

Q. tET/tPET 系列模組的 PWM 輸出精準度可以到 1 ms 嗎?

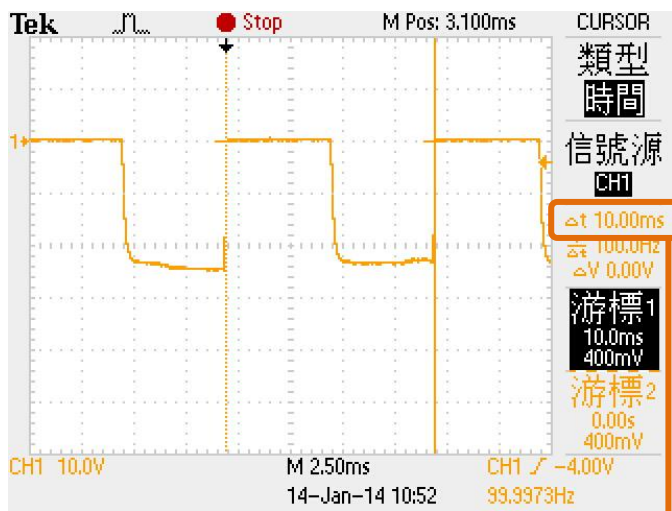
A: 可以的，經過實際測試 Duty Cycle 5 ms 到 15 ms，PWM 精準度可以非常穩定的輸出小於 1 ms (Accuracy < 1 ms)。需要注意的是，在執行 PWM 輸出時，請不要再執行模組的其它功能 (例: DI 頻率量測)，否則可能會降低 PWM 精準度。詳細測試結果如下所示。

■ 測試環境如下:

作業系統:	Windows XP SP3
模組名稱:	tPET-P2C2
Firmware 版本:	v1.2.8
量測儀器:	示波器

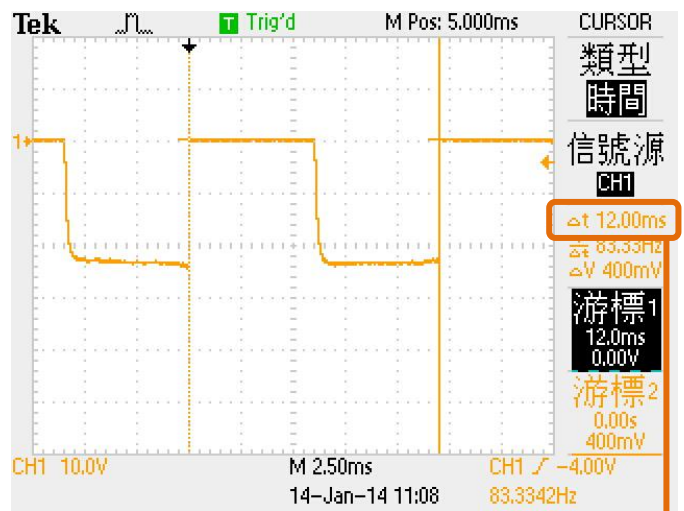
■ 量測 Duty Cycle 5 ms 到 15 ms, 其 PWM 輸出精準度如下列圖所示:

➤ 圖 1: Duty Cycle = 5 ms



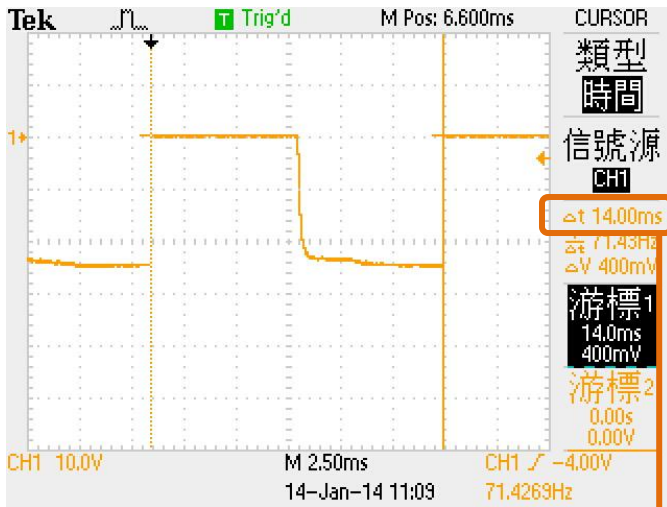
$$\text{Error} = \text{Desired Duty Cycle (High and Low)} - \text{Measured delta t} = (5 \text{ ms} \times 2) - 10.00 \text{ ms} = 0 \text{ ms} (< 1 \text{ ms})$$

➤ 圖 2: Duty Cycle = 6 ms



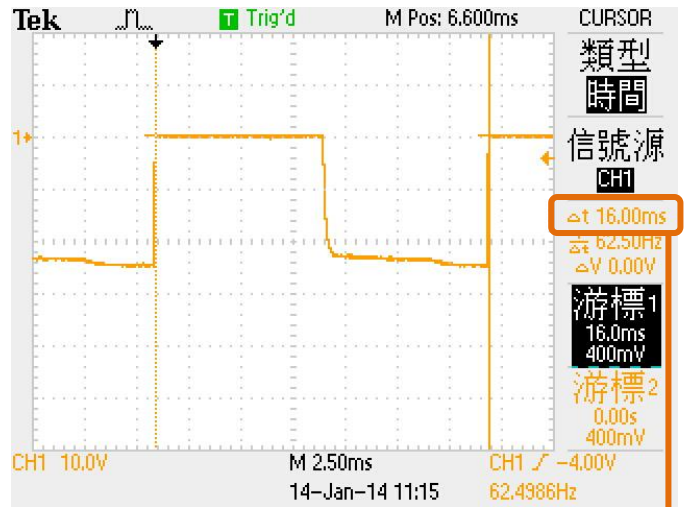
$$\text{Error} = \text{Desired Duty Cycle (High and Low)} - \text{Measured delta t} = (6 \text{ ms} \times 2) - 12.00 \text{ ms} = 0 \text{ ms} (< 1 \text{ ms})$$

➤ 圖 3: Duty Cycle = 7 ms



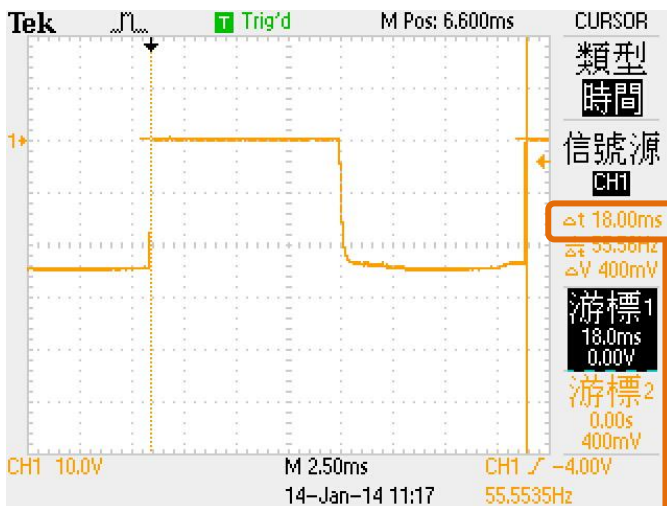
Error =
 Desired Duty Cycle (High and Low) – Measured delta t
 = (7 ms x 2) – 14.00 ms = 0 ms (< 1 ms)

➤ 圖 4: Duty Cycle = 8 ms



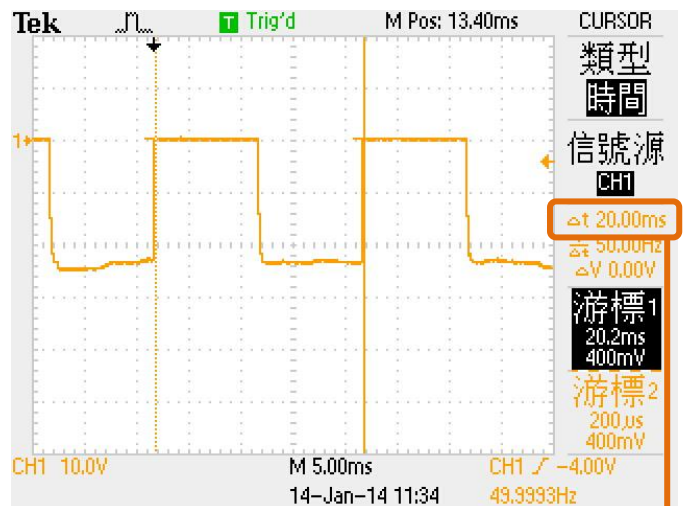
Error =
 Desired Duty Cycle (High and Low) – Measured delta t
 = (8 ms x 2) – 16.00 ms = 0 ms (< 1 ms)

➤ 圖 5: Duty Cycle = 9 ms



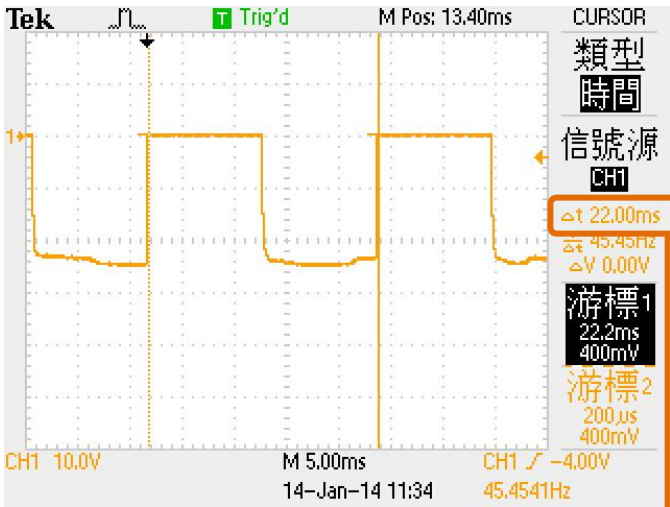
Error =
 Desired Duty Cycle (High and Low) – Measured delta t
 = (9 ms x 2) – 18.00 ms = 0 ms (< 1 ms)

➤ 圖 6: Duty Cycle = 10 ms



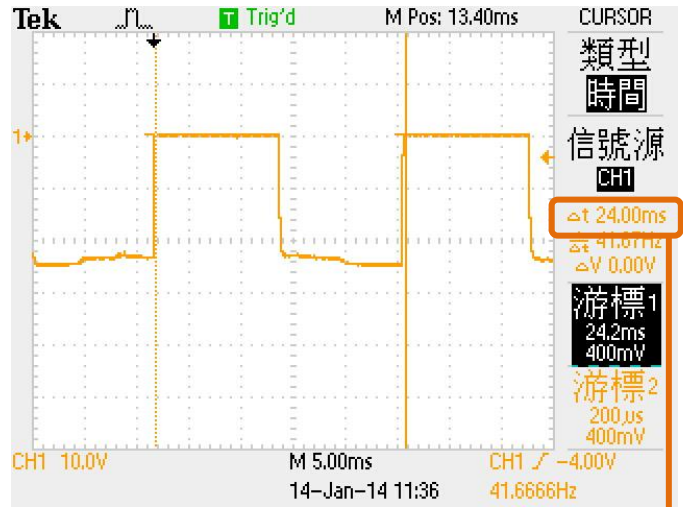
Error =
 Desired Duty Cycle (High and Low) – Measured delta t
 = (10 ms x 2) – 20.00 ms = 0 ms (< 1 ms)

➤ 圖 7: Duty Cycle = 11 ms



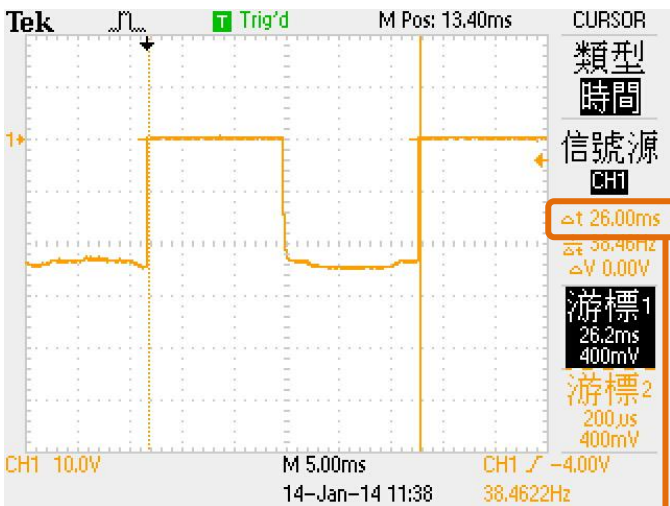
Error =
 Desired Duty Cycle (High and Low) – Measured delta t
 = (11 ms x 2) – 22.00 ms = 0 ms (< 1 ms)

➤ 圖 8: Duty Cycle = 12 ms



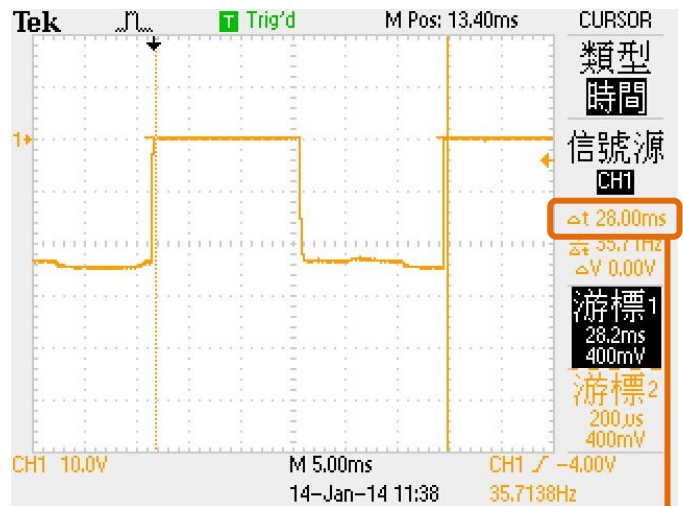
Error =
 Desired Duty Cycle (High and Low) – Measured delta t
 = (12 ms x 2) – 24.00 ms = 0 ms (< 1 ms)

➤ 圖 9: Duty Cycle = 13 ms



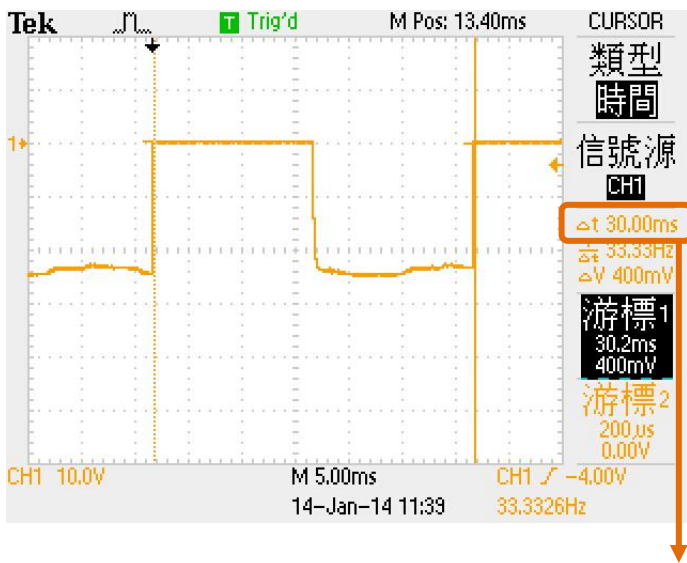
Error =
 Desired Duty Cycle (High and Low) – Measured delta t
 = (13 ms x 2) – 26.00 ms = 0 ms (< 1 ms)

➤ 圖 10: Duty Cycle = 14 ms



Error =
 Desired Duty Cycle (High and Low) – Measured delta t
 = (14 ms x 2) – 28.00 ms = 0 ms (< 1 ms)

➤ 圖 11: Duty Cycle = 15 ms



Error =
Desired Duty Cycle (High and Low) – Measured delta t
= (15 ms x 2) – 30.00 ms = 0 ms (< 1 ms)