

CARD EDGE PRODUCT FAMILY

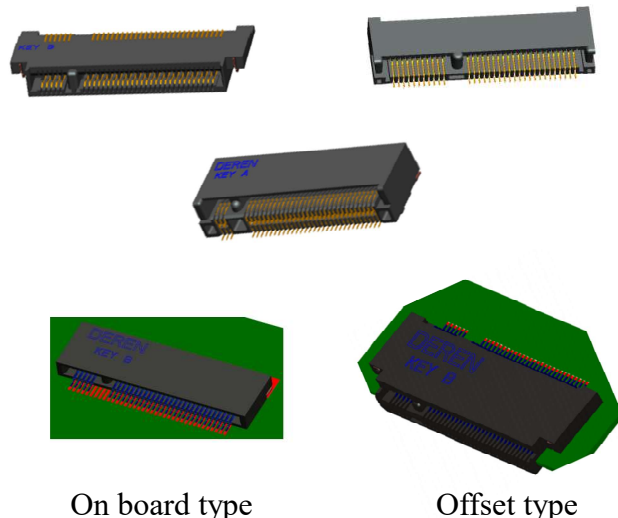
M.2



DEREN

NGFF is the designated codename for the Next Generation Form Factor to be used for mobile add-in cards. M.2 is its formal name. M.2 is a family of form factors that will enable expansion, contraction, and higher integration of functions onto a single form factor module solution. The M.2 is a natural transition from the Mini Card and Half-Mini Card to smaller form factor in both size and volum. The M.2 family of form factors is intended to support multiple function add-in cards or modules that include the following:

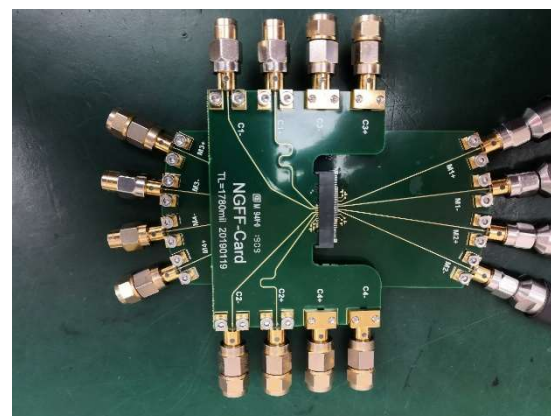
- WiFi
- Bluetooth
- Global Navigation Satellite Systems (GNSS)
- Near Field Communication (NFC)
- WiGig
- WWAN (2G, 3G and 4G)
- Solid-State Storage Devices
- Other & Future Solutions (e.g. Hybrid Digital Radio (HDR))



On board type

Offset type

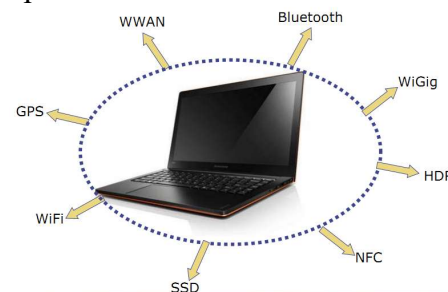
The M.2 modules and corresponding system interconnects based on a 75 position edge card connection scheme. The modules are typically not interchangeable between sockets. Therefore, each socket will have a unique mechanical key. The mechanical key uses up 8 pin locations (4 on the topside and 4 on the bottom side). So the connector will have 67 usable pins available but at alternate pin locations within the generic 75 pin locations. The generic 75-pin connector is able to accommodate 12 different mechanical keys that are designated by a letter:



Key ID	Pin Location	Interface
A	8 - 15	2x PCIe x1/USB 2.0/I2C/DP X4
B	12 - 19	PCIe x2/SATA/USB 2.0/USB 3.0/HSIC/SSIC/Audio/UIM/I2C
C	16 - 23	Reserved for Future Use
D	20 - 27	Reserved for Future Use
E	24 - 31	2x PCIe x1/USB 2.0/I2C/SDIO/UART/PCM
F	28 - 35	Future Memory Interface (FMI)
G	39 - 46	Generic (Not use for M.2)
H	43 - 50	Reserved for Future Use
J	47 - 54	Reserved for Future Use
K	51 - 58	Reserved for Future Use
L	55 - 62	Reserved for Future Use
M	59 - 66	PCIe x4/ SATA

TARGET MARKET

- Note book
- Ultra book
- Tablet platform



FETURE

- Capable of PCI Express Gen4 speed.
- Reference differential impedance: 85Ω
- 20 degree angle module insertion & extraction
- Optional connector height
- Share a common footprint

<http://www.deren.com.cn>
 E-mail: sales@deren.com
 Tel:0755-3326000

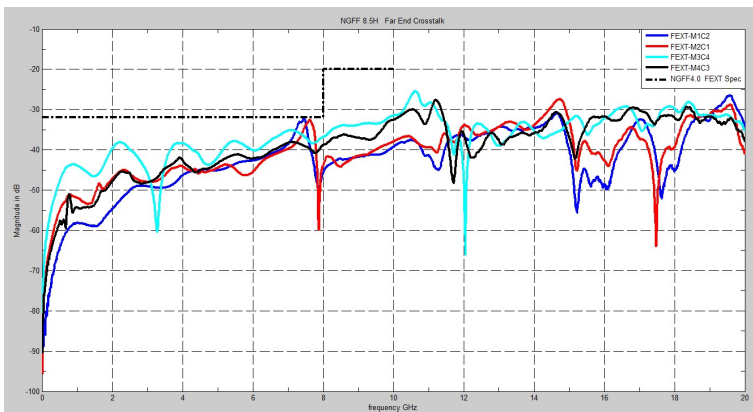
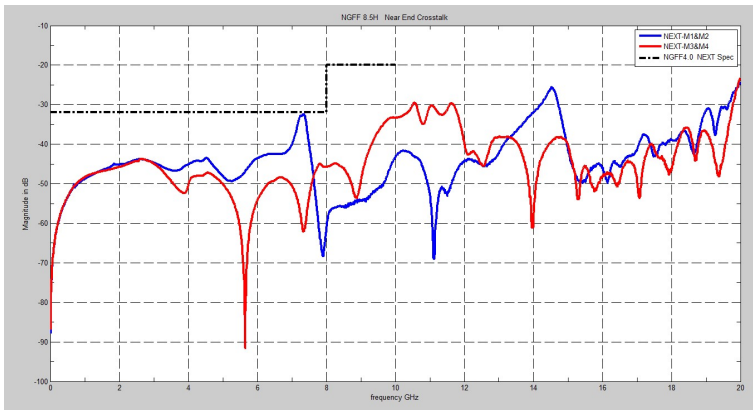
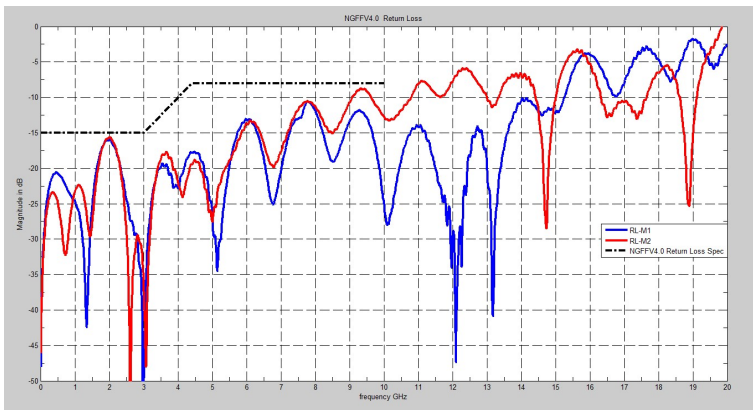
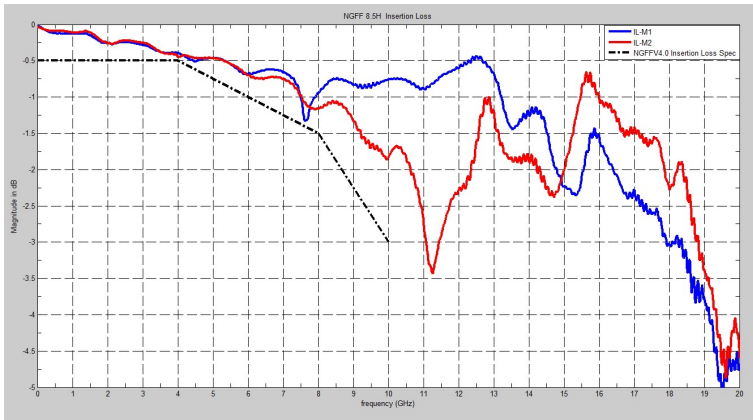
BENEFIT

- Meets PCIe M.2 Spec.
- Minimizes impedance discontinuities
- Lower insertion force
- Meet customer different applications
- Easy for PCB routing



TECHNICAL INFORMATION

SIGNAL INTEGRITY PERFORMANCE



MECHANICAL PERFORMANCE

- Insertion force (module to connector): 25N max
- Terminal retention force: 100gf min.
- Durability: 25cycles.

ELECTRICAL PERFORMANCE

- Low level contact resistance: 55mΩ initial, Δ 20mΩ
- Insulation resistance: 100MΩ min.
- Dielectric withstanding voltage: 300VAC.
- Current rating: 0.5A/pin De-rate

ENVIRONMENTAL

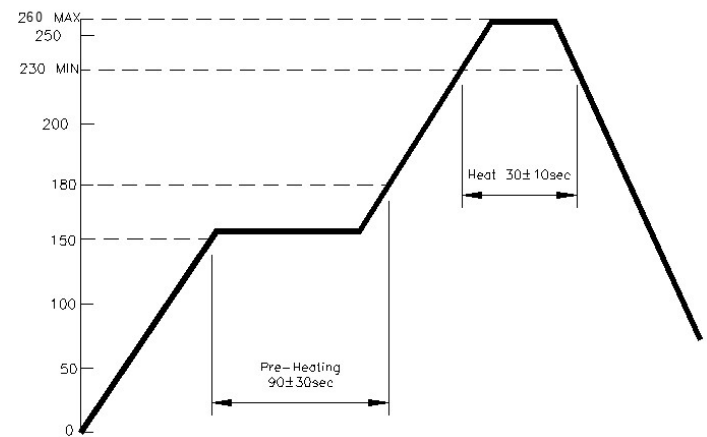
- Flammability: UL 94 V-0
- Low halogen: 1000ppm max. Cl, 1000ppm max Br.
- Compliant with RoHS directive 2011/65/EU
- Operating Temperature: -40° C to + 80° C

SPECIFICATION

- PCI Express M.2 SPEC:
- DEREN PRODUCT SPEC: DR-PS-0024

APPLICATION SPEC

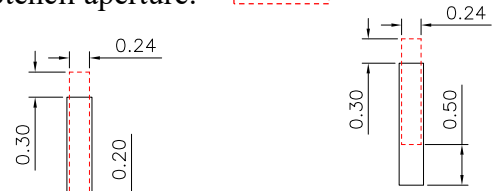
- Wave solder peak temperature: Max. 265° C , 10S
- Reflow temperature profile:



- Recommended SMT stencil thickness: 0.12mm

PCB solder pad:

Stencil aperture:



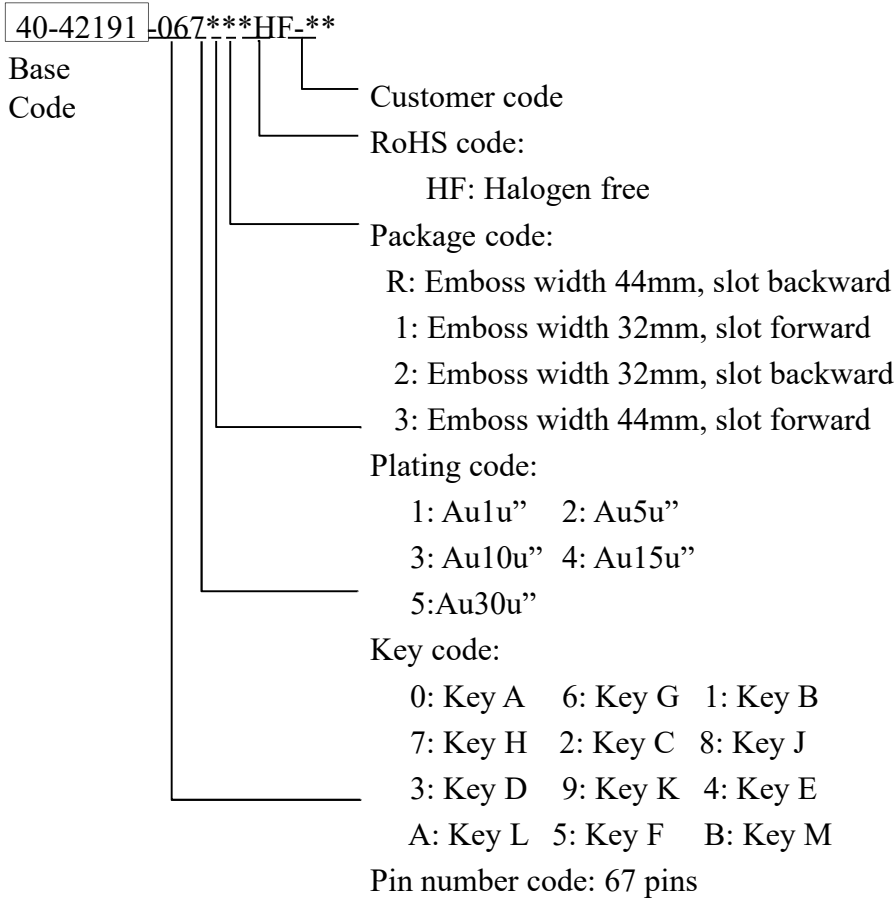
Common

Specially for 2.65H low contact

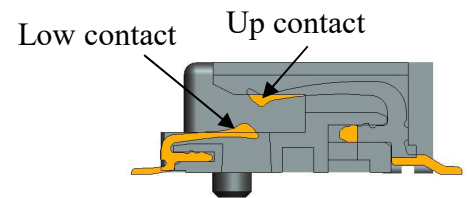
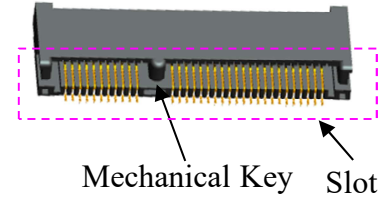


PART NUMBERS & STRUCTURE

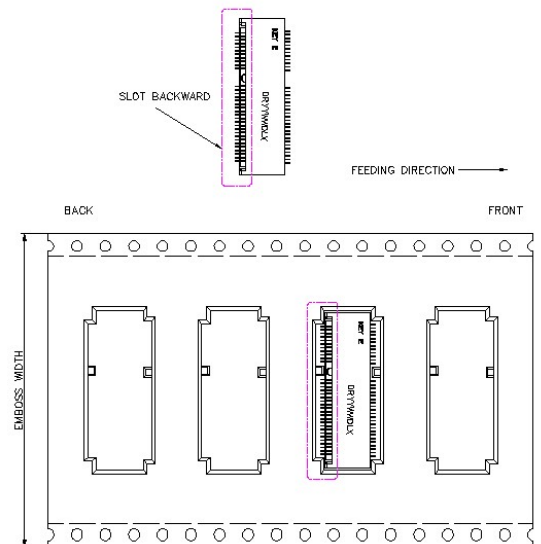
M.2 Part Number Description:



Product Structure :



Packing Information:





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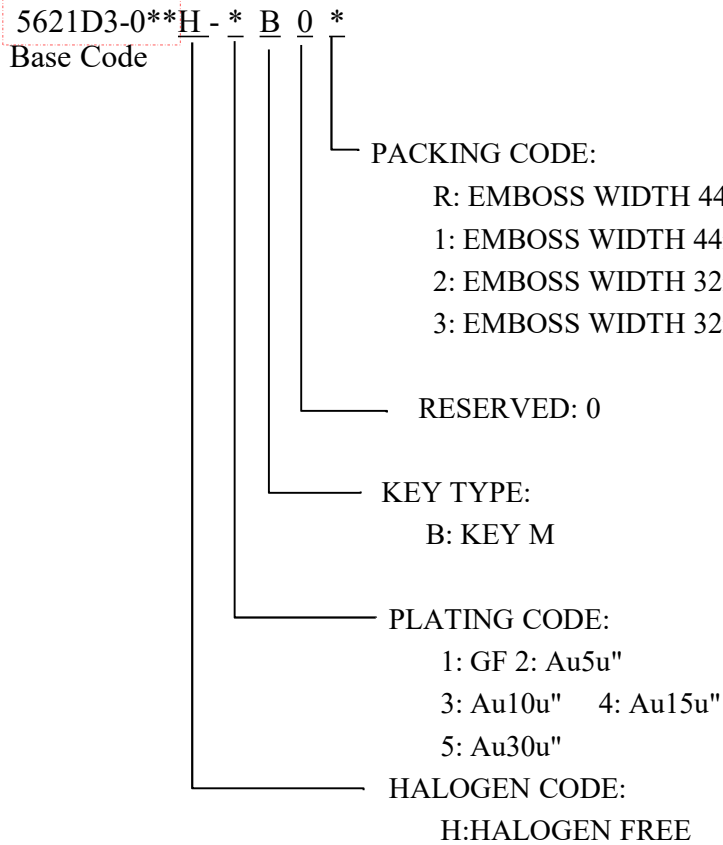
M.2 Part Number :

P/N	Onboard Height	STD / RVS	Pitch	Length	Width	Height	Center Height	Q'ty/Reel	Q'ty/Box	Available Key	Speed
40-42569-*	1.6	STD	0.5	23.8	8.35	2.2	0.45	1500	7500	A, B, E, M	Gen3
40-42228-*	2	STD	0.5	21.9	6.05	2	0.8	1500	7500	A, B, E, M	Gen3
562119*	2	STD	0.5	21.9	6.05	2	0.8	1500	7500	A, B, E, M	Gen4
40-42313-*	2.65	STD	0.5	21.9	6.5	2.65	1.45	1500	7500	B, E, M	Gen3
40-42381-*	2.65	RVS	0.5	22.7	7	2.65	1.45	1500	7500	M	Gen3
40-42064-*	3	STD	0.5	21.9	6.33	3	1.9	1400	7000	A, B, E, M	Gen3
562121*	3	STD	0.5	21.9	6.33	3	1.9	1400	7000	A, B, E, M	Gen4
40-42022-*	3.5	STD	0.5	21.9	7.2	3.5	2.4	1200	6000	A, B, M	Gen3
40-42191-*	4	STD	0.5	21.9	7.2	4	2.95	1100	6600	A, B, E, M	Gen3
562117*	4	STD	0.5	21.9	7.2	4	2.95	1100	6600	M	Gen4
B										Gen4	
E										Gen4	
5621D3-001Hxxxxx	4.8	STD	0.5	21.9	7.2	4.8	3.6	900	4500	B,E,M	Gen4
5621D3-002Hxxxxx	4.8	RVS	0.5	21.9	7.2	4.8	3.6	900	4500	M	Gen4
40-42289-*	5.5	STD	0.5	21.9	7.2	5.5	4.3	900	4500	A, B, E, M	Gen3
562128*	5.5	STD	0.5	21.9	7.2	5.5	4.3	900	4500	E	Gen4
562129*										M	Gen4
40-42541-*	5.8	STD	0.5	21.9	7.5	5.8	4.6	800	4800	B, M	Gen3
40-42406-*	6.4	STD	0.5	21.2	7.2	6.4	5.2	750	4500	B, E, M	Gen3
562122-*	6.4	STD	0.5	21.2	7.2	6.4	5.2	750	4500	B, E, M	Gen4
40-42269-*	8.5	STD	0.5	21.85	5.9	8.5	7.05	500	2500	A, B, E, M	Gen3
562110-001H	8.5	STD	0.5	21.85	5.9	8.5	7.05	500	2500	M	Gen3

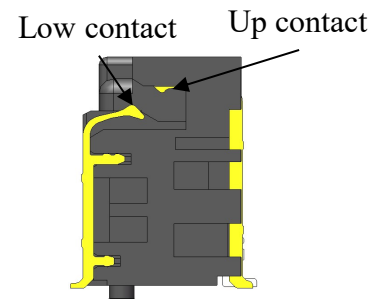
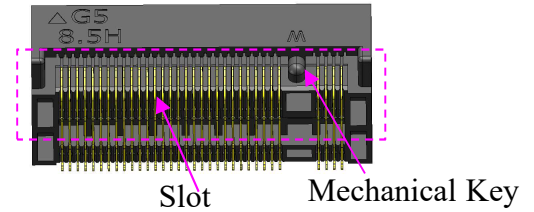


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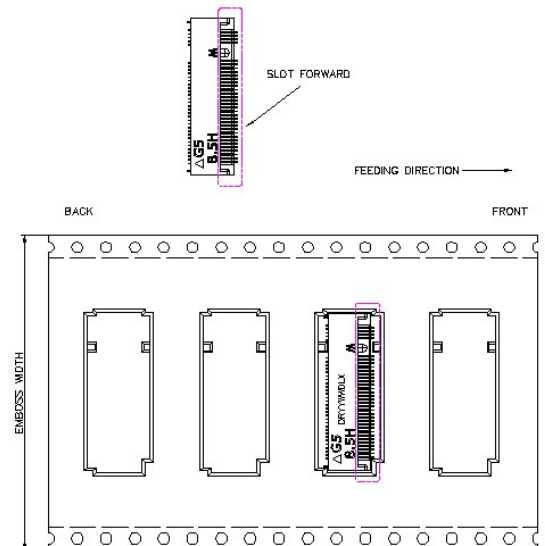
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PART NUMBERS & STRUCTURE

M.2 Part Number :

P/N	Onboard Height	STD / RVS	Pitch	Length	Width	Height	Center Height	Q'ty/Reel	Q'ty/Box	Available Key	Speed
5621D3-013H-XB0X	1.65	STD	0.5	23.8	8.35	1.65	0.3	1500	7500	M	Gen5
5621D3-013H-XB0X	4.2	STD	0.5	21.9	7.2	4.2	2.85	1100	5500	M	Gen5
5621D3-014H-XB0X	6.7	STD	0.5	21.9	7.2	6.7	5.4	700	3500	M	Gen5
5621D3-015H-XB0X	8.5	STD	0.5	21.85	5.9	8.5	7.05	500	2500	M	Gen5