Bumhan

범한유니솔루션

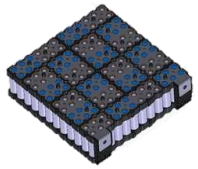
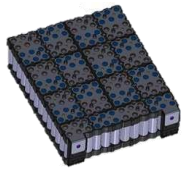
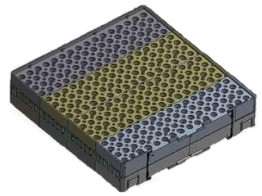
Global Leading Company
in Green Energy

Standard Module Lineup
M50L(T)

용인) 경기도 용인시 처인구 남사읍 수세로86번길 9(17118)
동탄) 경기도 화성시 동탄산단2길 7-8(18487)

Homepage) www.bumhanunisol.com

M50 Standard Module Lineup 1

Module	88.3Vdc	103.0Vdc	88.3Vdc	58.9Vdc	44.2Vdc	103.0Vdc	51.5Vdc	58.9Vdc	29.4Vdc
	24S6P-M50	28S6P-M50	24S8P-M50	16S12P-M50	12S16P-M50	28S8P-M50	14S16P-M50	16S16P-M50	8S32P-M50
Nominal / Rated Energy	2.62 / 2.42kWh	3.06 / 2.83kWh	3.49 / 3.23kWh			4.08 / 3.77kWh		4.66 / 4.31kWh	
Nominal / Rated Capacity	29.7 / 27.6Ah	29.7 / 27.6Ah	39.6 / 36.8Ah	59.4 / 55.2Ah	79.2 / 73.6Ah	39.6 / 36.8Ah	79.2 / 73.6Ah	79.2 / 73.6Ah	158.4 / 147.2Ah
Nominal Voltage[V]	88.3	103.0	88.3	58.9	44.2	103.0	51.5	58.9	29.4
Voltage Range[V]	72.0~99.6	84.0~116.2	72.0~99.6	48.0~66.4	36.0~49.8	84.0~116.2	42.0~58.1	48.0~66.4	24.0~33.2
Usable Voltage Range[V] (SOC 85% operation)	75.6~98.4	88.2~114.8	75.6~98.4	50.4~65.6	37.8~49.2	88.2~114.8	44.1~57.4	50.4~65.6	25.2~32.8
Design									
Dimension [WDH, mm]	290*305*88	290*355*88	368*305*88			368*350*88		368*396*88	
Weight[kg]	15	17	19			22		25	

Pack Energy[kWh]	10.5kWh	9.2kWh	14kWh	21kWh	42kWh	24.5kWh	49.0kWh	28.0kWh	56.0kWh
Configuration	4modules	3modules	4modules	6modules	8modules	6modules	12Modules	6modules	12modules
Pack Voltage[V]	353.3	309.1	353.3			618.2		353.3	

M50 Standard Module Lineup 2

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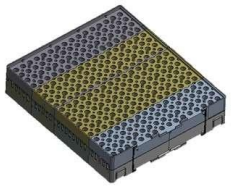
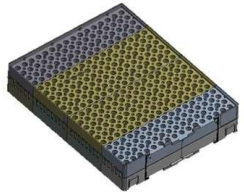
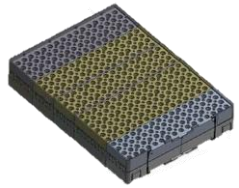
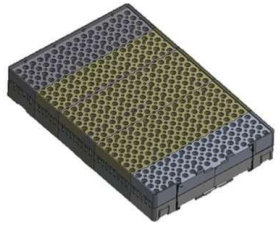
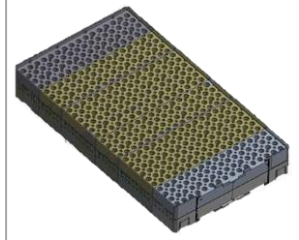
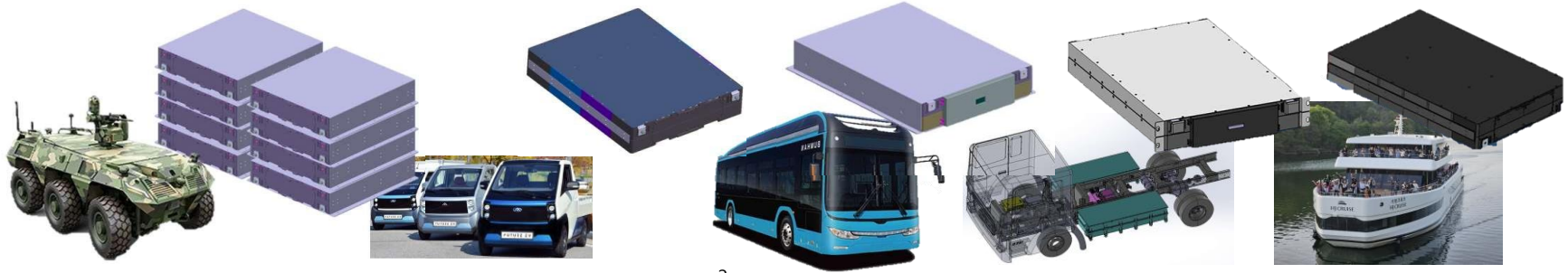
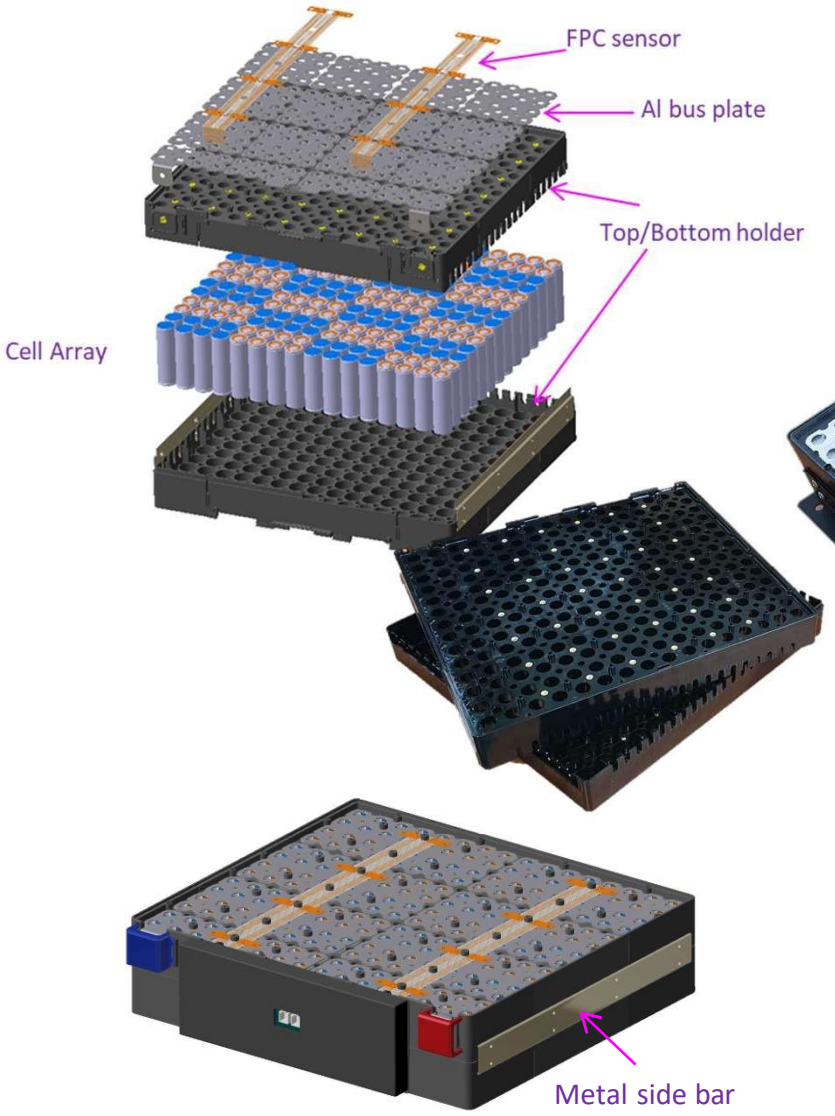
Module	66.2Vdc	44.2Vdc	88.3Vdc	73.6Vdc	36.8Vdc	51.5Vdc	58.9Vdc	44.2Vdc	51.5Vdc
	18S16P-M50	12S24P-M50	24S12P-M50	20S16P-M50	10S32P-M50	14S24P-M50	16S24P-M50	12S32P-M50	14S32P-M50
Nominal / Rated Energy	5.25 / 4.85kWh			5.82 / 5.39kWh		6.12 / 5.66kWh	6.99 / 6.46kWh		8.15 / 7.54kWh
Nominal / Rated Capacity	79.2/73.6Ah	118.8/110.4Ah	59.4/55.2.4Ah	79.2/73.6Ah	158.4/147.2Ah	118.8 / 110.5Ah	118.8/110.4Ah	158.4 / 147.2Ah	158.4 / 147.2Ah
Nominal Voltage[V]	66.2	43.9	88.3	73.6	36.8	51.5	58.9	44.2	51.5
Voltage Range[V]	54.0~74.7	36.0~49.8	72.0~99.6	60.0~83.0	30.0~41.5	42 ~ 58.1	48.0~66.4	36.0~49.8	42.0~58.1
Usable Voltage Range[V] (SOC 85% operation)	56.7~73.8	37.8~49.2	76.8~98.4	33.0~82.0	31.5~41.0	44.0~57.4	50.4~65.6	37.8~49.2	44.7~57.4
Design									
Dimension [WHD, mm]	368*442*88			368*487*88		368*547*88	368*578*88		368*668*88
Weight[kg]	28			31		33	38		43

Pack Energy[kWh]	52.5kWh	42kWh	36.7kWh	52.5kWh	104.9kWh	73.4kWh	42.0kWh	56.0kWh	104.9kWh	97.9kWh
Configuration	10modules	8modules	7modules	9modules	18Modules	12modules	6modules	8modules	15modules	12modules
Pack Voltage[V]	662.4	353.3	618.2	662.4		618.2	353.3		662.4	618.2

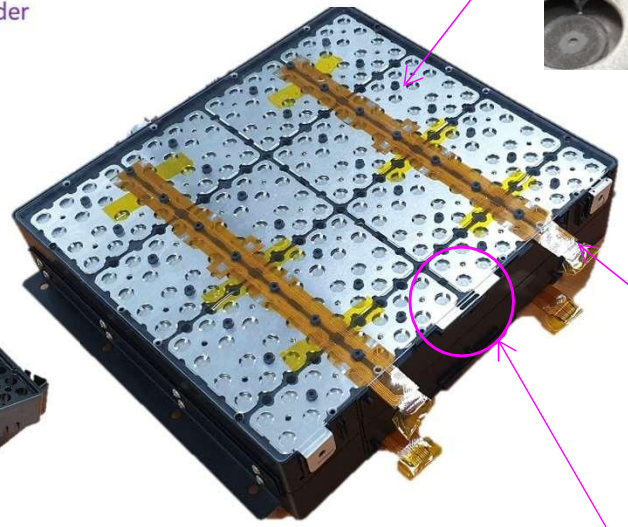


Standard Module Structure

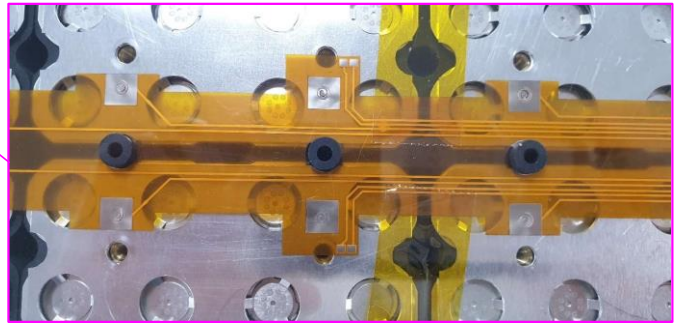
✓ **Advanced VE design**



✓ **1.0Al bus / 0.3t Al tab Assy**



✓ **FPC sensor**

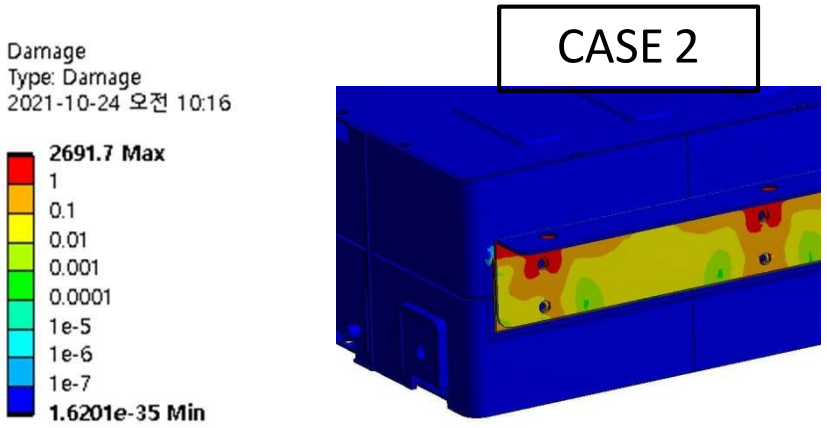


✓ **1.0t Al bus fuse (Optional)**

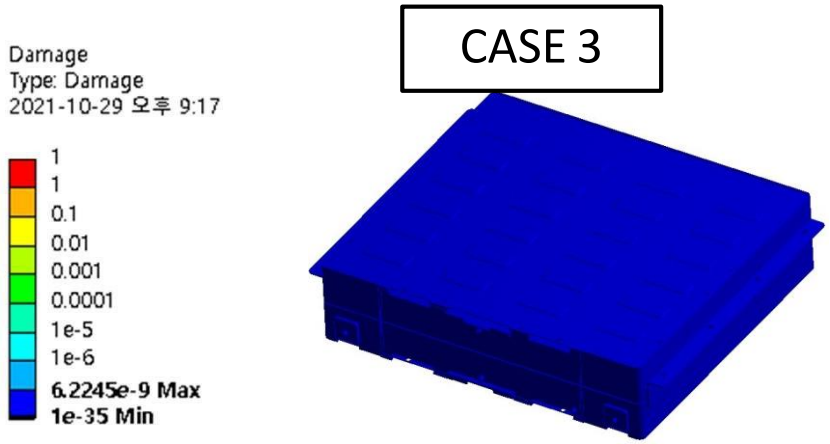
Standard Module Structure-Fatigue Analysis

X-Direction (Damage Index)

CASE 2

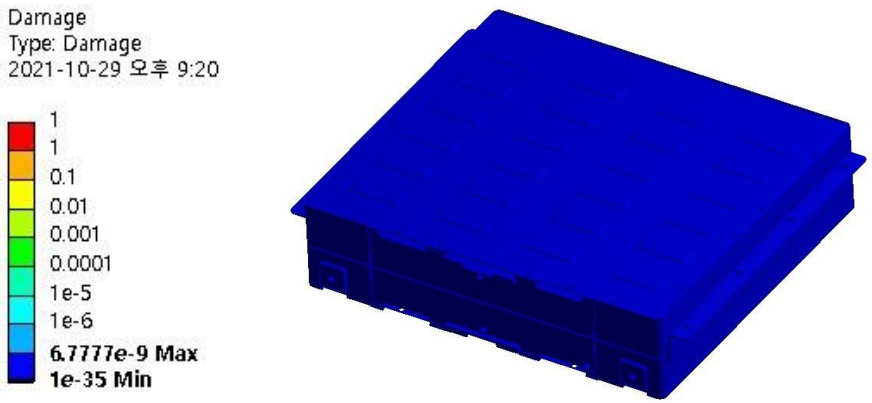


CASE 3

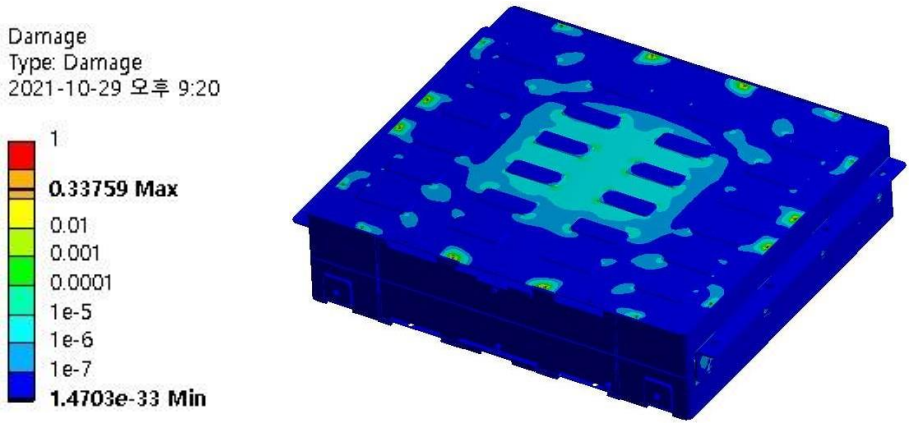


- Case 3의 Damage Index는 전 주파수 영역에서 1이하로 내구에 문제가 없을 것으로 판단됩니다.

Y-Direction (Damage Index)

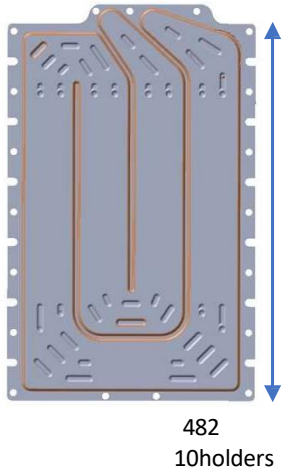
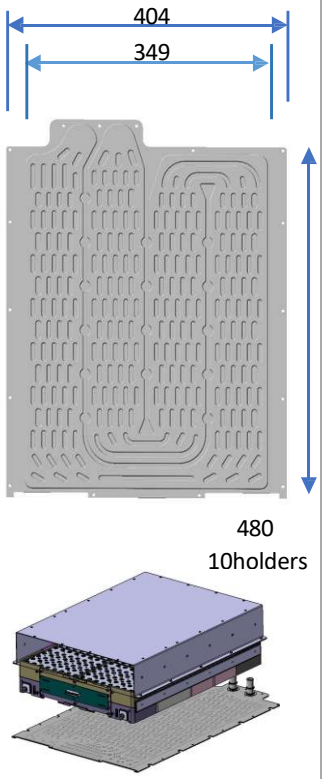
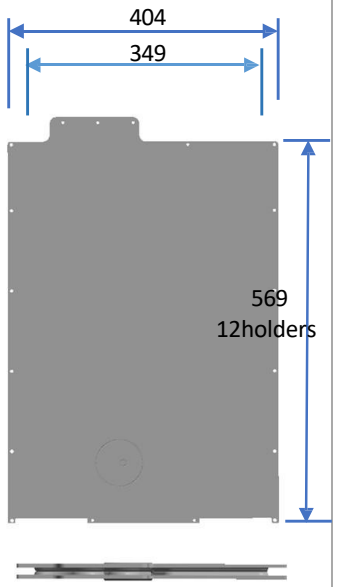
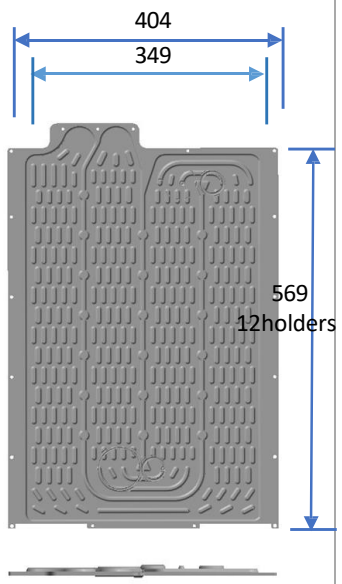
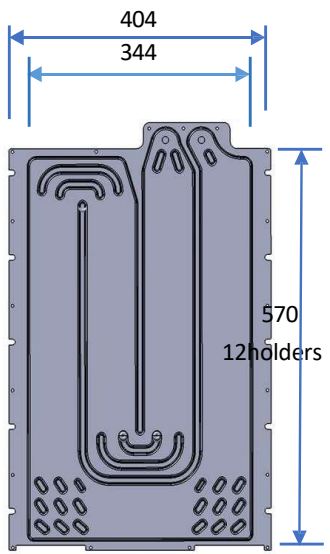
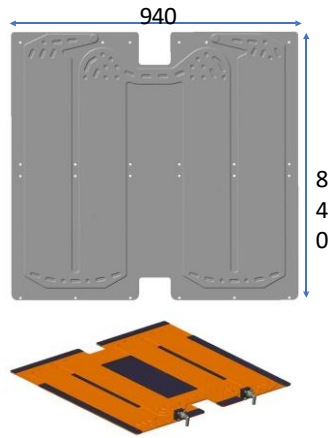
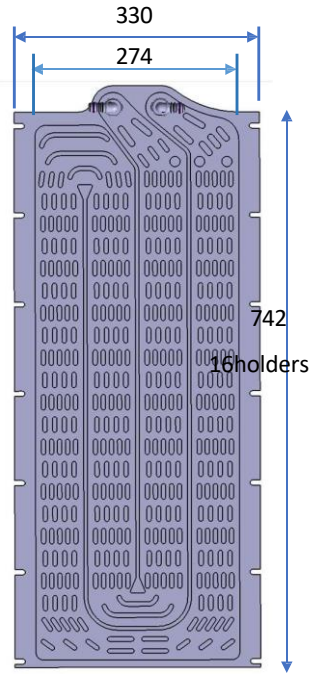


Z-Direction (Damage Index)



- X, Y, Z 모든 방향에서 damage index 1 이하로 내구에 문제가 없을 것으로 판단됩니다.

수냉판 Lineup

디자인							
구분	한화 무인수색 양면	단면 480x404	2단 양면 404x569	1단 404x569	양면 570x404	FEV 양면	고효율 충전과제 단면
내경 파이프	9.8mm	13.8mm	13.8mm	13.8mm	10.8mm	10.8mm	9.8mm
사용처	10S24P (2*6홀더)	10S32P or 14S24P	12S32P	12S32P	12S36P	12S24P	32S10P (2*6홀더)

Customized Module

21700 전용 3type (2*6, 2*8, 2*9 holder)의 표준부품으로 레고블럭 조립과 같이 직병렬 조합하여 다양한 모듈 구성 가능

▶2*6 cell holder

M4 sensing*1p or 2p

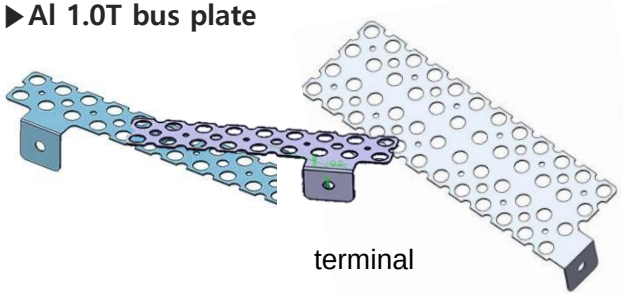
▶2*8 cell holder

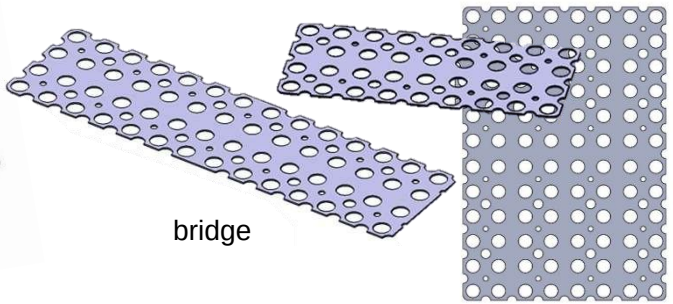
M4 sensing*2p

▶2*9 cell holder

M4 sensing*3p

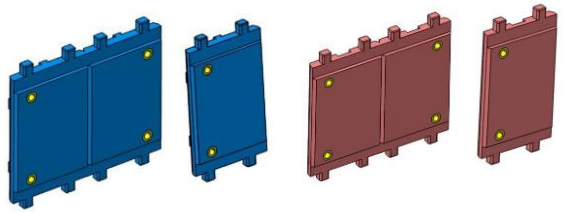
▶Al 1.0T bus plate



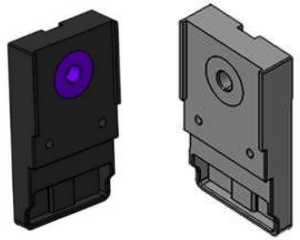


D bus

▶Insulating block



▶Terminal block



Various Customized Module