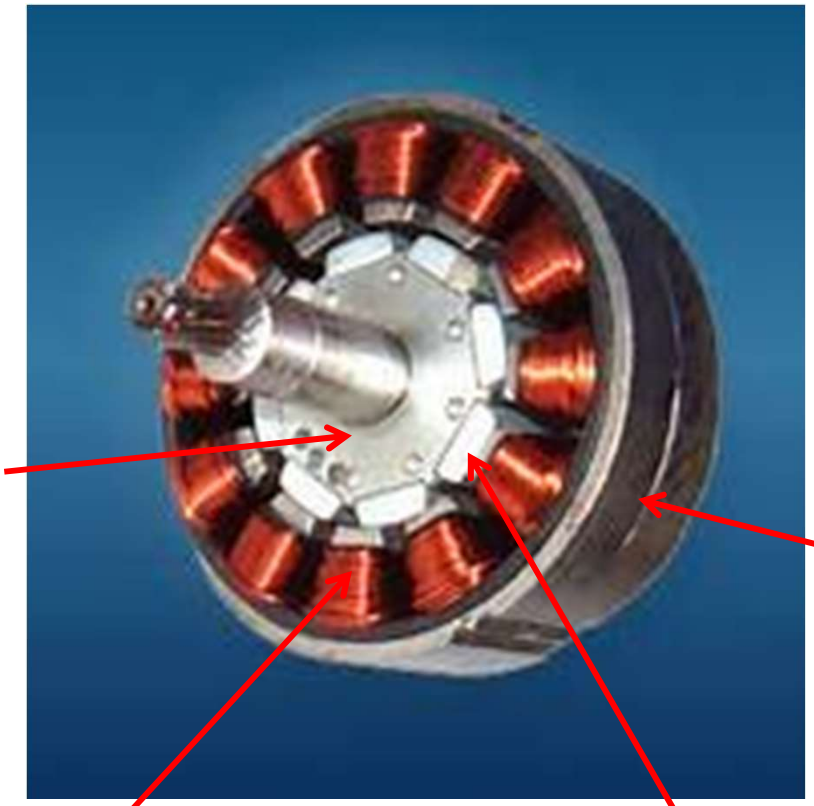
# Hall 相序對位
# 方法說明

# BLDC Motor



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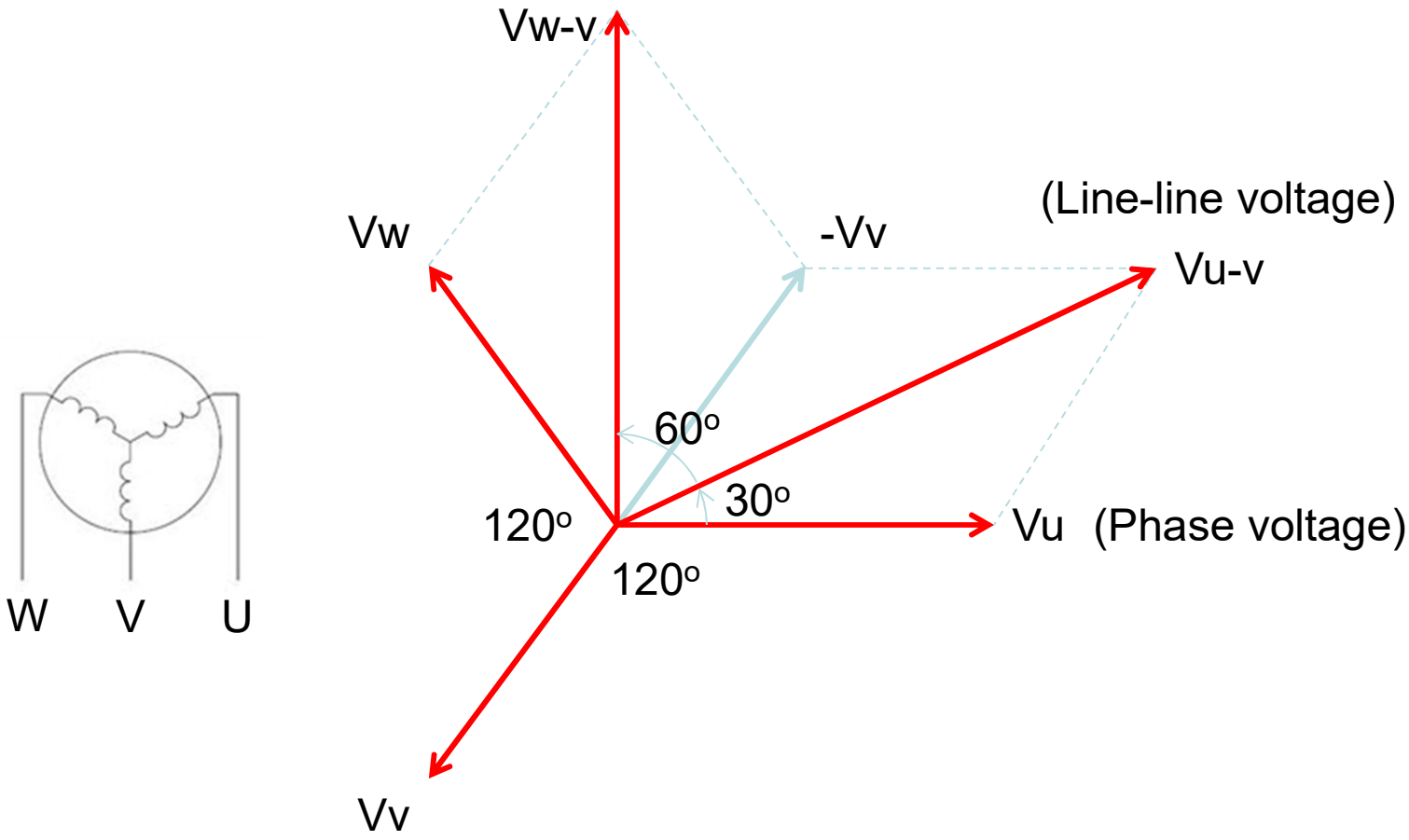
# Voltage Phasor Relation



# Hall 相序對位

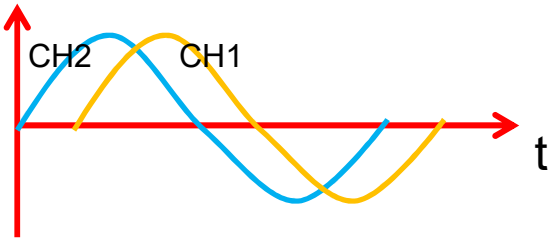
**Step1:**

- 確認馬達正轉方向(馬達U相電壓領先V相120度, V相領先W相120度)

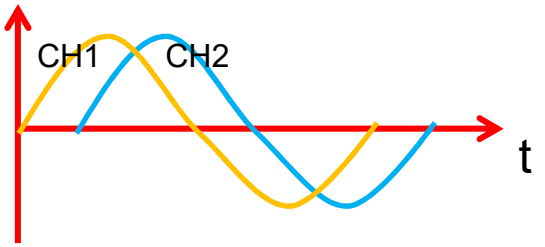
**方法:**

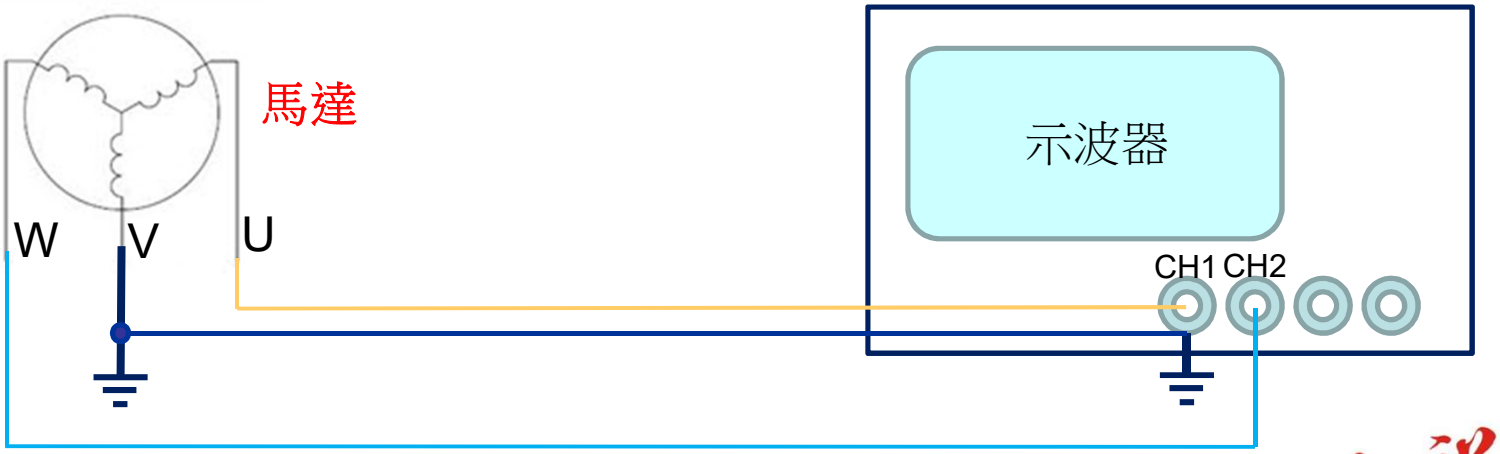
- 馬達UVW三條線脫離驅動板, 將示波器CH1+鉤馬達U相線, CH1 GND鉤馬達V相線, CH2+鉤馬達W相線, CH2 GND鉤馬達V相線, 以工具或手旋轉馬達轉子, 示波器波形若是如圖一則為正轉方向, 如圖二則為反轉方向

圖一:
正轉方向

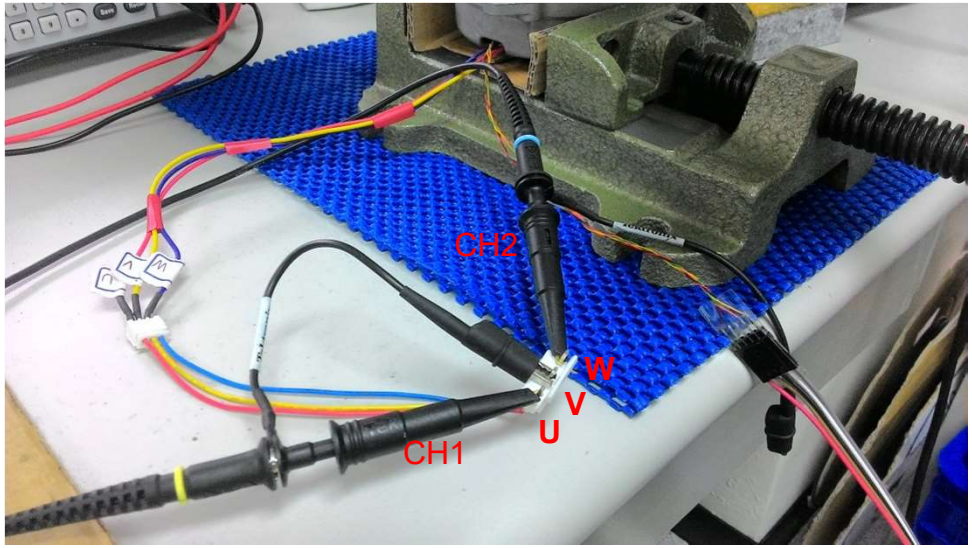



圖二:
反轉方向

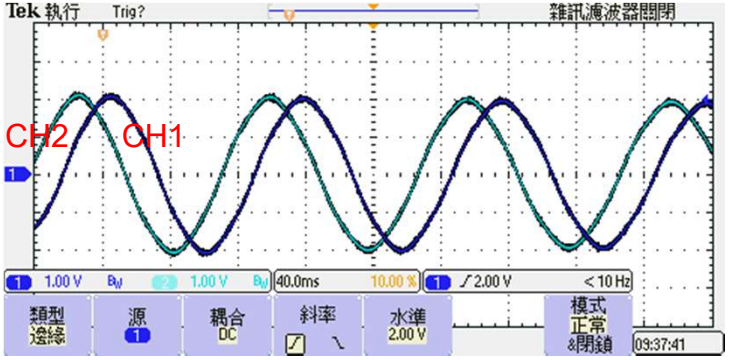


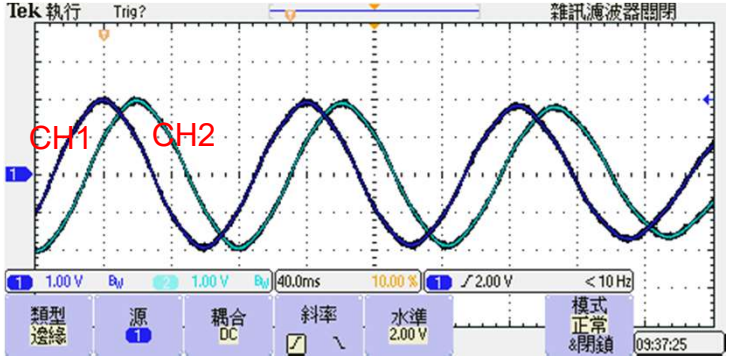
# Hall 相序對位




圖一:
正轉方向




圖二:
反轉方向



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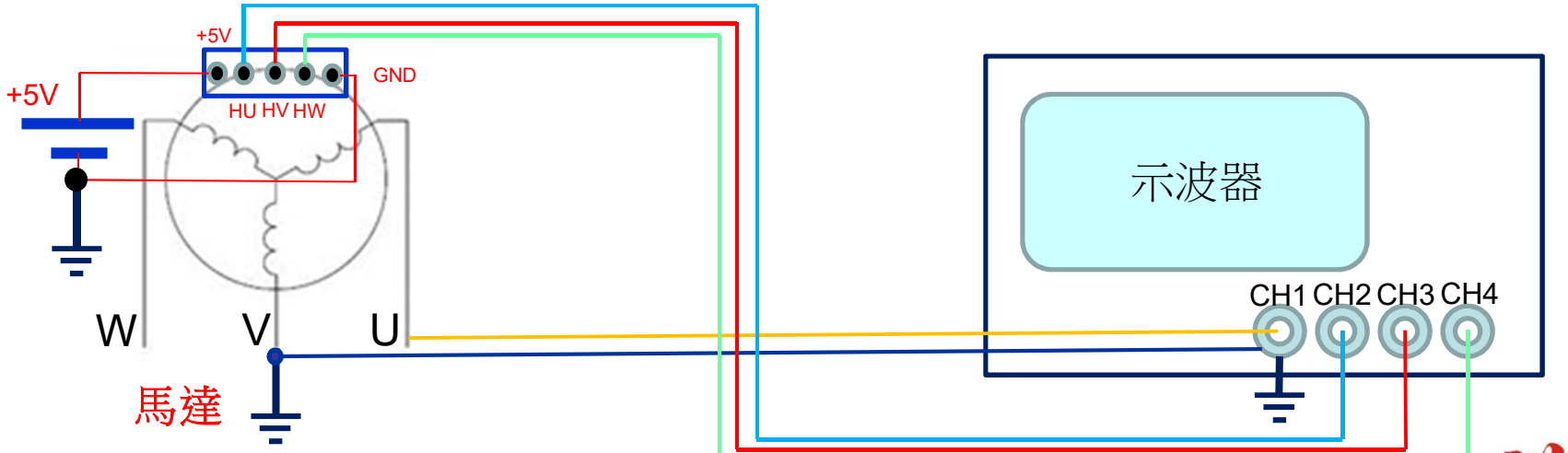
# Hall 相序對位

**Step2:**

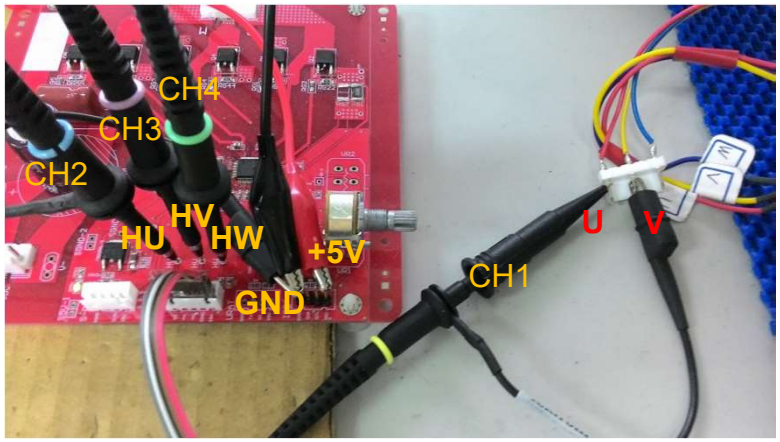
- 確認Hall相序

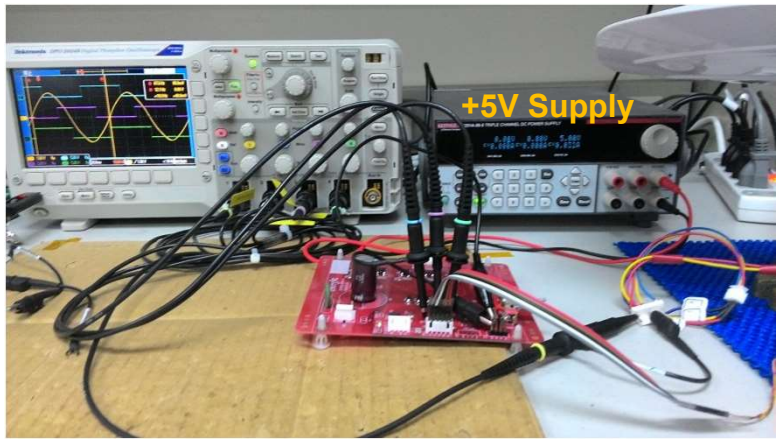
方法:

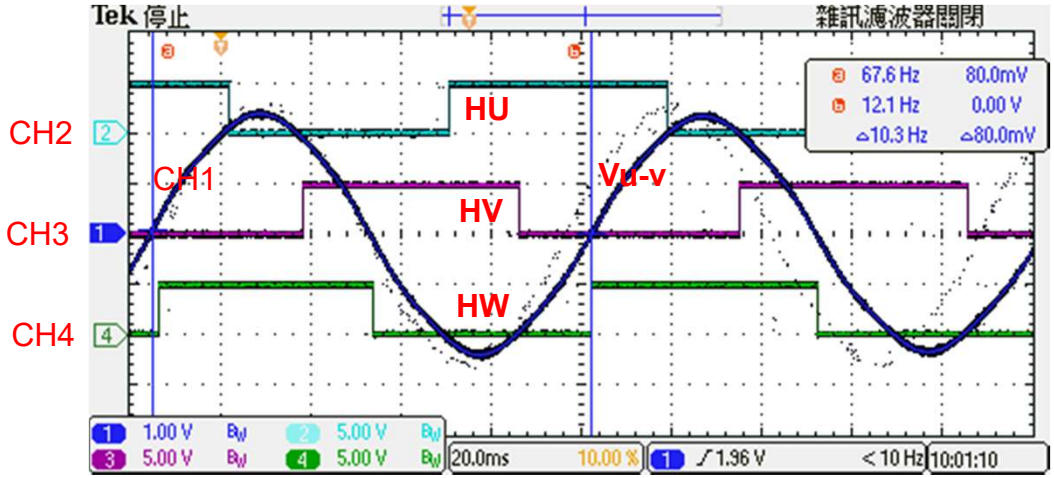
- 示波器CH1:+ 鉤馬達U相線,CH1:GND 鉤馬達V相線
- CH2鉤HU 輸出, CH3鉤HV輸出, CH4鉤HW輸出
- 供給Hall IC +5V電源
- 依據Step1確認的正轉方向, 以工具或手往正轉方向旋轉馬達轉子, 紀錄Vu-v, HU, HV, HW 波形
- HU為MSB, HW為LSB, 以BEMF Vu-v零度為參考起始點, HU,HV,HW在每60度電氣角所代表這六個碼即為ET2201相序碼(見下頁圖例)
- Hall HU, HV, HW是實際接到MCU相對應的HUP, HVP, HWP接腳



# Hall 相序對位




Hall相序碼即為: 513264



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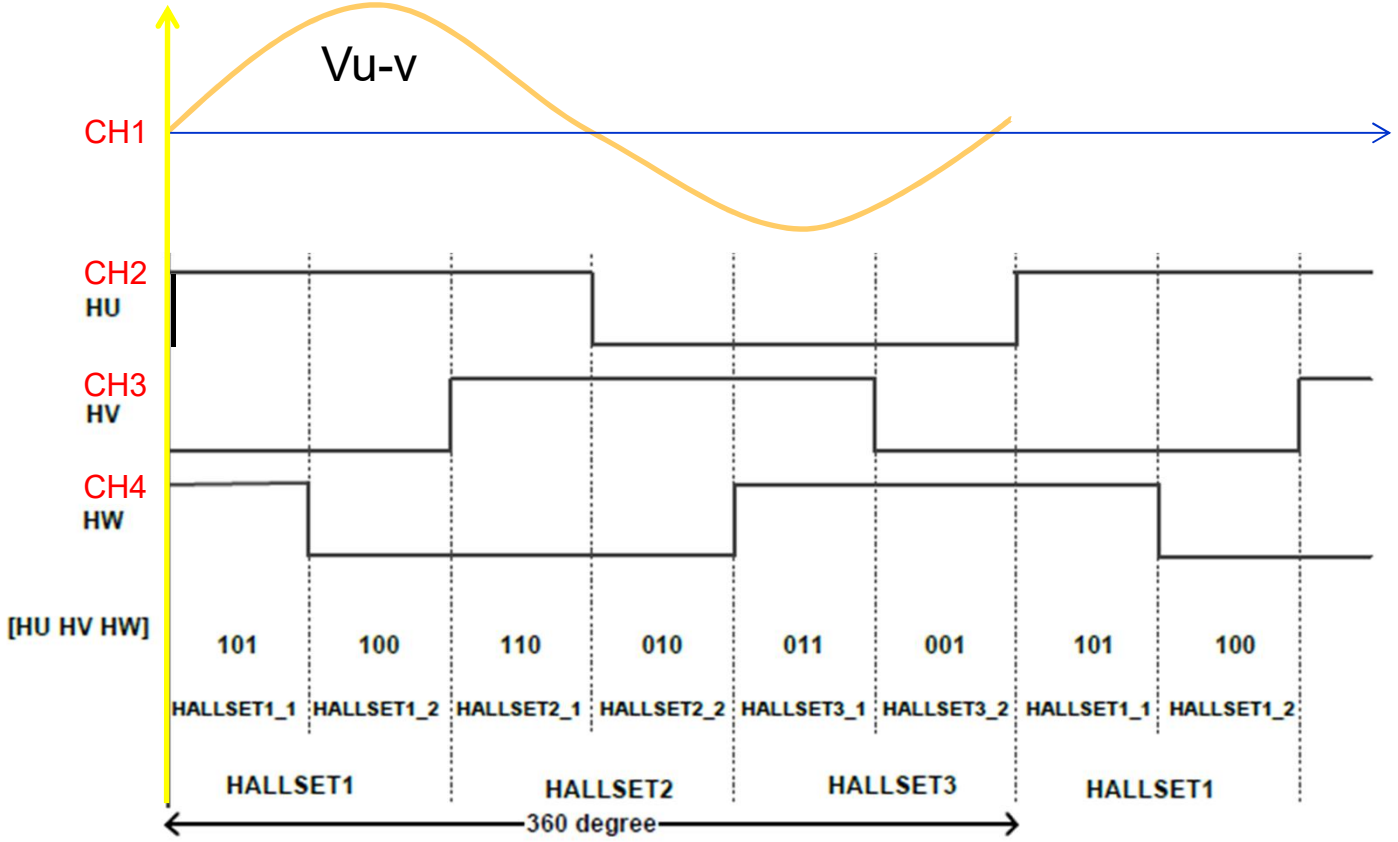
# Hall Sequence

**Status I: Hall signal rising or falling edge 剛好跟BEMF Vu-v過零點附近對齊**




Hall相序碼即為: 546231



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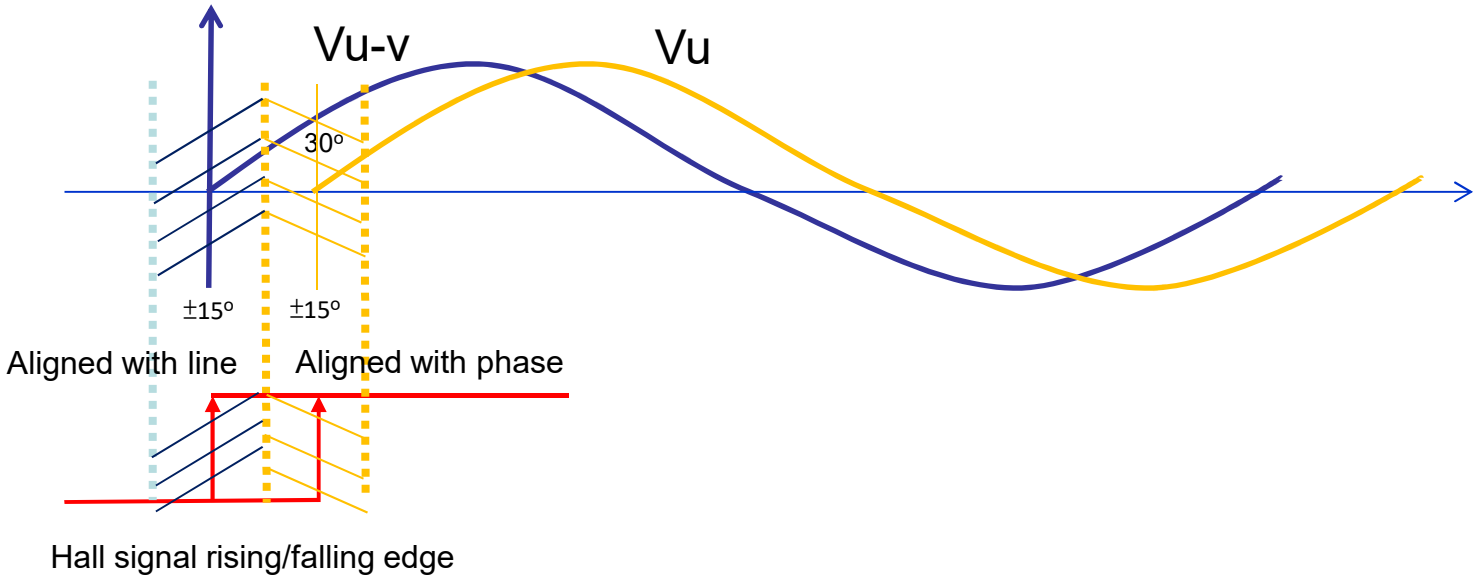
# Hall Sequence

**Status II: Hall signal rising or falling edge 不跟BEMF Vu-v過零點對齊**




MCONT1 Address = 9DH Reset Value = X0110000B

Motor Control Register 1

| | ----- | HCKS[2:0] | | | HALLALS | DMS | MPWMA | AMDS |
|---|---|---|---|---|---|---|---|---|
| Bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| Type | X | R/W | R/W | R/W | R/W | R/W | R/W | R/W |

HALLALS Hall alignment select :

0 : Line voltage (Line to Line)

1 : Phase voltage



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