

Amphenol

COMMUNICATIONS SOLUTIONS

CMIO- SD/SIM socket solution

20220812

- SIM Card
- Memory Card

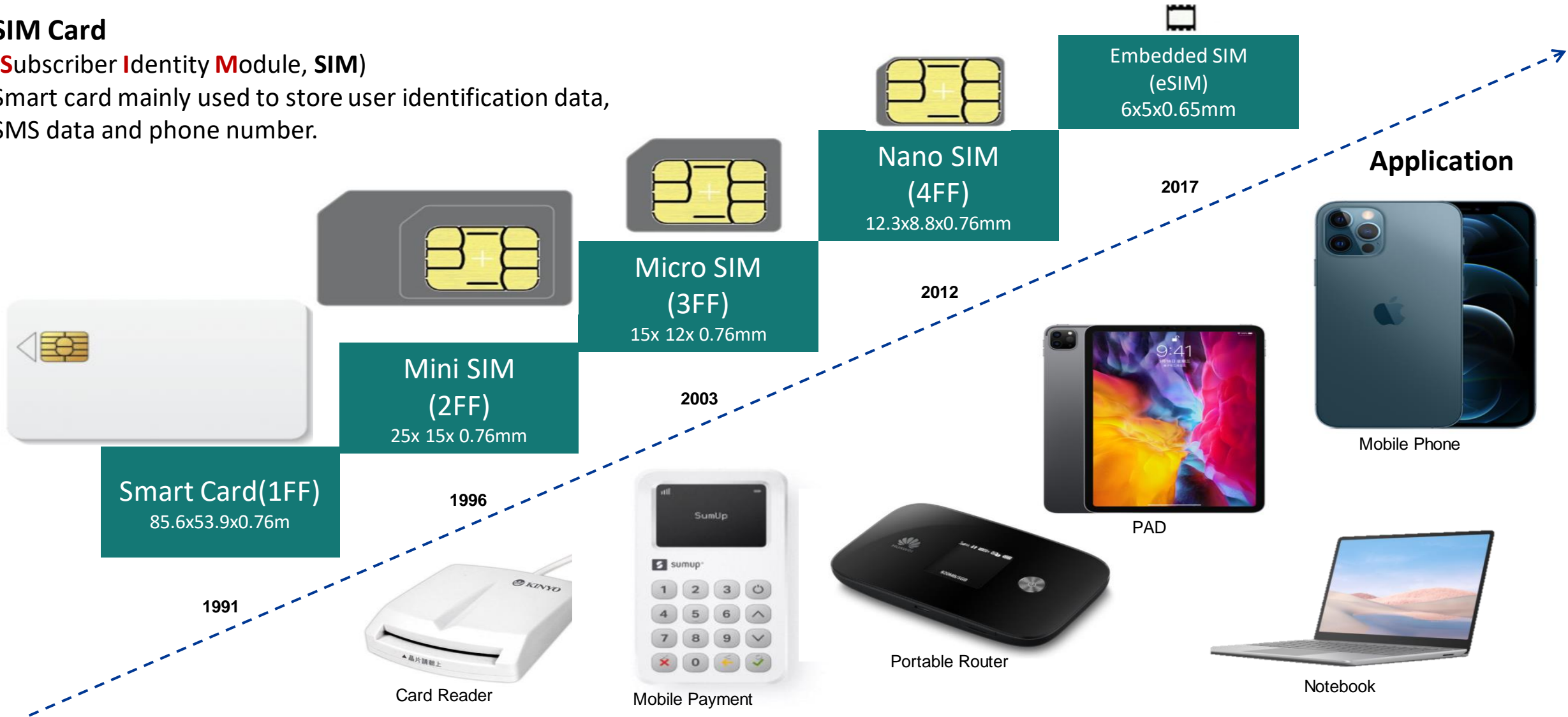
- SIM Card
- Memory Card

SIM Card Basic Info

SIM Card

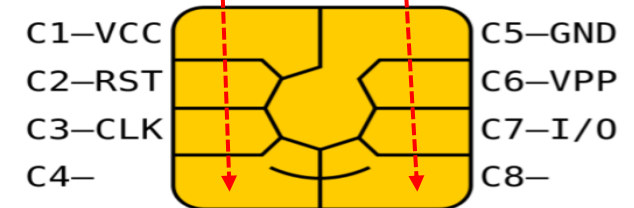
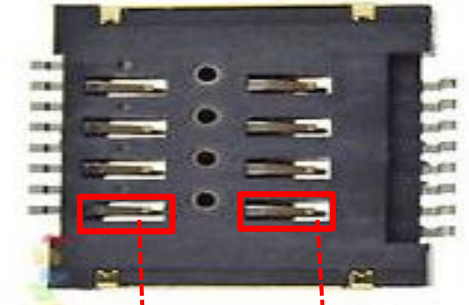
(Subscriber Identity Module, SIM)

Smart card mainly used to store user identification data, SMS data and phone number.



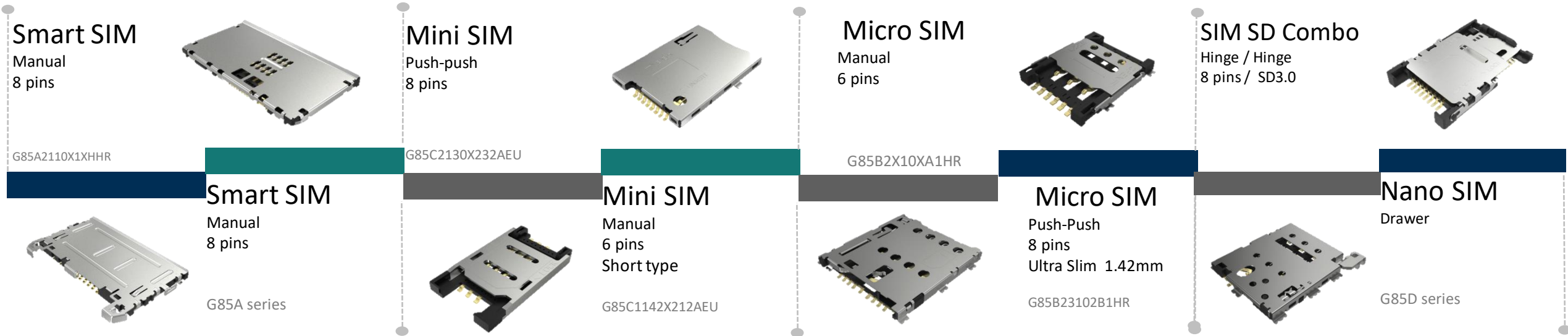
SIM Card Basic Info

Pin	Name	Description
C1	VCC	+5 VDC power supply input (optional use by the card)
C2	RESET	Reset signal, used to reset the card's communications. Either used itself (reset signal supplied from the interface device) or in combination with an internal reset control circuit (optional use by the card). If internal reset is implemented, the voltage supply on Vcc is mandatory
C3	CLOCK	Provides the card with a clock signal, from which data communication timing is derived
C4	RESERVED	AUX1, optionally used for USB interfaces and other uses.
C5	GND	Ground (reference voltage)
C6	Vpp	Programming voltage input (optional). This contact may be used to supply the voltage required to program or to erase the internal non-volatile memory. .
C7	I/O	Input or Output for serial data (half-duplex) to the integrated circuit inside the card.
C8	RESERVED	AUX2, optionally used for USB interfaces and other uses.



C4/C8(Reserved)

CMIO SIM Card Socket Overview



Product Feature

- Contact Finish: GF/10u"/15u"/30u"
- Mating cycles: 3k/5k/10k cycles
- Push-push/Non-push/Hinge
- 6pins/ 8pins solution
- Combo/ Dual row solution
- Support customize solution

Product Benefit

- Better performance for durability/ MFG/Salt spray
- High reliability
- Various type for customer to design
- Flexible design for customer
- Special application
- Prompt support for customer requirement(2D/3D/SI,etc)

CMIO SIM Card Socket PN Overview

Smart SIM

PN	Type	POS	Gold plating	POST	Detect function	Height(mm)	Remark
G85A2110011HHR	Push pull	8	Gold flash	Y	Y	2.9	

Micro SIM

PN	Type	POS	Gold plating	POST	Detect function	Height(mm)	Remark
G85B21610142HHR	Push Push	8	Gold flash	Y	Y	1.9	
G85B21611142HHR	Push Push	8	15U" GOLD	Y	Y	1.9	
G85B21612142HHR	Push Push	8	30U" GOLD	Y	Y	1.9	
G85B221020B1HR	Push Push	8	15U" GOLD	N	Y	1.42	
G85B231020B1HR	Push Push	8	30U" GOLD	N	Y	1.42	
G85B221021B1HR	Push Push	8	15U" GOLD	N	Y	1.42	
G85B231021B1HR	Push Push	8	30U" GOLD	N	Y	1.42	
1010030682	Push Push	6	15U" GOLD	N	Y	1.95	

Mini SIM

PN	Type	POS	Gold plating	POST	Detect function	Height(mm)	Remark
G85C11100152HHR	Push Push	6	Gold flash	Y	Y	2.3	
G85C11101152HHR	Push Push	6	15U" GOLD	Y	Y	2.3	
G85C11102152HHR	Push Push	6	30U" GOLD	Y	Y	2.3	
G85C11420212A1EU	Push pull	6	Gold flash	N	N	1.55	
G85C11423212A1EU	Push pull	6	30U" GOLD	N	N	1.55	

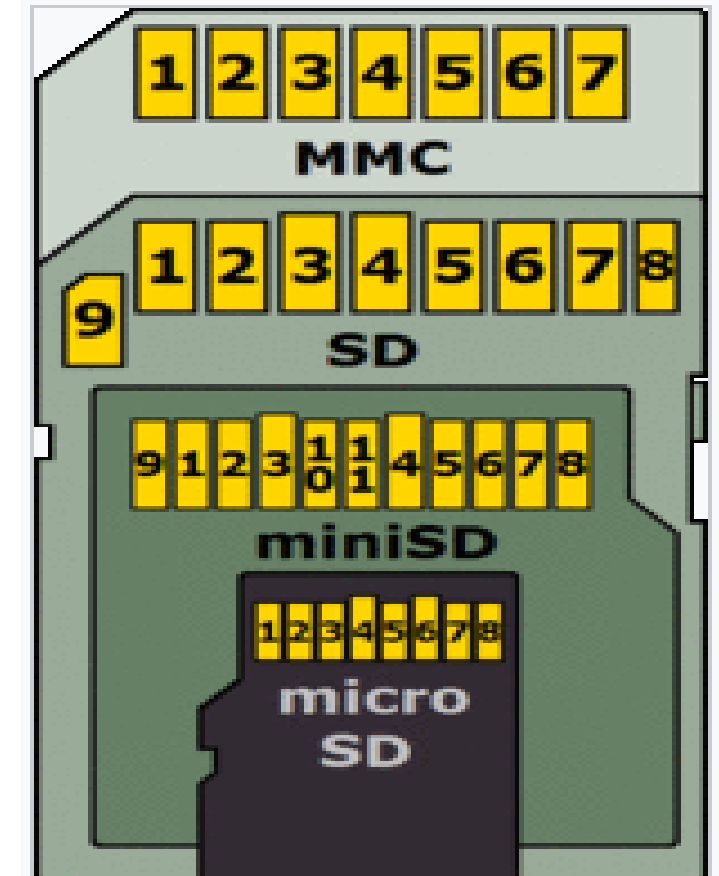
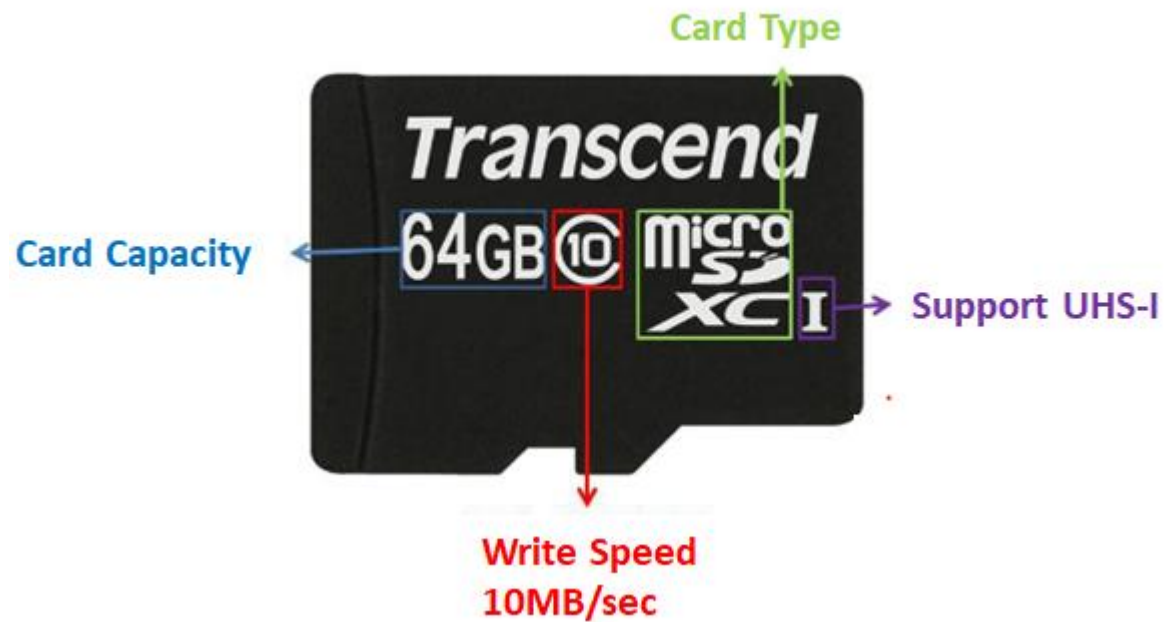
CMIO SIM Card Socket PN Overview

Nano SIM							
PN	Type	POS	Gold plating	POST	Detect function	Height(mm)	Remark
G85D1140022SP1HR	Push pull	6	Gold flash	N	Y	1.35	W/ lever
G85D1140322SP1HR	Push pull	6	15U" GOLD	N	Y	1.35	W/ lever
G85D1140422SP1HR	Push pull	6	30U" GOLD	N	Y	1.35	W/ lever
G85DT17001P1EU	Tray	NA	NA	NA	NA	NA	Black
G85DT170010P2EU	Tray	NA	NA	NA	NA	NA	Black
G85D1160022HHR	Hinge	6	Gold flash	N	Y	1.4	
G85D1160122HHR	Hinge	6	15U" GOLD	N	Y	1.4	
G85D1160222HHR	Hinge	6	30U" GOLD	N	Y	1.4	
G85D1171012HHR	Push Push	6	Gold flash	Y	Y	1.37	
G85D1171112HHR	Push Push	6	5U" GOLD	Y	Y	1.37	
G85D1171212HHR	Push Push	6	10U" GOLD	Y	Y	1.37	
G85D1171312HHR	Push Push	6	15U" GOLD	Y	Y	1.37	
G85D1171412HHR	Push Push	6	30U" GOLD	Y	Y	1.37	


- SIM Card
- **Memory Card**


Memory Card Basic Info


Secure Digital, officially abbreviated as **SD**, is a proprietary non-volatile memory card format developed by the SD Card Association (SDA) for use in portable devices.




Memory Card Basic Info

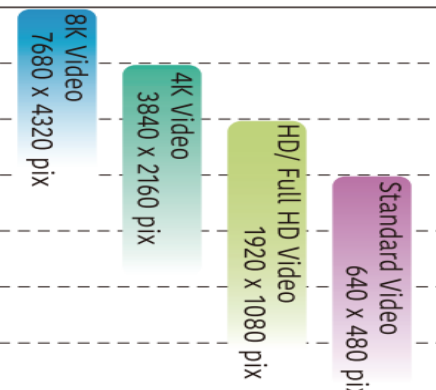
 SD standard - Up to 2GB SD memory card using FAT 12 and 16 file systems





 SDHC standard - over 2GB-32GB SDHC memory card using FAT32 file system

 SDXC standard - over 32GB-2TB SDXC memory card using exFAT file system

 SDUC standard - over 2TB-128TB SDUC memory card using exFAT file system

SD Speed Class And Video Format

Minimum Sequential Write Speed	Speed Class			Corresponding Video Format The necessary speed varies by each recording/playback device condition. in the same format.
	Speed Class	UHS Speed Class	Video Speed Class	
90MB/sec			V90	
60MB/sec			V60	
30MB/sec		3	V30	
10MB/sec	10	1	V10	
6MB/sec	6		V6	
4MB/sec	4			
2MB/sec	2			

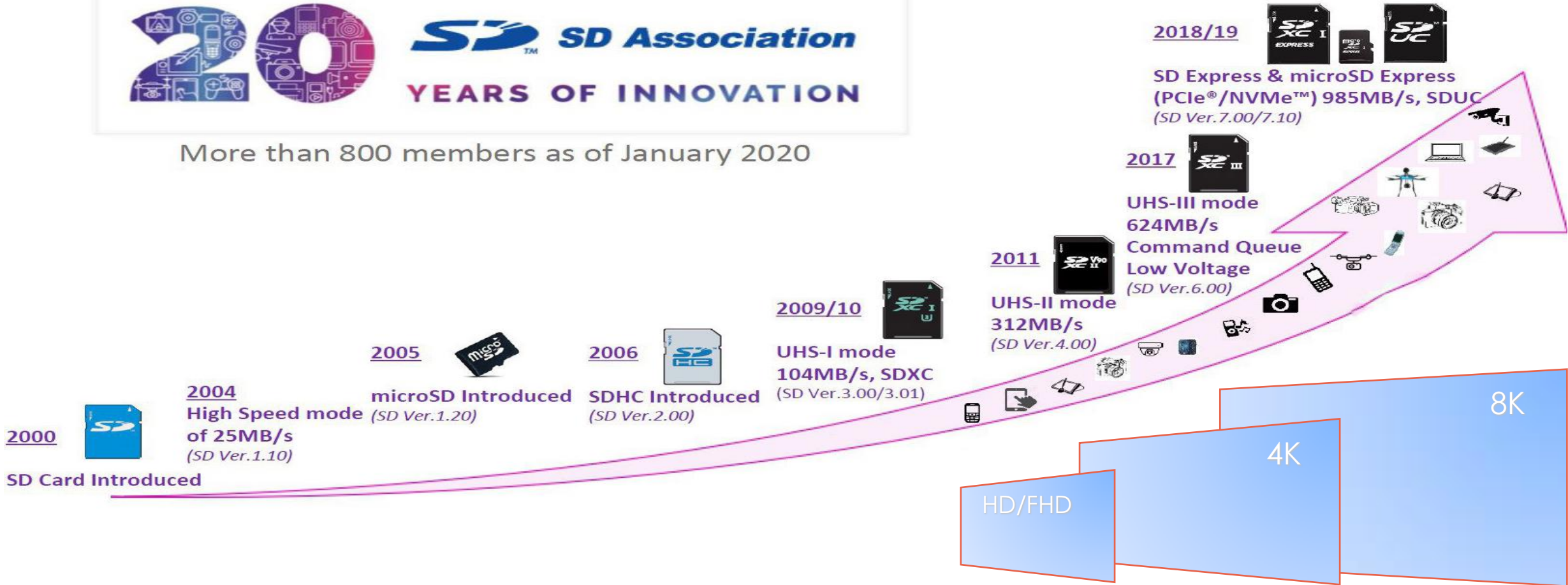
Bus Interface	Card Type	Bus Mark	Bus Speed	Spec Version
Default Speed	SD, SDHC, SDXC and SDUC	---	12.5MB/s	1.01
High Speed	SD, SDHC, SDXC and SDUC	---	25MB/s	1.10
UHS- I	SDHC, SDXC and SDUC		50MB/s (SDR50, DDR50) 104MB/s (SDR104)	3.01
UHS- II	SDHC, SDXC and SDUC		156MB/s Full Duplex 312MB/s Half Duplex	4.00
UHS- III	SDHC, SDXC and SDUC		312MB/s Full Duplex 624MB/s Full Duplex	6.00
SD Express	SDHC, SDXC and SDUC		985MB/s PCIe Gen.3 × 1Lane	7.00
			1970MB/s PCIe Gen.4 × 1 Lane PCIe Gen.3 × 2 Lane	8.00
			3940MB/s PCIe Gen.4 × 2 Lane	

SD Card Connectors Roadmap



SD Association
YEARS OF INNOVATION

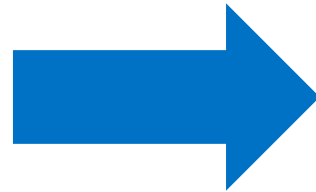
More than 800 members as of January 2020



SD Card Roadmap

	SD Memory Card				SD Express Memory Card			
Pin Layout								
PCIe Bus Interface					985MB/sec PCIe Gen.3x1 <small>*microSD Express supports only PCIe Gen.3</small>		New 1970MB/sec PCIe Gen.4x1 3940MB/sec PCIe Gen.4x2	
SD Bus Interface	25MB/sec High Speed		104MB/sec UHS-I 312MB/sec UHS-II 624MB/sec UHS-III		High Speed UHS-I		High Speed UHS-I	
Capacity (file system)	Ultra Capacity Up to 128TB (exFAT) SD UC, SD UC I, SD UC II, SD UC III				SD UC EXPRESS I			
	Extended Capacity Up to 2TB (exFAT) SD XC, SD XC I, SD XC II, SD XC III				SD XC EXPRESS I			
	High Capacity Up to 32GB (FAT32) SD HC, SD HC I, SD HC II, SD HC III				SD HC EXPRESS I			

Memory Card Connector Application



Action Camera



Digital Camera



Dash Cam



Notebook



Single Board Computer



Game Console

Memory Card Socket Overview

OVERVIEW

SD

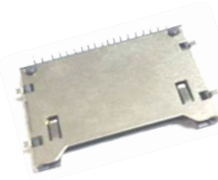
Push-push
UHS-I
104 MB/s



GSD09002SEU

SD 4.0

Push-push
UHS-II
312 MB/s



GSD09024X4HR

Micro SD

Push-push
UHS-I
104 mb/s



GTFP08431BEU

Micro SD 7.1

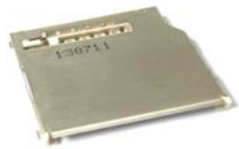
Non-push
SD express
985 MB/s
PCIe Gen3



101019966912A

SD

Manual
UHS-I
104 MB/s



GSD090012SEU

Micro SD

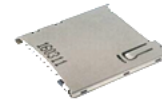
Hinge
UHS-I
104 MB/s



GTFH08131YHR

Micro SD 4.0

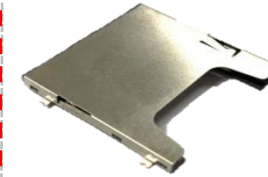
Push-push
UHS-II
312 MB/s



GTF4P17131HR

SD 7.0

Push-push
SD express
985 MB/s
PCIe Gen3



GSD2100107BHR

Product Feature(SD Express)

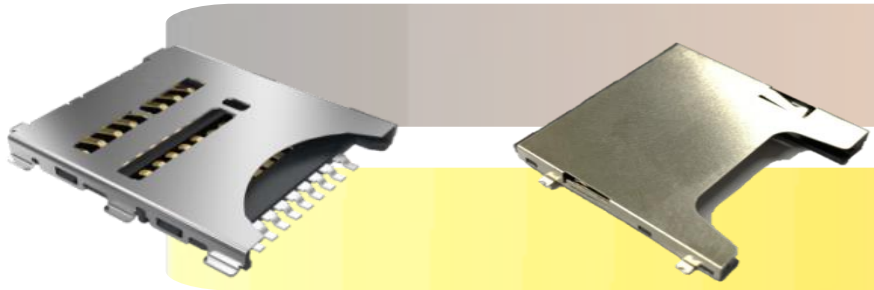
- PCIe Gen3 interface
- NVMe application protocol
- 5,000 mating cycles
- Detect pin function
- Backward compatible to legacy card
- RoHS/ Halogen-free

Product Benefit(SD Express)

- Transfer rate: 985MB/s
- Flexible design, better transfer rate
- High durability
- Better protect/ read function when the card insert
- Keep same layout, and save cost
- Meets health& environment requirement

CMIO OTS SD Express Difference & Benefit

Standard
Off the Shelf



Micro SD express

P/N: 101019966912A(push- pull)

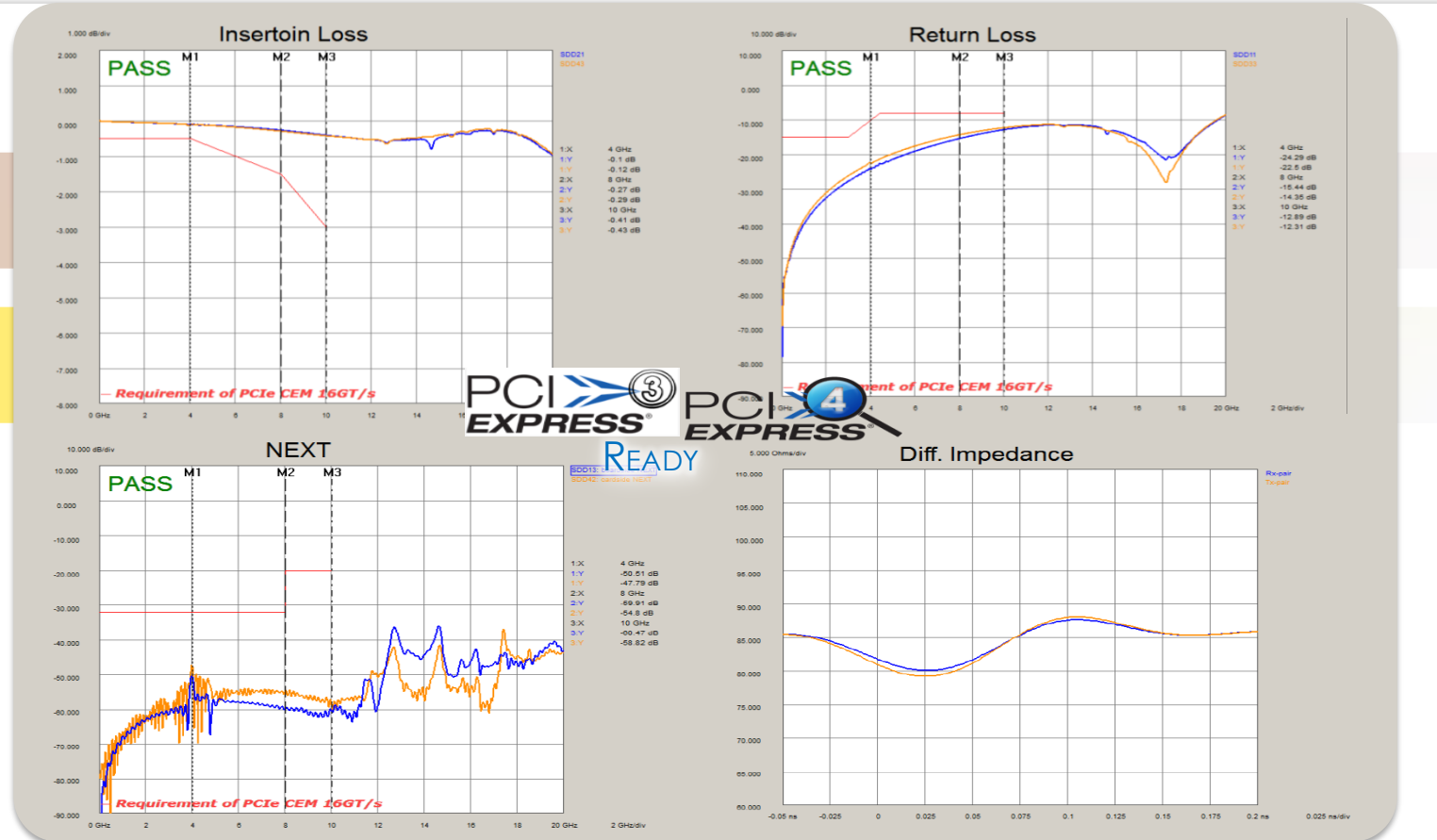
P/N: 101022036912A(push-pull, Gen4x1lane)

P/N: 101020156912A(push push, customize)

SD express(Gen3x 1 lane)

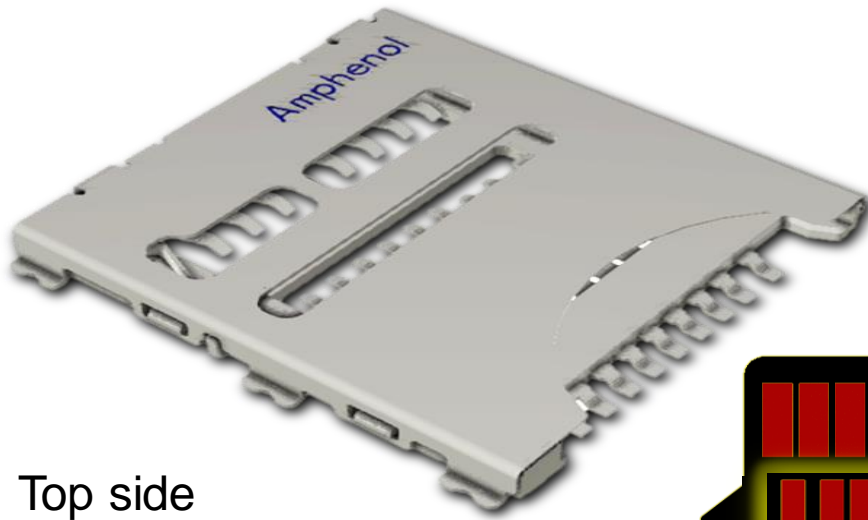
P/N:GSD2100407THR(push-pull)

P/N:GSD2100107BHR(push-push)

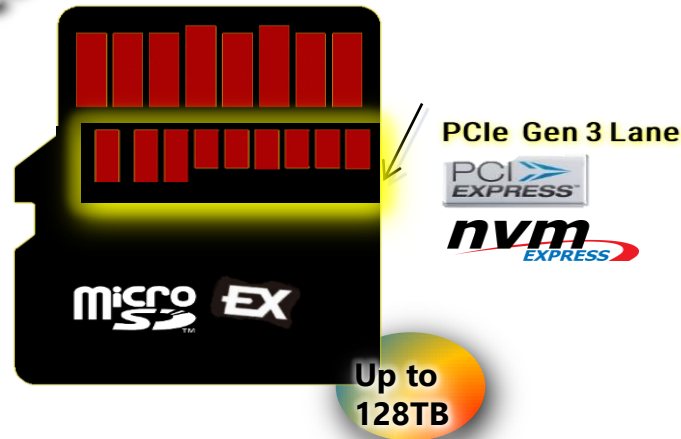


1. Support to PCIe- Gen3 x 1 lane/ Gen4 x1 lane
2. CAE(overcome force) simulation.
3. Customize solution for different height/ short body/ special application.
4. Push push/ push pull solution
5. Backward compatible to legacy SD card

Micro SD Express



Top side



PN: 101019966912A

- Contact Finish: 30u” gold
- 5,000 mating cycles
- With Detect Function
- Rate Up To PCIe Gen3
- Non-Push Type
- Backward Compatible With Legacy Micro SD card

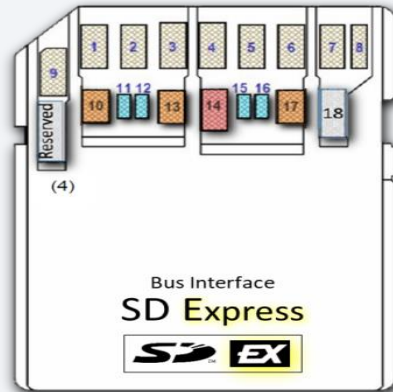


PN: GSD2100107BHR

- Contact Finish: Gold Flash
- 5,000 mating cycles
- With Detect Function
- Rate Up To PCIe Gen3
- Push-Push Type
- Backward Compatible With Legacy SD Card



Modified from
UHS II



CMIO Memory Card Socket PN Overview

SD Card Socket							
PN	Type	POS	Gold plating	POST	Detect function	Height(mm)	Remark
GSD090010SEU	Push Pull	9	Gold flash	Y	Y	2.95	
GSD090011SEU	Push Pull	9	5U" GOLD	Y	Y	2.95	
GSD090012SEU	Push Pull	9	10U" GOLD	Y	Y	2.95	
GSD090013SEU	Push Pull	9	15U" GOLD	Y	Y	2.95	
GSD09002DEU	Push Push	9	15U" GOLD	Y	Y	2.7	
GSD09002SHR	Push Push	9	15U" GOLD	Y	Y	2.7	
GSD09002SEU	Push Push	9	15U" GOLD	Y	Y	2.7	
GSD09002SDEU	Push Push	9	15U" GOLD	Y	Y	2.7	
GSD2100107BHR	Push Push	19	Gold flash	Y	Y	3.05	SD4.0/ 7.0
GSD2100407THR	Push Pull	19	Gold flash	Y	Y	3.00	SD4.0/ 7.0

CMIO Memory Card Socket PN Overview

Micro SD Card Socket							
PN	Type	POS	Gold plating	POST	Detect function	Height(mm)	Remark
GTFP08511Y6HR	Push Push	8	5U" GOLD	Y	Y	1.75	
GTFP08521Y6HR	Push Push	8	10U" GOLD	Y	Y	1.75	
GTFP08531Y6HR	Push Push	8	15U" GOLD	Y	Y	1.75	
GTF4P17111HR	Push Push	17	5U" GOLD	N	Y	1.65	SD4.0
GTF4P17121HR	Push Push	17	10U" GOLD	N	Y	1.65	SD4.0
GTF4P17131HR	Push Push	17	15U" GOLD	N	Y	1.65	SD4.0
GTFH08101YHR	Hinge	8	Gold flash	N	N	1.83	
GTFH08121YHR	Hinge	8	10U" GOLD	N	N	1.83	
GTFH08131YHR	Hinge	8	15U" GOLD	N	N	1.83	
GTFH08141YHR	Hinge	8	30U" GOLD	N	N	1.83	
GTFN084XXB1HR	Push Pull	8	10U"/15U" /30U" Gold	N	Y	1.85	w, w/o Mylar
GTFP08321THR	Push Push	8	10U" GOLD	N	Y	1.85	
GTFP084XXB1HR	Push Push	8	10U"/15U" /30U" Gold	N	Y	1.85	w, w/o Mylar
10101996912A	Push Pull	17	30U" GOLD	N	Y	1.55	SD7.1
1140084168	Push Pull	8	15U" GOLD	N	Y	1.55	

UFS Card Socket							
PN	Type	POS	Gold plating	POST	Detect function	Height(mm)	Remark
1010170469#2A	Push Pull	12, 8	30U" GOLD	N	N	1.55	UFS/Micro SD combo
10101704J6#2A	Push Pull	12, 8	Pd-Ni12u+AU2u	N	N	1.55	UFS/Micro SD combo
10101870J612A	Push Push	12, 8	Pd-Ni12u+AU2u	N	Y	1.55	UFS/Micro SD combo

Thank you

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