

# MIFARE Contactless IC portfolio

	MIFARE Ultralight			MIFARE Classic	MIFARE Plus		MIFARE DESFire	
	MIFARE Ultralight EV1	MIFARE Ultralight C	MIFARE Classic EV1	MIFARE Plus (S/X)	MIFARE Plus SE	MIFARE DESFire EV1	MIFARE DESFire EV2	
RF Interface	ISO/IEC 14443-2, type A							
Protocol	ISO/IEC 14443-3			ISO/IEC 14443- 3&4		ISO/IEC 14443-4		
UID – unique identifier	7-byte UID		7-byte UID, RID, 4-byte NUID			7-byte UID		
Communication speed	106 kbps			106-848 kbps				
Memory size [Bytes]	48	128	144	1K 4K	2K 4K	1K	2K 4K 8K	
Memory Model	Compact, 4-byte page		Compact, Sectors & 16-byte block			Flexible file system		
Crypto	No	TDES	Crypto-1	Crypto-1, AES		TDES, AES		
Key Length	N/A	112-bit	48-bit	48-bit, 128-bit		up to 168-bit, 128-bit		
Authentication	Password		3-pass mutual					
Communication, Security	No		Encrypted	Plain, Encrypted and/or CMACed				
MIsmartApp				N/A		No	Yes	
Transaction MAC	N/A			No		No	Yes	
Multi Key Sets				N/A		No	Yes	
Proximity Check	No		Yes			No	Yes	
Virtual Card Select	No		Yes			No	Yes	
CC Certification	No			EAL4+	Based on CC certified MIFARE Plus family	EAL4+	EAL5+	
ISO 7816-4 APDU	No					Yes		

