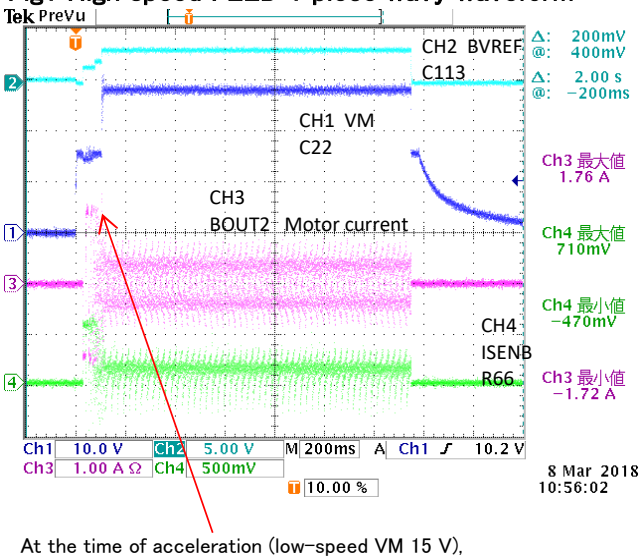
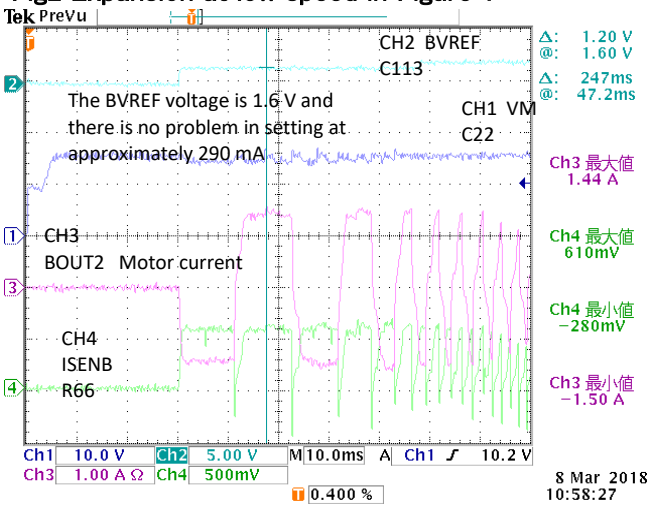
1. Reproduction check at high speed FEED
Purpose: High speed FEED confirms that the load on both voltage and current rises and stress on the device is large
Confirmation method: Perform fast FEED at 20 second intervals.
Ambient temperature: 15 ℃
Device seal: ″DRV 8812 TI 72I C1V1 G4″
RESULT: Approximately 20 sheets FEED, we confirmed abnormal waveform of motor current.

## Fig1 High speed FEED 1 piece wavy waveform



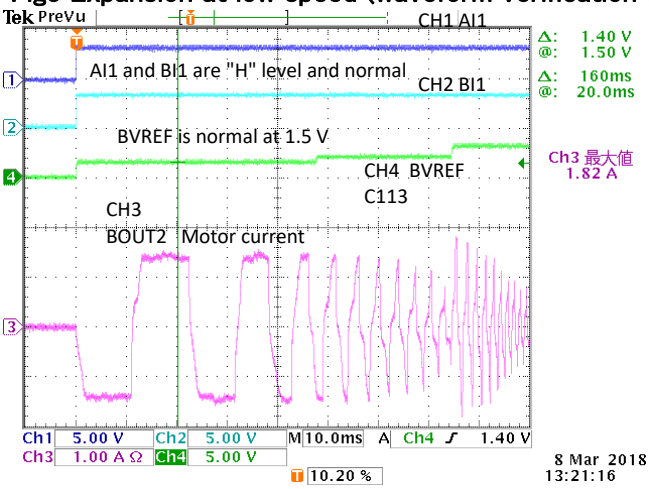

At the time of acceleration (low-speed VM 15 V),
the motor current is flowing by about 1.7 A.It is usually 290 mA.

## Fig2 Expansion at low speed in Figure 1




Since the BVREF voltage is not problem, confirm the waveform of AI 1 and BI 1.

## Fig3 Expansion at low speed (waveform verification of AI 1 BI 1)

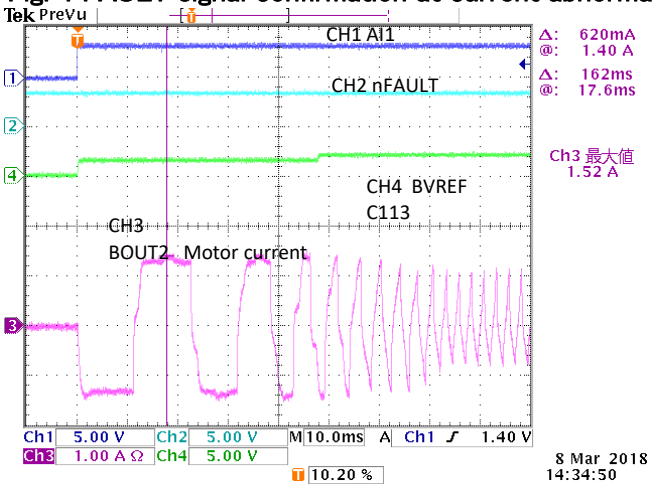



Setting value
AI0=″L″Fixed
AI1=″H″Fixed
BI0=″L″Fixed
BI1=″H″Fixed
Motor electric currents increase to approximately 3 times when AI1 and BI1 become ″L″.
The motor output is not done when AI0 and BI0 are ″H″.
Therefore I identified a wave pattern of BI1 as AI1.

The BVREF voltage is 290mA setting at 1.5V.

There is no problem with the current setting, but the motor current is abnormal. When the motor voltage is 15 V and the motor resistance is 8 Ω, it is 1.875 A. Is not current control done? What?

## Fig. 4 FAULT signal confirmation at current abnormality




When overcurrent is detected, nFAULT goes ″L″ but the level does not go down.
It is the current in the rating and it is not considered as FAULT.

Fig. 5 Wave pattern in the normalcy

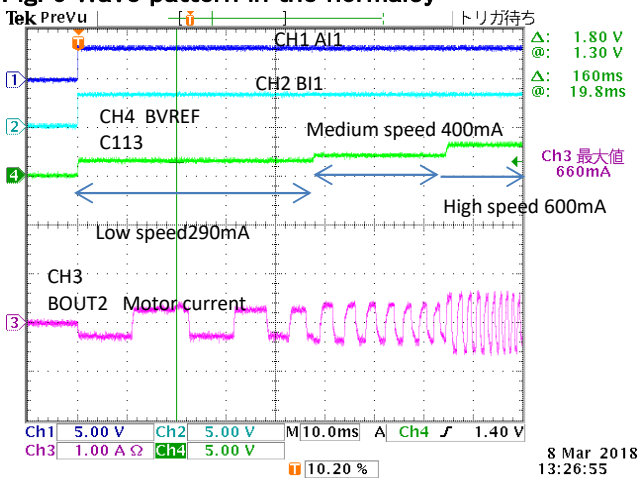
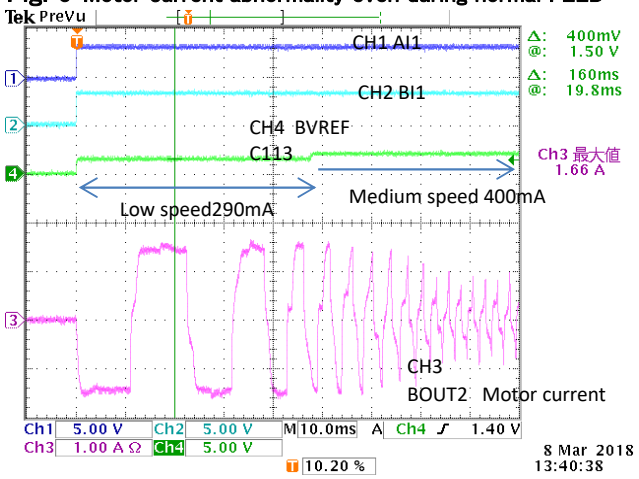



Fig. 6 Motor current abnormality even during normal FEED




2. Confirm with the device purchased from another trading company

Device seal: defective product "DRV8812 TI 72I C1V1 G4"

Purchase from another trading company "DRV8812 TI 3BI C63K G4"

"DRV8812 TI 72I C1V1 G4" has backfeed error, device short, motor current abnormality

Confirmation method: Remove "DRV8812 TI 72I C1V1 G4" from the backfeed NG board and install . "DRV8812 TI 3BI C63K G4".And fast FEED is performed at 20 second intervals.
We made 200 sheets FEED.
The motor current was checked with an oscilloscope.

Ambient temperature: 15 ℃

Result: No abnormal current occurred.

3. Confirmation at 30 ℃ environment

Purpose: Since defects frequently occurred in the 15℃ environment, confirm what is done at 30℃.

Confirmation method: High-speed FEED was performed on the substrate generated at 15℃.
Intervals of 20 seconds.
We confirmed the boards of "DRV 8812 TI 72I C1V1 G4" and "DRV8812 TI 3BI C63K G4", respectively.

Ambient temperature: 30 ℃

Result: No abnormal current occurred.