

# 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		

