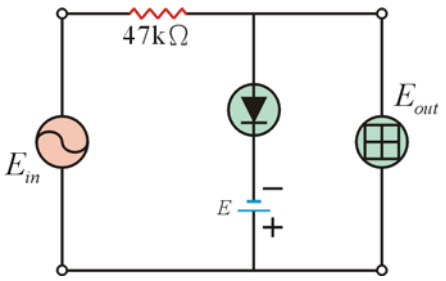
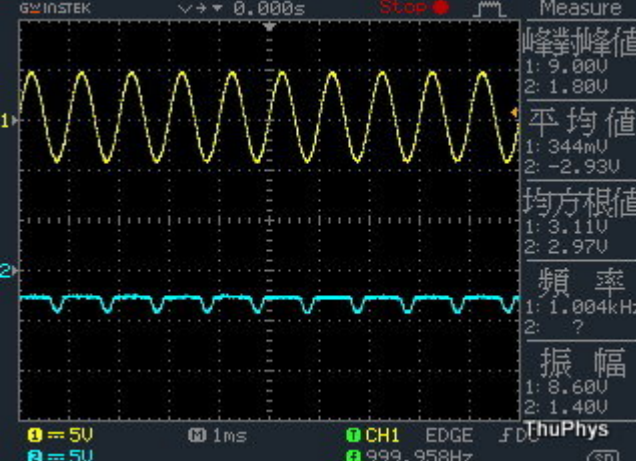
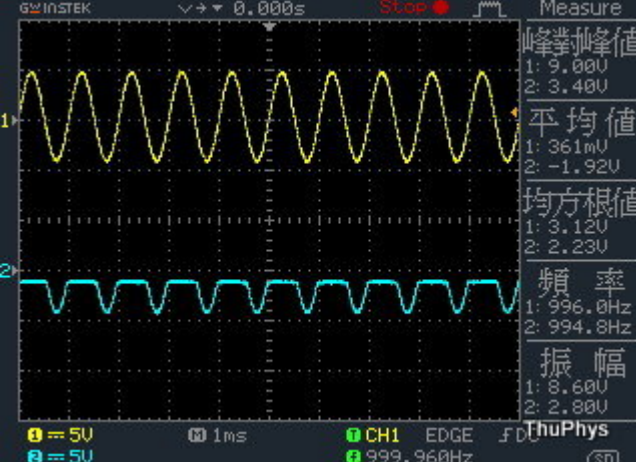
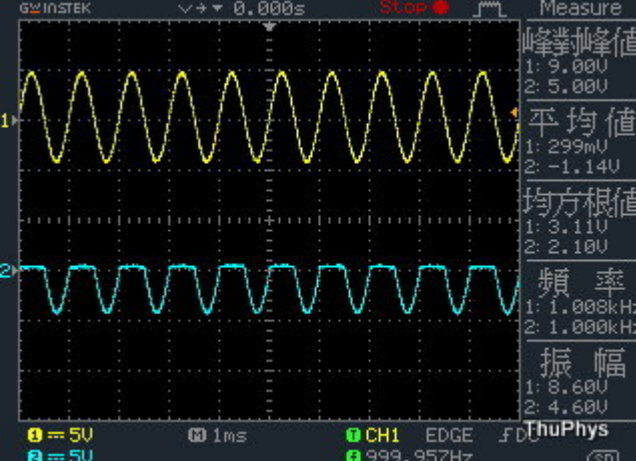
二極體：1N4004



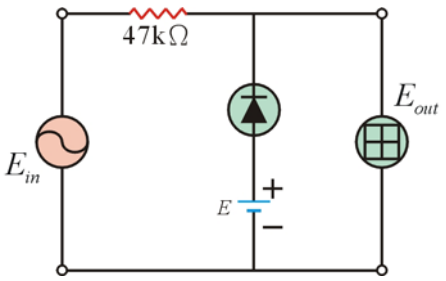
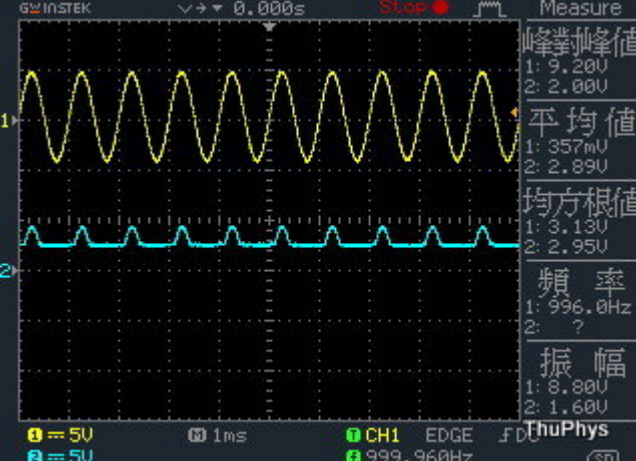
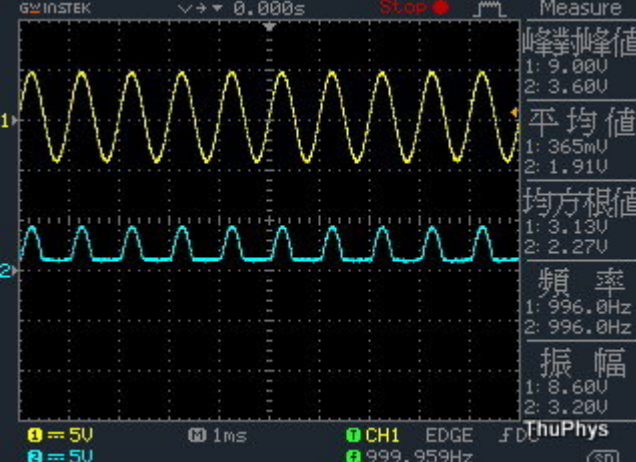
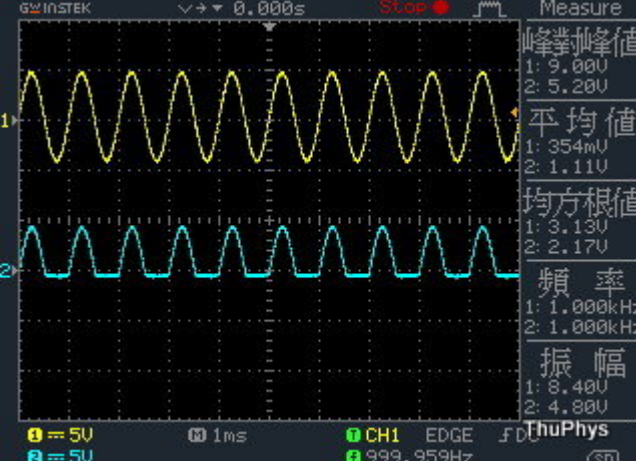
(表 3)

【項目四】加有偏壓之並聯二極體剪截電路  
二極體：1N4004

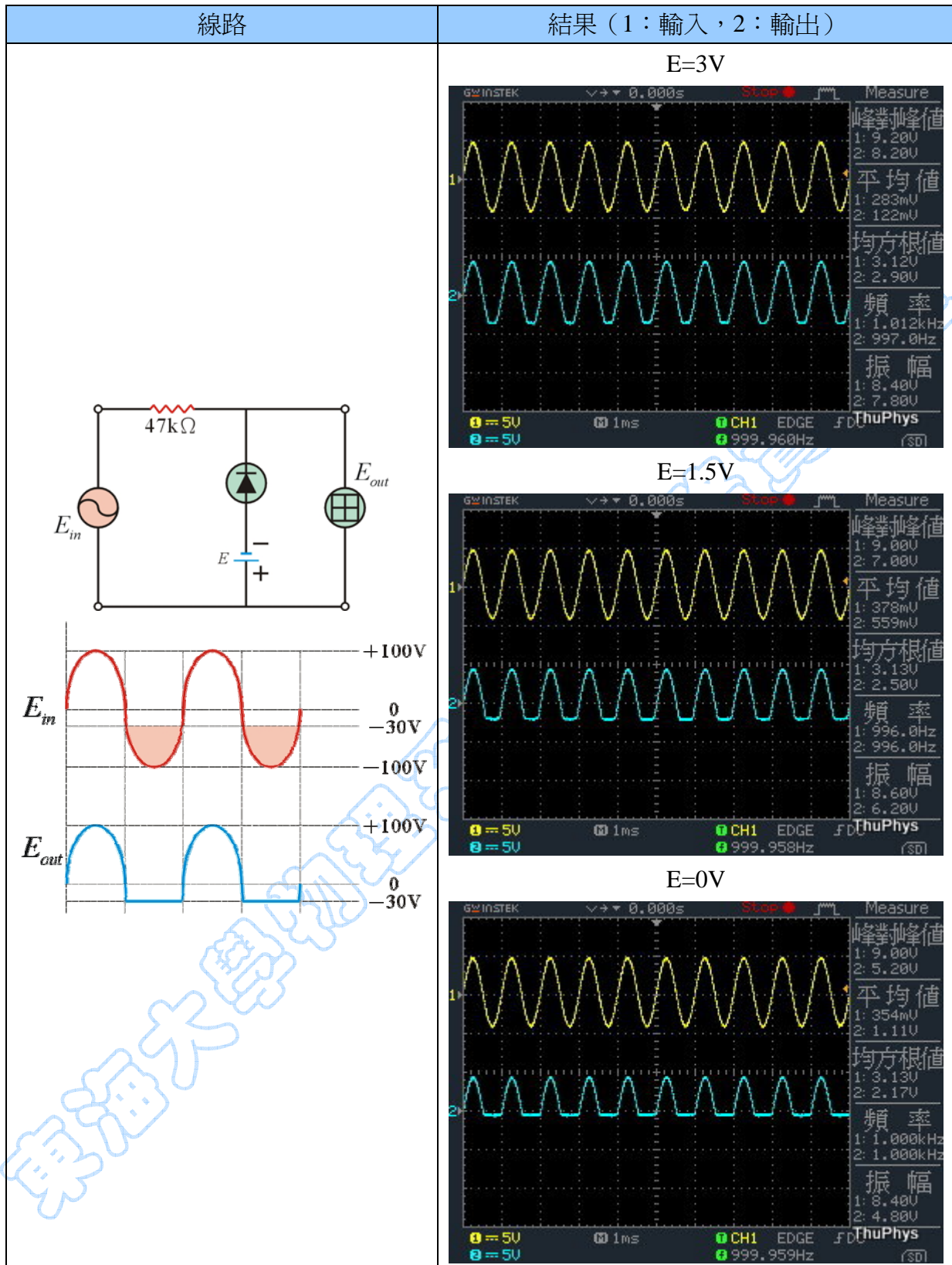
線路	結果 (1: 輸入, 2: 輸出)
	<p style="text-align: center;"><b>E=3V</b></p>  <p style="text-align: center;"><b>E=1.5V</b></p>  <p style="text-align: center;"><b>E=0V</b></p> 

線路	結果 (1: 輸入, 2: 輸出)																						
	<p style="text-align: center;"><b>E=3V</b></p>  <table border="1" style="float: right; width: 150px;"> <tr><th colspan="2">Measure</th></tr> <tr><td>峰-峰峰值</td><td>1: 9.00V</td></tr> <tr><td></td><td>2: 1.80V</td></tr> <tr><td>平均值</td><td>1: 344mV</td></tr> <tr><td></td><td>2: -2.93V</td></tr> <tr><td>均方根值</td><td>1: 3.11V</td></tr> <tr><td></td><td>2: 2.97V</td></tr> <tr><td>頻率</td><td>1: 1.004kHz</td></tr> <tr><td></td><td>2: ?</td></tr> <tr><td>振幅</td><td>1: 8.60V</td></tr> <tr><td></td><td>2: 1.40V</td></tr> </table>	Measure		峰-峰峰值	1: 9.00V		2: 1.80V	平均值	1: 344mV		2: -2.93V	均方根值	1: 3.11V		2: 2.97V	頻率	1: 1.004kHz		2: ?	振幅	1: 8.60V		2: 1.40V
	Measure																						
	峰-峰峰值	1: 9.00V																					
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	2: 2.23V																						
頻率	1: 996.0Hz																						
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線路	結果 (1: 輸入, 2: 輸出)																						
	<p style="text-align: center;"><b>E=3V</b></p>  <table border="1" style="float: right; width: 150px;"> <tr><th colspan="2">Measure</th></tr> <tr><td>峰-峰峰值</td><td>1: 9.20V</td></tr> <tr><td></td><td>2: 2.00V</td></tr> <tr><td>平均值</td><td>1: 357mV</td></tr> <tr><td></td><td>2: 2.89V</td></tr> <tr><td>均方根值</td><td>1: 3.13V</td></tr> <tr><td></td><td>2: 2.95V</td></tr> <tr><td>頻率</td><td>1: 996.0Hz</td></tr> <tr><td></td><td>2: ?</td></tr> <tr><td>振幅</td><td>1: 8.80V</td></tr> <tr><td></td><td>2: 1.60V</td></tr> </table>	Measure		峰-峰峰值	1: 9.20V		2: 2.00V	平均值	1: 357mV		2: 2.89V	均方根值	1: 3.13V		2: 2.95V	頻率	1: 996.0Hz		2: ?	振幅	1: 8.80V		2: 1.60V
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<p style="text-align: center;"><b>E=0V</b></p>  <table border="1" style="float: right; width: 150px;"> <tr><th colspan="2">Measure</th></tr> <tr><td>峰-峰峰值</td><td>1: 9.00V</td></tr> <tr><td></td><td>2: 5.20V</td></tr> <tr><td>平均值</td><td>1: 354mV</td></tr> <tr><td></td><td>2: 1.11V</td></tr> <tr><td>均方根值</td><td>1: 3.13V</td></tr> <tr><td></td><td>2: 2.17V</td></tr> <tr><td>頻率</td><td>1: 1.000kHz</td></tr> <tr><td></td><td>2: 1.000kHz</td></tr> <tr><td>振幅</td><td>1: 8.40V</td></tr> <tr><td></td><td>2: 4.80V</td></tr> </table>	Measure		峰-峰峰值	1: 9.00V		2: 5.20V	平均值	1: 354mV		2: 1.11V	均方根值	1: 3.13V		2: 2.17V	頻率	1: 1.000kHz		2: 1.000kHz	振幅	1: 8.40V		2: 4.80V	
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東海大學物理系

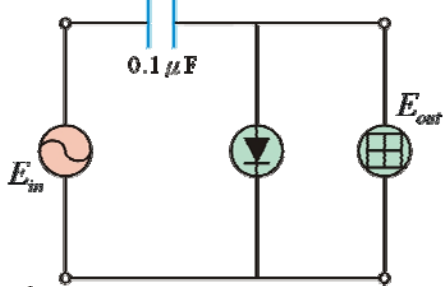
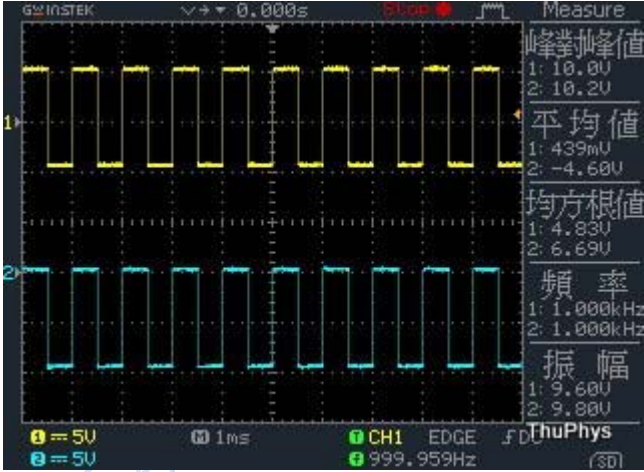
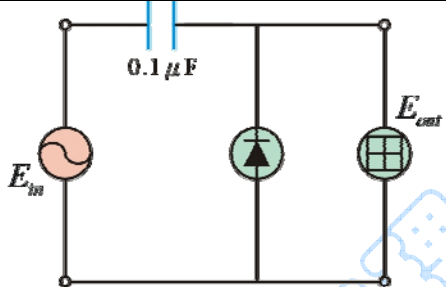
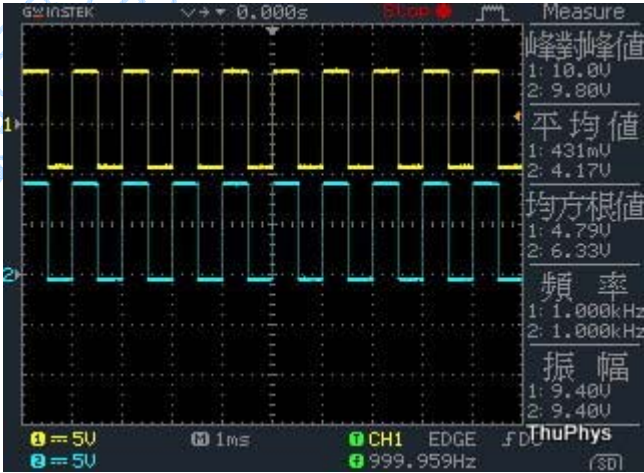


(表 4)

電子電路實驗室

【項目五】二極體箝位電路

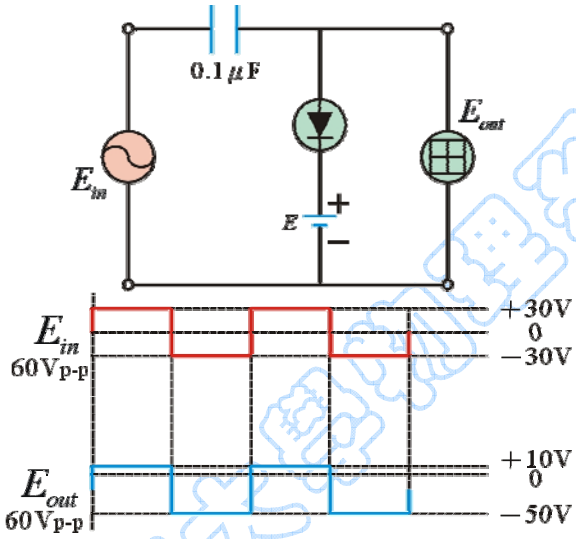
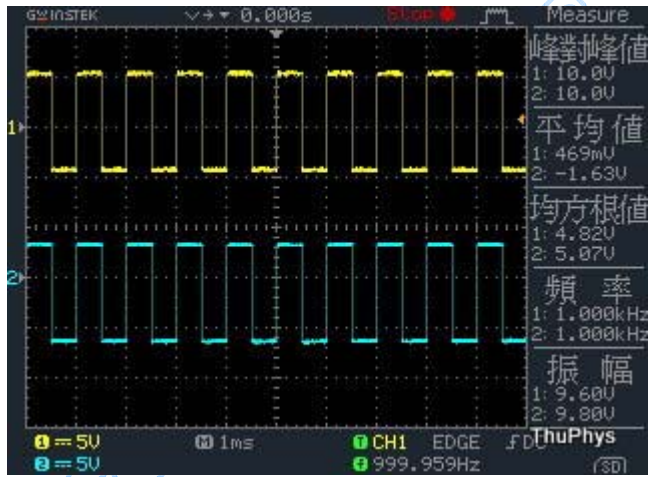
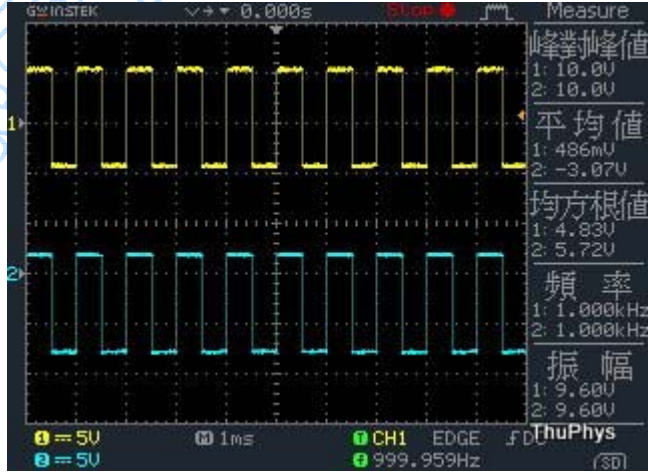
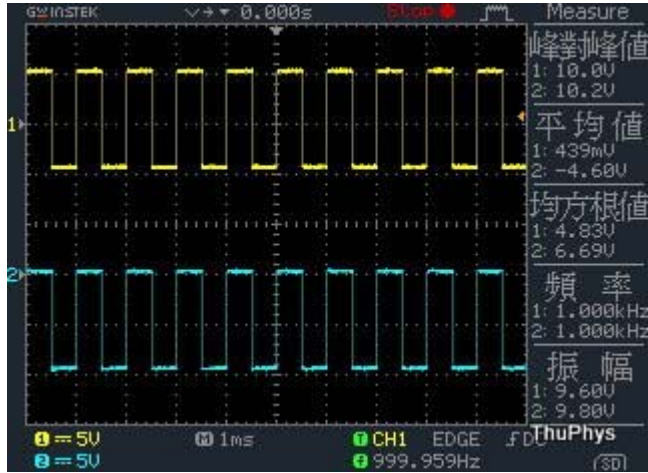
二極體：1N4004

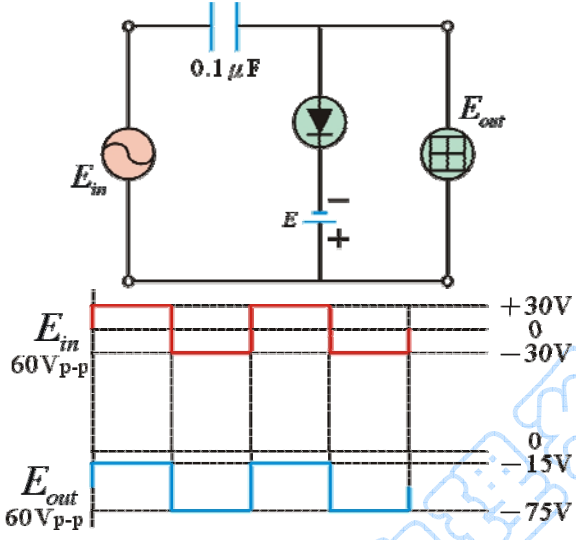
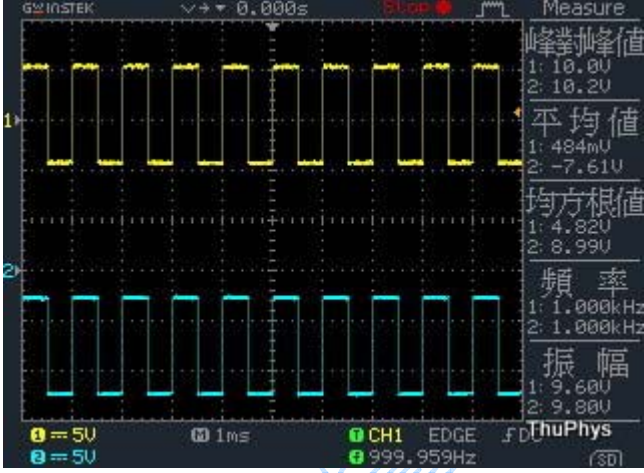
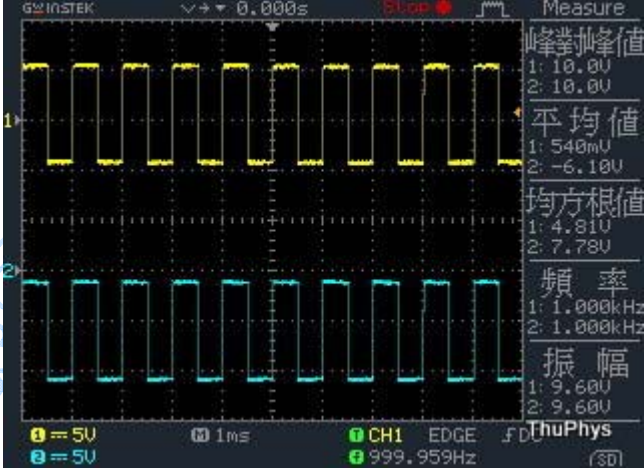

線路	結果 (1: 輸入, 2: 輸出)
 <p>0.1 <math>\mu</math>F</p> <p><math>E_{in}</math></p> <p><math>E_{out}</math></p> <p><math>E_{in}</math> 20V<sub>p-p</sub> +10V 0 -10V</p> <p><math>E_{out}</math> 20V<sub>p-p</sub> 0 -10V -20V</p>	 <p>Measure</p> <p>峰峯值</p> <p>1: 10.00V</p> <p>2: 10.20V</p> <p>平均值</p> <p>1: 439mV</p> <p>2: -4.60V</p> <p>均方根值</p> <p>1: 4.83V</p> <p>2: 6.69V</p> <p>頻率</p> <p>1: 1.000kHz</p> <p>2: 1.000kHz</p> <p>振幅</p> <p>1: 9.60V</p> <p>2: 9.80V</p> <p>CH1 EDGE F</p> <p>999.959Hz</p>
 <p>0.1 <math>\mu</math>F</p> <p><math>E_{in}</math></p> <p><math>E_{out}</math></p> <p><math>E_{in}</math> 20V<sub>p-p</sub> +10V 0 -10V</p> <p><math>E_{out}</math> 20V<sub>p-p</sub> +20V +10V 0</p>	 <p>Measure</p> <p>峰峯值</p> <p>1: 10.00V</p> <p>2: 9.80V</p> <p>平均值</p> <p>1: 431mV</p> <p>2: 4.17V</p> <p>均方根值</p> <p>1: 4.79V</p> <p>2: 6.33V</p> <p>頻率</p> <p>1: 1.000kHz</p> <p>2: 1.000kHz</p> <p>振幅</p> <p>1: 9.40V</p> <p>2: 9.40V</p> <p>CH1 EDGE F</p> <p>999.959Hz</p>

(表 5)

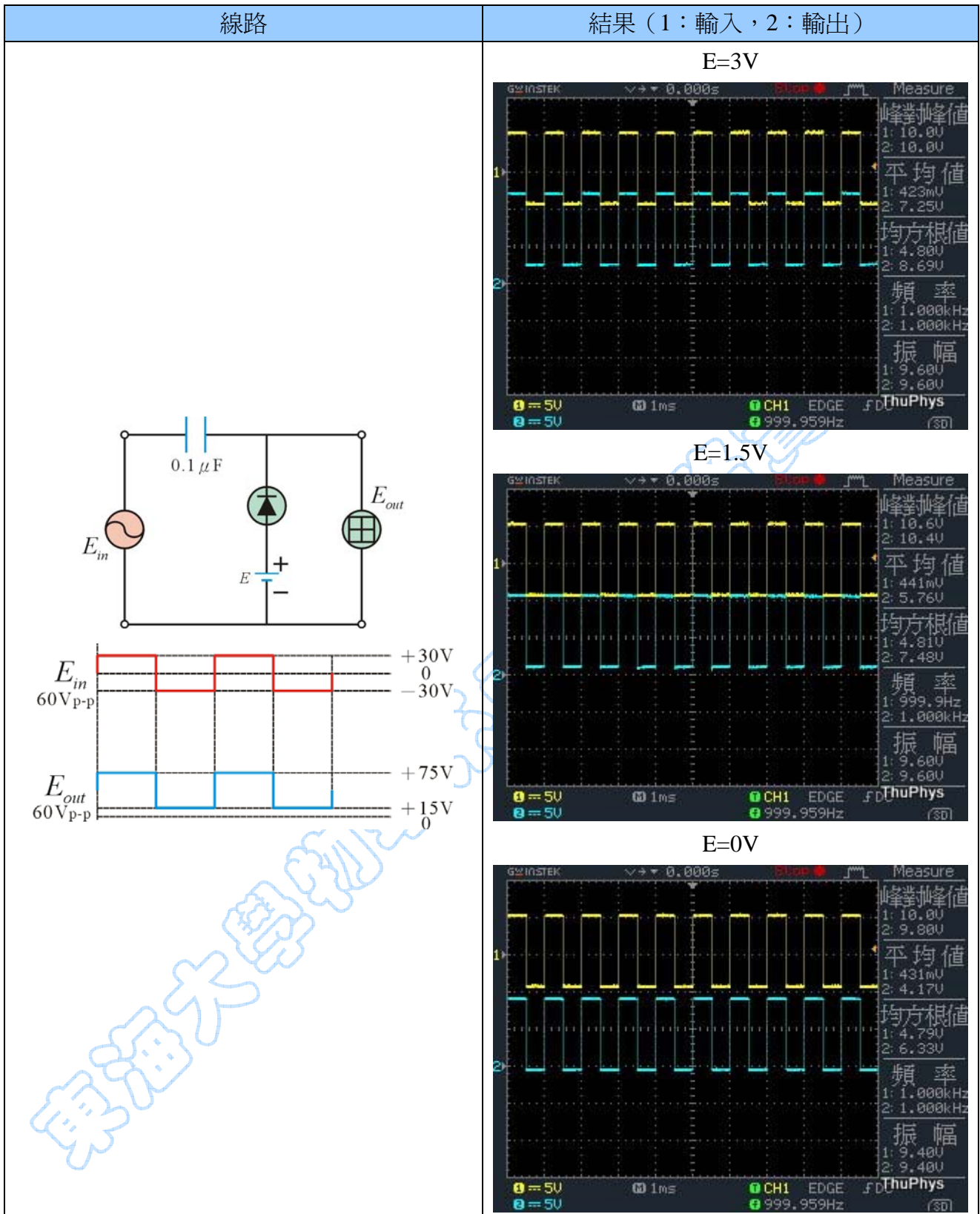
【項目六】加有偏壓之二極體箝位電路

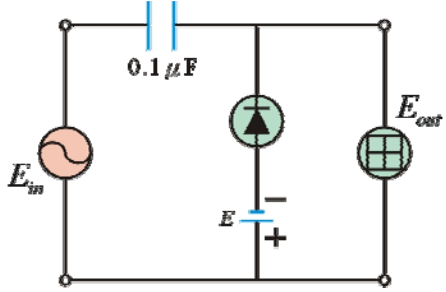
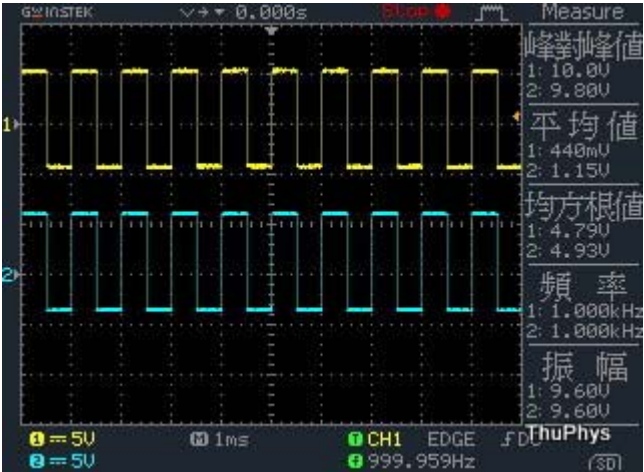
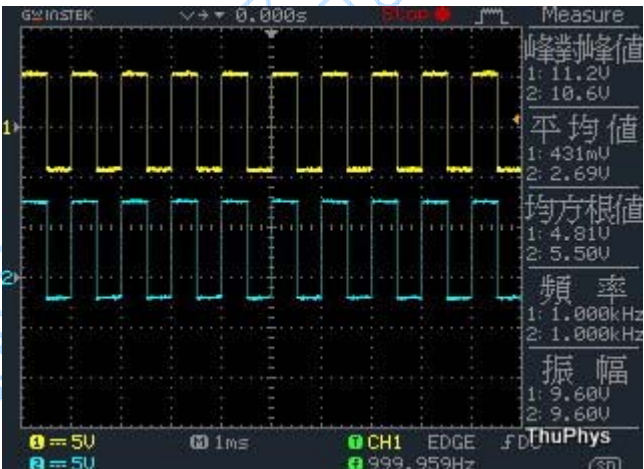
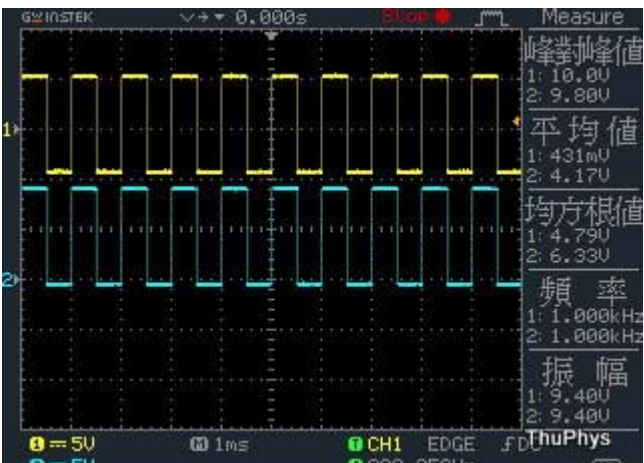
二極體：1N4004

線路	結果 (1: 輸入, 2: 輸出)																																				
 <p>The circuit diagram shows an AC voltage source <math>E_m</math> in series with a <math>0.1 \mu F</math> capacitor. This is connected to a diode and a DC bias source <math>E</math> in parallel. The output <math>E_{out}</math> is taken across the diode. The waveforms show <math>E_{in}</math> as a 60V p-p sine wave and <math>E_{out}</math> as a 60V p-p signal that is clamped to the bias voltage <math>E</math>.</p>	<p><b>E=3V</b></p>  <table border="1"> <tr><th colspan="2">Measure</th></tr> <tr><td>峰峯值</td><td>1: 10.00 2: 10.00</td></tr> <tr><td>平均值</td><td>1: 469mV 2: -1.63V</td></tr> <tr><td>均方根值</td><td>1: 4.82V 2: 5.07V</td></tr> <tr><td>頻率</td><td>1: 1.000kHz 2: 1.000kHz</td></tr> <tr><td>振幅</td><td>1: 9.60V 2: 9.80V</td></tr> </table> <p><b>E=1.5V</b></p>  <table border="1"> <tr><th colspan="2">Measure</th></tr> <tr><td>峰峯值</td><td>1: 10.00 2: 10.00</td></tr> <tr><td>平均值</td><td>1: 486mV 2: -3.07V</td></tr> <tr><td>均方根值</td><td>1: 4.83V 2: 5.72V</td></tr> <tr><td>頻率</td><td>1: 1.000kHz 2: 1.000kHz</td></tr> <tr><td>振幅</td><td>1: 9.60V 2: 9.60V</td></tr> </table> <p><b>E=0V</b></p>  <table border="1"> <tr><th colspan="2">Measure</th></tr> <tr><td>峰峯值</td><td>1: 10.00 2: 10.20</td></tr> <tr><td>平均值</td><td>1: 439mV 2: -4.60V</td></tr> <tr><td>均方根值</td><td>1: 4.83V 2: 6.69V</td></tr> <tr><td>頻率</td><td>1: 1.000kHz 2: 1.000kHz</td></tr> <tr><td>振幅</td><td>1: 9.60V 2: 9.80V</td></tr> </table>	Measure		峰峯值	1: 10.00 2: 10.00	平均值	1: 469mV 2: -1.63V	均方根值	1: 4.82V 2: 5.07V	頻率	1: 1.000kHz 2: 1.000kHz	振幅	1: 9.60V 2: 9.80V	Measure		峰峯值	1: 10.00 2: 10.00	平均值	1: 486mV 2: -3.07V	均方根值	1: 4.83V 2: 5.72V	頻率	1: 1.000kHz 2: 1.000kHz	振幅	1: 9.60V 2: 9.60V	Measure		峰峯值	1: 10.00 2: 10.20	平均值	1: 439mV 2: -4.60V	均方根值	1: 4.83V 2: 6.69V	頻率	1: 1.000kHz 2: 1.000kHz	振幅	1: 9.60V 2: 9.80V
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線路	結果 (1: 輸入, 2: 輸出)
 <p> <math>E_{in}</math>  <math>60V_{p-p}</math>  <math>E_{out}</math>  <math>60V_{p-p}</math> </p>	<p style="text-align: center;"><b>E=3V</b></p>  <p style="text-align: center;"><b>E=1.5V</b></p>  <p style="text-align: center;"><b>E=0V</b></p> 

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線路	結果 (1: 輸入, 2: 輸出)
	<p style="text-align: center;"><b>E=3V</b></p> 
	<p style="text-align: center;"><b>E=1.5V</b></p> 
	<p style="text-align: center;"><b>E=0V</b></p> 

(表 6)