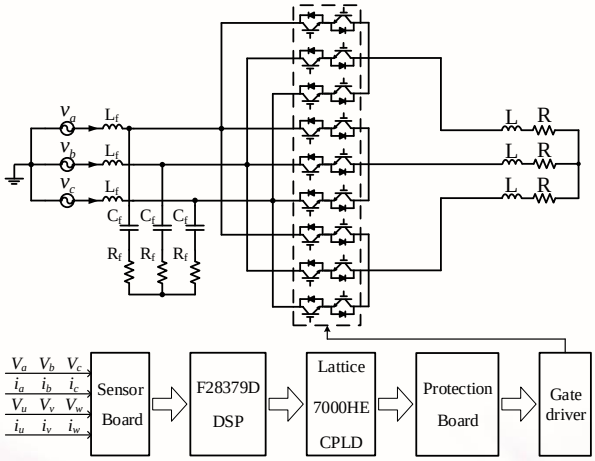
電機系 DEPARTMENT OF ELECTRICAL ENGINEERING

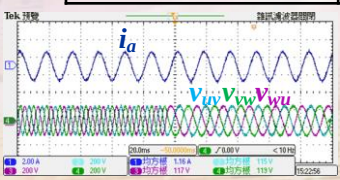
Power Conversion Laboratory

Direct Matrix Converter (DMC)

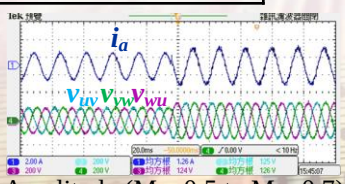
- Modulation
- Commutation
- Common-Mode Voltage Suppression
- Efficiency
- Bidirectional Power Control



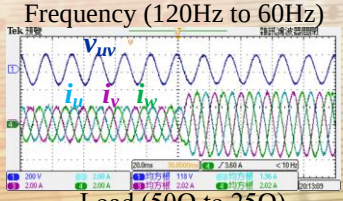
Sign	Value
Input voltage source	220V/60Hz
Input inductance	0.65mH
Input capacitor	20μF
Input resistance	3Ω
Output inductance	10mH
Switching frequency	10kHz
Dead time	2μs



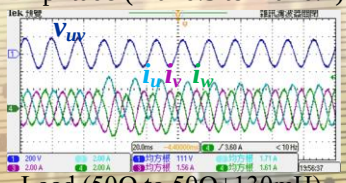
Frequency (120Hz to 60Hz)



Amplitude (Ma=0.5 to Ma=0.7)



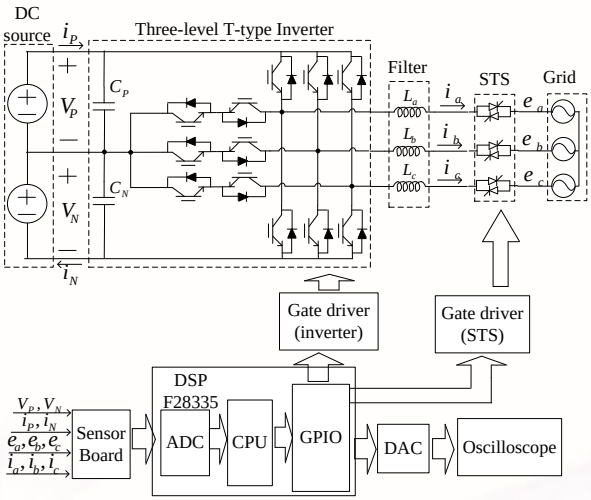
Load (50Ω to 25Ω)



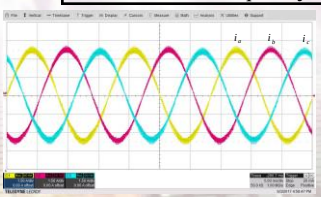
Load (50Ω to 50Ω+130mH)

Three-Level T-type Inverter

- Modulation
- Neutral-Point Voltage/Current Control
- Common-Mode Voltage Suppression
- Efficiency
- LVRT



Sign	Value
Switching frequency	10kHz
Inductance(L_a,L_b,L_c)	5mH
Capacitors(C_P、C_N)	2200μF
Line voltage(e_{ab},e_{bc},e_{ca})	220V
Grid frequency	60Hz



Line current in Sinusoid PWM

Line voltage in Sinusoid PWM

Phase voltage in Sinusoid PWM

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