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# Consolidated Technical Specification Sheet

# CodeWav NFC Sticker Tag Original Edition Technical Specifications

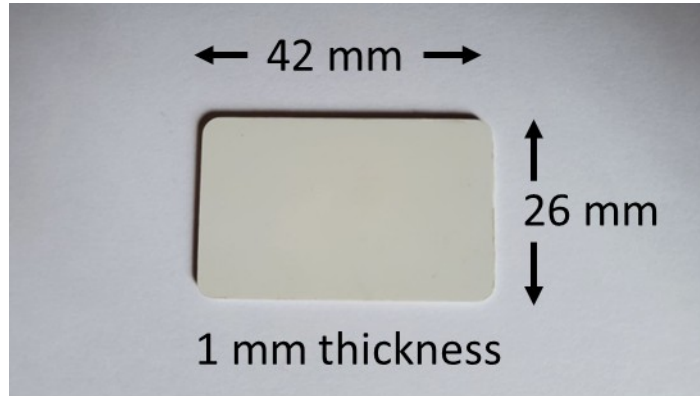
<b><u>Chip Attributes</u></b>		
Chip Manufacturer	Infineon Technologies AG	
Chip CPU / Model	16 bit / Infineon SLC32	<a href="https://www.infineon.com/cms/en/product/security-smart-card-solutions/security-controllers/slc-32p/">https://www.infineon.com/cms/en/product/security-smart-card-solutions/security-controllers/slc-32p/</a>
Chip Certification	CC EAL 6+	
<b><u>JavaCard OS Attributes</u></b>		
JavaCard JCOS	Feitian JCOS  (Note: JCOS is certified for Infineon SLE77CLFX2400PM micro-controller)	<a href="https://www.commoncriteriaportal.org/files/epfiles/20180917%20Sertit-116%20CR%20Feitian%20v10.pdf">https://www.commoncriteriaportal.org/files/epfiles/20180917%20Sertit-116%20CR%20Feitian%20v10.pdf</a>
JavaCard JCOS Manufacturer	Feitian Technologies Co., Ltd.	
JavaCard JCOS Certification	FIPS 140-2 L3, CC EAL 5+	
JavaCard Supported Version	3.0.4	
<b><u>GlobalPlatform Attributes</u></b>		
GlobalPlatform	Version 2.1.1	
<b><u>Chip Memory Attributes</u></b>		
User Flash Storage	138 KB	
User RAM Memory	4.5 KB	
<b><u>Module Communication Attributes</u></b>		
NFC	ISO-14443 Contactless Type A	
<b><u>JCRE Features</u></b>		
APDU Buffer Size	261 bytes	
Transaction Size	4 KB	
RMI	No	
Garbage Collection	Yes	

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Logical Channels	4	
Applet Deletion	Yes	
<b><u>Cryptography Algorithms</u></b>		
RSA	<p>Key Generation on chip with and without CRT supports 1024 to 2048 bits.</p> <p>Digital Signatures and RSA Encryption/Decryption supports 1024 to 2048 bits.</p>	
ECDSA/ECDH	<p>EC_FP Curve Support: 192, 256 &amp; 384 bits with persistent mode.</p> <p>EC_FM Curve Support: None.</p> <p>Key Generation on chip: Yes.</p> <p>Digital Signatures: ECDSA with SHA, SHA224, SHA256, SHA384, SHA512 support.</p> <p>ECDH:</p> <ul style="list-style-type: none"> <li>-</li> <li>ALG_EC_SVDP_DH/ALG_EC_SVDP_DH_KDF</li> <li>- ALG_EC_SVDP_DH_PLAIN</li> <li>- ALG_EC_SVDP_DH_PLAIN_XY</li> </ul>	
Hash	<p>MD5, SHA1, SHA224, SHA256, SHA384, SHA512, HMAC-SHA-1, HMAC-SHA-256, HMAC-SHA-384, HMAC-SHA-512</p>	
AES	<p>Key Generation on chip supports 128, 192, 256 bits with persistent, transient reset and deselect modes.</p> <p>AES Encryption / Decryption supports 128, 192, 256 bits key length.</p>	
DES	<p>Key Generation on chip supports DES, 2DES, 3DES key length with persistent, transient reset and deselect modes.</p>	

	DES Encryption / Decryption supports DES, 2DES, 3DES key length.	
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**Product Image**



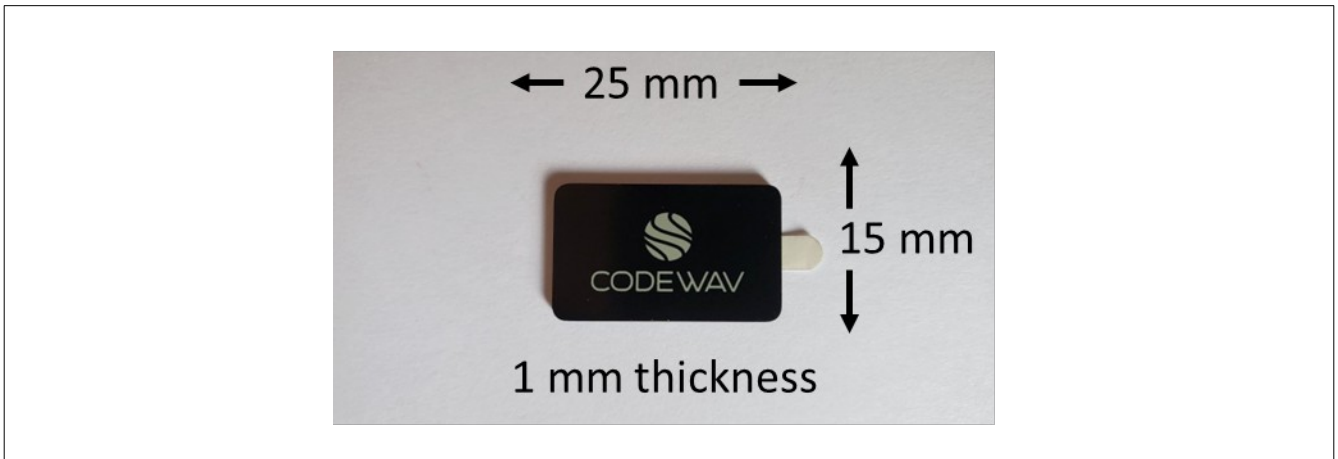
# CodeWav NFC Sticker Tag Micro Edition Technical Specifications

<b><u>Chip Attributes</u></b>		
Chip Manufacturer	Tongxin Microelectronics Co., Ltd.	
Chip CPU / Model	32 bit / THD-89	
Chip Certification	CC EAL 6+	<a href="https://www.commoncriteriaportal.org/files/epfiles/2018-36-INF-3198.pdf">https://www.commoncriteriaportal.org/files/epfiles/2018-36-INF-3198.pdf</a>
<b><u>JavaCard OS Attributes</u></b>		
JavaCard JCOS	Proprietary	
JavaCard JCOS Manufacturer	Tongxin Microelectronics Co., Ltd.	
JavaCard JCOS Certification	None	
JavaCard Supported Version	3.0.4	
<b><u>GlobalPlatform Attributes</u></b>		
GlobalPlatform	Version 2.2.1	
<b><u>Chip Memory Attributes</u></b>		
User Flash Storage	170 KB	
	2.5 KB	
<b><u>Module Communication Attributes</u></b>		
NFC	ISO-14443 Contactless Type A	
<b><u>JCRE Features</u></b>		
APDU Buffer Size	261 bytes	
Transaction Size	4 KB	
RMI	No	
Garbage Collection	Yes	
Logical Channels	4	
Applet Deletion	Yes	
<b><u>Cryptography Algorithms</u></b>		

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RSA	<p>Key Generation on chip with and without CRT supports 1024 to 2048 bits.</p> <p>Digital Signatures and RSA Encryption/Decryption supports 1024 to 2048 bits.</p>	<p>RSA 3072 and 4096 bits (with CRT) key generation on chip, digital signing and RSA encryption can be enabled upon bulk order request.</p>
ECDSA/ECDH	<p>EC_FP Curve Support: 160, 192, 224, 256, 384 &amp; 521 bits with persistent mode.</p> <p>EC_FM Curve Support: None.</p> <p>Key Generation on chip: Yes.</p> <p>Digital Signatures: ECDSA with SHA, SHA224, SHA256, SHA384, SHA512 support.</p> <p>ECDH:</p> <ul style="list-style-type: none"> <li>-</li> <li>ALG_EC_SVDP_DH/ALG_EC_SVDP_DH_KDF</li> <li>- ALG_EC_SVDP_DH_PLAIN</li> <li>- ALG_EC_PACE_GM</li> <li>- ALG_EC_SVDP_DH_PLAIN_XY</li> <li>- ALG_DH_PLAIN</li> </ul>	
Hash	<p>MF5, SHA1, SHA224, SHA256, SHA384, SHA512</p>	
AES	<p>Key Generation on chip supports 128, 192, 256 bits with persistent, transient reset and deselect modes.</p> <p>AES Encryption / Decryption supports 128, 192, 256 bits key length.</p>	
DES	<p>Key Generation on chip supports DES, 2DES, 3DES key length with persistent, transient reset and deselect modes.</p> <p>DES Encryption / Decryption supports DES, 2DES, 3DES key length.</p>	
<b>Product Image</b>		

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# CodeWav-2 NFC Card Technical Specifications

<b><u>Chip Attributes</u></b>		
Chip Manufacturer	Tongxin Microelectronics Co., Ltd.	
Chip CPU / Model	32 bit / THD-89	
Chip Certification	CC EAL 6+	<a href="https://www.commoncriteriaportal.org/files/epfiles/2018-36-INF-3198.pdf">https://www.commoncriteriaportal.org/files/epfiles/2018-36-INF-3198.pdf</a>
<b><u>JavaCard OS Attributes</u></b>		
JavaCard JCOS	Proprietary	
JavaCard JCOS Manufacturer	Tongxin Microelectronics Co., Ltd.	
JavaCard JCOS Certification	None	
JavaCard Supported Version	3.0.4	
<b><u>GlobalPlatform Attributes</u></b>		
GlobalPlatform	Version 2.2.1	
<b><u>Chip Memory Attributes</u></b>		
User Flash Storage	170 KB	
	2.5 KB	
<b><u>Module Communication Attributes</u></b>		
NFC	ISO-14443 Contactless Type A	
<b><u>JCRE Features</u></b>		
APDU Buffer Size	261 bytes	
Transaction Size	4 KB	
RMI	No	
Garbage Collection	Yes	
Logical Channels	4	
Applet Deletion	Yes	
<b><u>Cryptography Algorithms</u></b>		



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RSA	<p>Key Generation on chip with and without CRT supports 1024 to 2048 bits.</p> <p>Digital Signatures and RSA Encryption/Decryption supports 1024 to 2048 bits.</p>	<p>RSA 3072 and 4096 bits (with CRT) key generation on chip, digital signing and RSA encryption can be enabled upon bulk order request.</p>
ECDSA/ECDH	<p>EC_FP Curve Support: 160, 192, 224, 256, 384 &amp; 521 bits with persistent mode.</p> <p>EC_FM Curve Support: None.</p> <p>Key Generation on chip: Yes.</p> <p>Digital Signatures: ECDSA with SHA, SHA224, SHA256, SHA384, SHA512 support.</p> <p>ECDH:</p> <ul style="list-style-type: none"> <li>-</li> <li>ALG_EC_SVDP_DH/ALG_EC_SVDP_DH_KDF</li> <li>- ALG_EC_SVDP_DH_PLAIN</li> <li>- ALG_EC_PACE_GM</li> <li>- ALG_EC_SVDP_DH_PLAIN_XY</li> <li>- ALG_DH_PLAIN</li> </ul>	
Hash	<p>MF5, SHA1, SHA224, SHA256, SHA384, SHA512</p>	
AES	<p>Key Generation on chip supports 128, 192, 256 bits with persistent, transient reset and deselect modes.</p> <p>AES Encryption / Decryption supports 128, 192, 256 bits key length.</p>	
DES	<p>Key Generation on chip supports DES, 2DES, 3DES key length with persistent, transient reset and deselect modes.</p> <p>DES Encryption / Decryption supports DES, 2DES, 3DES key length.</p>	
ADDITIONAL FEATURES	<p>ThothTrust THETAKey T104 Open API:</p> <ul style="list-style-type: none"> <li>• Access to E-Wallet functions</li> </ul>	<p>E-Wallet has a global Payment, Balance and</p>

- Access to E-Ink display function

Loaded Funds slot.

**Product Image**

