

# 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	

