Ascon Cipher Suite Test Vectors

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This note includes test vectors for the proposed Ascon Cipher Suite (P802.1AEef) for MACsec. The suggested test vectors are based on those subsequently included in P802.1AEef/D0.1, and this note is referenced by my comments on the first Task Group ballot of that document. There are minor differences of presentation, two extra test cases, and suggestions for P802.1AEef changes as per my ballot comments.

This note is not intended to be the "last word" on this subject. At a minimum the test vector results to be included in the final 802.1AEef standard should be checked by at least two contributors, working independently from the draft standard.

1. Cipher Suit specification

These test vectors are based on my understanding of the P802.1AEef specification of the Ascon-XPN-128 MACsec Cipher Suite. The aim of the test vectors is to check that independent implementations have the same interpretation of P802.1AEef's use of Ascon-AEAD-128[1] These test vectors are not intended to replace the use of Known Answers Tests to verify correct Ascon-AEAD-128 operation.

2. MACsec Cipher Suite specification

This revision of this note is based on P802.1AEef/D0.1, abbreviated to ef in the following.

3. Test vector generation

The test vectors have been generated using the python implementation `ascon.py` (modified data Nov 18, 2025) included in pyascon-master.zip (download Dec 2026, 2025).[2]

The test vectors are included in Excel spreadsheets, read from (to use ascon.py) and written to (with the results), using openpyxl. The aim was to avoid potentially error prone copying and pasting of both input and output data. I have made quick visual check with output also written to a Python console, with the aim of avoiding curiosities such as hiding of text in under-sized excel cells. Anyone depending on the results is advised to do their own checking.

4. SCI specification

ef:14.92 'Endian issues' describes SCI components as sequences of octets, and that is how they are shown in ef:Table 14-2. Since there are both big-endian and little-endian mappings of these octets to a 64-bit integer, ef:Table J-1 should also show the SCI as an octet sequence, rather than as an integer. This would then match the way the SCI is shown in subsequent tables, and the octet ordering in MKPDUs.

5. Key (SAK) endianess

MKA uses AES Key Wrap as specified by IETF RFC 3394 to distribute SAKs. (9.8.2 of 802.1X-2020). RFC 3394 specifies each wrapped key as a succession of 64-bit blocks, with the bits in each ordered by significance, and identifies the most and least-significant bits of each block. In the absence of more specific detail [3] I assume that the blocks are encoded in the transmitted Key Wrap in 'network byte order' (most significant first). The `ascon_encrypt()` function in `ascon.py`, takes its `key` and `nonce` as well as its `associateddata` and `plaintext` as `BytesLike` parameters (octet sequences for the purposes of this note). Accordingly the test vector generation uses the little-endian octet representation of the 128-bit key (and nonce) integers.

6. Extra test cases

The test cases in this note are as per ef:Table J-1 through Table J-26 with the addition of Tables J-27

[1] As specified in NIST SP 800-232.

[2] See https://github.com/meichlseder/pyascon for source and additional information.

[3] More specific detail in terms of a document reference would be welcome.

and J-28 to cover the case where the MAC Source Address conveys the SCI [9.5 b) of 802.1AE-2018].

7. Presentation differences

All the test vector case Tables in this note include the SCI field, leaving it blank where the optional SCI field is not present in the SecTAG. This is convenient for test case generation, and means that the case presented is clear without the need to read text outside the Table. I suggest the same change be made in the next draft of P802.1AEef.

The title of Table J-4 has been shortened, by the omission of “protected” as compared to ef:Table J-4, making it consistent with the other tables showing “integrity and confidentiality” cases. The same change should be made to P802.1AEef.

MACsec Ascon-XPN-128 Cipher Suite test vectors

Test case parameters

Notes	SecY parameters	Value applicable to protected frames
1	Key	AD7A 2BD0 3EAC 835A 6F62 0FDC B506 B345
1	PN	0000 0025 76D4 57ED
2	SCI	68 F2 E7 76 96 CE 00 01
1,3	Nonce prior to salt	0100 CE96 76E7 F268 0000 0025 76D4 57ED
1,4	Key Number (KN)	0001 2853
1,4	Key Server MI	E630 E81A 48DE 85B4 6A21 C66F
1,5	Salt	6B21 C66F E630 E81A 608D 85B4 6A21 C66F
1,6	Nonce	6A21 08F9 90D7 1A72 608D 8591 1CF5 9182

1 Integer, hexadecimal, most significant digits to the left, leading zero padding to notional size, spaces added to break into 16-bit blocks for readability.
2 Octet transmission order, most significant digit (nibble) of each octet to the left: in this test case a MAC Address with a Port Identifier of 0001.
3 Calculated from the PN and SCI.
4 The left to right order of hexadecimal pairs corresponds to the 'network byte order' (big endian) encoding of the parameter in 802.1X MKA PDUs.
5 Calculated from the KN and Key Server MI.
6 Calculated from the 'Nonce prior to Salt' and the Salt.

MACsec Ascon-XPN-128 Cipher Suite test vectors

Table J-2 Unprotected frame (27-octet example)

Field	Value
MAC DA	01 80 C2 00 00 0E
MAC SA	7A 0D 46 DF 99 8D
MSDU (User Data)	88 CC 01 07 04 7A 0D 46 DF 99 8D 02 02 07 31

Octets in transmission order, left to right, top to bottom, with each octet in hexadecimal, most significant digit to the left.

Table J-3 Integrity protected, SCI omitted (27-octet example)

	Field	Value
	MAC DA	01 80 C2 00 00 0E
	MAC SA	7A 0D 46 DF 99 8D
SecTAG	MACsec EtherType	88 E5
	TCI and AN	01
	SL	0F
	PN (ls 32 bits)	76 D4 57 ED
	SCI	
	MSDU (Secure Data)	88 CC 01 07 04 7A 0D 46 DF 99 8D 02 02 07 31
	ICV (Tag)	2D D2 40 EA F3 00 3E E2 19 24 25 4F AE 01 5E 29

Table J-4 Integrity and confidentiality, SCI omitted (27-octet example)

	Field	Value
	MAC DA	01 80 C2 00 00 0E
	MAC SA	7A 0D 46 DF 99 8D
SecTAG	MACsec EtherType	88 E5
	TCI and AN	0D
	SL	0F
	PN (ls 32 bits)	76 D4 57 ED
	SCI	
	MSDU (Secure Data)	0A 94 8D 4A B5 0A F8 12 FB 4E D9 6B 10 E7 C9
	ICV (Tag)	25 18 AD 5D E4 F4 41 0A A0 90 12 5C CF 5A 34 9B

MACsec Ascon-XPN-128 Cipher Suite test vectors

Table J-2 Unprotected frame (27-octet example)

Field	Value
MAC DA	01 80 C2 00 00 0E
MAC SA	7A 0D 46 DF 99 8D
MSDU (User Data)	88 CC 01 07 04 7A 0D 46 DF 99 8D 02 02 07 31

Octets in transmission order, left to right, top to bottom, with each octet in hexadecimal, most significant digit to the left.

Table J-5 Integrity protected, SCI included (27-octet example)

	Field	Value
	MAC DA	01 80 C2 00 00 0E
	MAC SA	7A 0D 46 DF 99 8D
SecTAG	MACsec EtherType	88 E5
	TCI and AN	21
	SL	0F
	PN (ls 32 bits)	76 D4 57 ED
	SCI	68 F2 E7 76 96 CE 00 01
	MSDU (Secure Data)	88 CC 01 07 04 7A 0D 46 DF 99 8D 02 02 07 31
	ICV (Tag)	85 4D 1A 62 BB 0F A1 81 43 E5 23 4C 76 DB BE EE

Table J-6 Integrity and confidentiality, SCI included (27-octet example)

	Field	Value
	MAC DA	01 80 C2 00 00 0E
	MAC SA	7A 0D 46 DF 99 8D
SecTAG	MACsec EtherType	88 E5
	TCI and AN	2D
	SL	0F
	PN (ls 32 bits)	76 D4 57 ED
	SCI	68 F2 E7 76 96 CE 00 01
	MSDU (Secure Data)	D9 95 4B 61 A0 E4 75 B0 ED 45 41 9F F7 59 2A
	ICV (Tag)	26 EC 87 31 38 2E EA 15 84 7B 3C A5 FC 33 BD E7

MACsec Ascon-XPN-128 Cipher Suite test vectors

Table J-7 Unprotected frame (28-octet example)

Field	Value
MAC DA	01 80 C2 00 00 0E
MAC SA	F0 76 1E 8D CD 3D
MSDU (User Data)	88 CC 01 07 04 7A 0D 46 DF 99 8D 02 03 07 30 31

Octets in transmission order, left to right, top to bottom, with each octet in hexadecimal, most significant digit to the left.

Table J-8 Integrity protected, SCI omitted (28-octet example)

	Field	Value
	MAC DA	01 80 C2 00 00 0E
	MAC SA	F0 76 1E 8D CD 3D
SecTAG	MACsec EtherType	88 E5
	TCI and AN	01
	SL	10
	PN (ls 32 bits)	76 D4 57 ED
	SCI	
	MSDU (Secure Data)	88 CC 01 07 04 7A 0D 46 DF 99 8D 02 03 07 30 31
	ICV (Tag)	0F 56 CB E5 D7 36 51 55 2C 4F 4E 16 B1 75 06 D9

Table J-9 Integrity and confidentiality, SCI omitted (28-octet example)

	Field	Value
	MAC DA	01 80 C2 00 00 0E
	MAC SA	F0 76 1E 8D CD 3D
SecTAG	MACsec EtherType	88 E5
	TCI and AN	0D
	SL	10
	PN (ls 32 bits)	76 D4 57 ED
	SCI	
	MSDU (Secure Data)	A2 FE 71 E0 ED 3F 3D 6D FF 3A 49 F6 32 34 6F 06
	ICV (Tag)	27 AD D5 81 7A BC 6A B4 91 D8 17 C6 F7 74 6F 60

MACsec Ascon-XPN-128 Cipher Suite test vectors

Table J-7 Unprotected frame (28-octet example)

Field	Value
MAC DA	01 80 C2 00 00 0E
MAC SA	F0 76 1E 8D CD 3D
MSDU (User Data)	88 CC 01 07 04 7A 0D 46 DF 99 8D 02 03 07 30 31

Octets in transmission order, left to right, top to bottom, with each octet in hexadecimal, most significant digit to the left.

Table J-10 Integrity protected, SCI included (28-octet example)

	Field	Value
	MAC DA	01 80 C2 00 00 0E
	MAC SA	F0 76 1E 8D CD 3D
SecTAG	MACsec EtherType	88 E5
	TCI and AN	21
	SL	10
	PN (ls 32 bits)	76 D4 57 ED
	SCI	68 F2 E7 76 96 CE 00 01
	MSDU (Secure Data)	88 CC 01 07 04 7A 0D 46 DF 99 8D 02 03 07 30 31
	ICV (Tag)	FF 8D 32 C2 E0 37 66 51 09 C7 F8 F1 3A B8 02 C6

Table J-11 Integrity and confidentiality, SCI included (28-octet example)

	Field	Value
	MAC DA	01 80 C2 00 00 0E
	MAC SA	F0 76 1E 8D CD 3D
SecTAG	MACsec EtherType	88 E5
	TCI and AN	2D
	SL	10
	PN (ls 32 bits)	76 D4 57 ED
	SCI	68 F2 E7 76 96 CE 00 01
	MSDU (Secure Data)	C4 CF 09 DC 06 DF 24 CB 45 E9 2D 44 08 BA 1D A0
	ICV (Tag)	AF AC 10 CF C4 35 49 FD E4 FA 7F 76 B0 66 3F 70

MACsec Ascon-XPN-128 Cipher Suite test vectors

Table J-12 Unprotected frame (54-octet example)

Field	Value
MAC DA	84 C5 D5 13 D2 AA
MAC SA	F6 E5 BB D2 72 77
MSDU (User Data)	08 00 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 00 01

Octets in transmission order, left to right, top to bottom, with each octet in hexadecimal, most significant digit to the left.

Table J-13 Integrity protected, SCI omitted (54-octet example)

	Field	Value
	MAC DA	84 C5 D5 13 D2 AA
	MAC SA	F6 E5 BB D2 72 77
SecTAG	MACsec EtherType	88 E5
	TCI and AN	01
	SL	2A
	PN (ls 32 bits)	76 D4 57 ED
	SCI	
	MSDU (Secure Data)	08 00 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 00 01
	ICV (Tag)	86 F9 C8 DB 67 EB BE 37 6A 41 B9 76 EE 0E A1 7E

Table J-14 Integrity and confidentiality, SCI omitted (54-octet example)

	Field	Value
	MAC DA	84 C5 D5 13 D2 AA
	MAC SA	F6 E5 BB D2 72 77
SecTAG	MACsec EtherType	88 E5
	TCI and AN	0D
	SL	2A
	PN (ls 32 bits)	76 D4 57 ED
	SCI	
	MSDU (Secure Data)	80 FF B7 40 B2 B7 75 85 8C 22 D1 32 B4 88 9F 48 AA 58 29 51 98 44 6A 71 E8 F8 81 EB 4C D8 A8 AD 86 CA 7E 19 80 83 D7 6F EF 7D
	ICV (Tag)	11 1B D5 AF E5 73 E4 1E 19 F4 07 3C D6 E0 E4 F4

MACsec Ascon-XPN-128 Cipher Suite test vectors

Table J-12 Unprotected frame (54-octet example)

Field	Value
MAC DA	84 C5 D5 13 D2 AA
MAC SA	F6 E5 BB D2 72 77
MSDU (User Data)	08 00 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 00 01

Octets in transmission order, left to right, top to bottom, with each octet in hexadecimal, most significant digit to the left.

Table J-15 Integrity protected, SCI included (54-octet example)

	Field	Value
	MAC DA	84 C5 D5 13 D2 AA
	MAC SA	F6 E5 BB D2 72 77
SecTAG	MACsec EtherType	88 E5
	TCI and AN	21
	SL	2A
	PN (ls 32 bits)	76 D4 57 ED
	SCI	68 F2 E7 76 96 CE 00 01
	MSDU (Secure Data)	08 00 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 00 01
	ICV (Tag)	00 93 A9 C9 51 AE 2B 31 68 7F DD 39 D5 A2 12 24

Table J-16 Integrity and confidentiality, SCI included (54-octet example)

	Field	Value
	MAC DA	84 C5 D5 13 D2 AA
	MAC SA	F6 E5 BB D2 72 77
SecTAG	MACsec EtherType	88 E5
	TCI and AN	2D
	SL	2A
	PN (ls 32 bits)	76 D4 57 ED
	SCI	68 F2 E7 76 96 CE 00 01
	MSDU (Secure Data)	4B 67 8F E5 34 C6 05 DC 7D 86 59 33 4A 69 46 15 EF F5 EF B8 7E 81 74 96 C5 33 11 B2 31 7C 53 33 3F D2 C0 F0 DF 27 44 F8 85 A4
	ICV (Tag)	38 E7 98 B6 BF EE F3 01 4D 3C 20 15 05 68 4C F2

MACsec Ascon-XPN-128 Cipher Suite test vectors

Table J-17 Unprotected frame (60-octet example)

Field	Value
MAC DA	D6 09 B1 F0 56 63
MAC SA	7A E8 E2 CA 4E C5
MSDU (User Data)	08 00 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A 00 03

Octets in transmission order, left to right, top to bottom, with each octet in hexadecimal, most significant digit to the left.

Table J-18 Integrity protected, SCI omitted (60-octet example)

	Field	Value
	MAC DA	D6 09 B1 F0 56 63
	MAC SA	7A E8 E2 CA 4E C5
SecTAG	MACsec EtherType	88 E5
	TCI and AN	01
	SL	00
	PN (ls 32 bits)	76 D4 57 ED
	SCI	
	MSDU (Secure Data)	08 00 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A 00 03
	ICV (Tag)	7B 45 9C 5C 31 D6 2A 40 74 5B BF DA 57 89 79 50

[illegible] example)

	Field	Value
	MAC DA	D6 09 B1 F0 56 63
	MAC SA	7A E8 E2 CA 4E C5
SecTAG	MACsec EtherType	88 E5
	TCI and AN	0D
	SL	00
	PN (ls 32 bits)	76 D4 57 ED
	SCI	
	MSDU (Secure Data)	B3 38 C0 F3 43 EC DD AE 77 EF DD B4 C1 06 01 CC D7 40 07 56 89 41 47 69 EB 3E B9 5C 5A 54 72 FB 2B 00 39 2E 90 BD CA 31 97 4D D8 25 46 D2 C4 58
	ICV (Tag)	D6 C5 4B 4A 3A 61 4E 93 6E 55 E2 D1 F4 C1 BA 19

MACsec Ascon-XPN-128 Cipher Suite test vectors

Table J-17 Unprotected frame (60-octet example)

Field	Value
MAC DA	D6 09 B1 F0 56 63
MAC SA	7A E8 E2 CA 4E C5
MSDU (User Data)	08 00 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A 00 03

Octets in transmission order, left to right, top to bottom, with each octet in hexadecimal, most significant digit to the left.

Table J-20 Integrity protected, SCI included (60-octet example)

	Field	Value
	MAC DA	D6 09 B1 F0 56 63
	MAC SA	7A E8 E2 CA 4E C5
SecTAG	MACsec EtherType	88 E5
	TCI and AN	21
	SL	00
	PN (ls 32 bits)	76 D4 57 ED
	SCI	68 F2 E7 76 96 CE 00 01
	MSDU (Secure Data)	08 00 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A 00 03
	ICV (Tag)	69 68 ED C2 29 D1 AC C0 EF 81 EB E8 94 54 FF 21

Table J-21 Integrity and confidentiality, SCI included (60-octet example)

	Field	Value
	MAC DA	D6 09 B1 F0 56 63
	MAC SA	7A E8 E2 CA 4E C5
SecTAG	MACsec EtherType	88 E5
	TCI and AN	2D
	SL	00
	PN (ls 32 bits)	76 D4 57 ED
	SCI	68 F2 E7 76 96 CE 00 01
	MSDU (Secure Data)	25 BE 5F C9 58 C2 8B 45 38 50 31 37 D5 8B A6 27 F4 7B 72 71 85 CA 7D DE 1C 19 E8 FC 0F 4A 9A CF 23 44 C4 39 84 2A D1 C4 AD B9 C8 29 DE D1 CA 9B
	ICV (Tag)	6C 10 73 DD D5 4F B2 13 4F 0D 06 96 12 A8 31 9A

MACsec Ascon-XPN-128 Cipher Suite test vectors

Table J-22 Unprotected frame (61-octet example)

Field	Value
MAC DA	E2 01 06 D7 CD 0D
MAC SA	68 F2 E7 76 96 CE
MSDU (User Data)	08 00 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A 3B 00 06

Octets in transmission order, left to right, top to bottom, with each octet in hexadecimal, most significant digit to the left.

Table J-23 Integrity protected, SCI omitted (61-octet example)

	Field	Value
	MAC DA	E2 01 06 D7 CD 0D
	MAC SA	68 F2 E7 76 96 CE
SecTAG	MACsec EtherType	88 E5
	TCI and AN	01
	SL	00
	PN (ls 32 bits)	76 D4 57 ED
	SCI	
	MSDU (Secure Data)	08 00 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A 3B 00 06
	ICV (Tag)	E4 43 D9 76 79 A9 B1 17 E5 B2 5F 19 F3 23 7A C5

Table J-24 Integrity and confidentiality, SCI omitted (61-octet example)

	Field	Value
	MAC DA	E2 01 06 D7 CD 0D
	MAC SA	68 F2 E7 76 96 CE
SecTAG	MACsec EtherType	88 E5
	TCI and AN	0D
	SL	00
	PN (ls 32 bits)	76 D4 57 ED
	SCI	
	MSDU (Secure Data)	59 47 DD 38 43 83 C4 F7 31 A7 DB 71 0C 0F D3 38 30 3F 4D 22 8B 10 4E FF 30 F4 3D C6 CC 63 2C 0B 45 39 4C 71 0C 03 D0 A0 0E 9F 18 02 9D 9A 5A EE 6C
	ICV (Tag)	91 32 5B 8A 78 C5 B3 D5 49 4E A6 03 75 2E 06 CD

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Table J-22 Unprotected frame (61-octet example)

Field	Value
MAC DA	E2 01 06 D7 CD 0D
MAC SA	68 F2 E7 76 96 CE
MSDU (User Data)	08 00 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A 3B 00 06

Octets in transmission order, left to right, top to bottom, with each octet in hexadecimal, most significant digit to the left.

Table J-25 Integrity protected, SCI included (61-octet example)

	Field	Value
	MAC DA	E2 01 06 D7 CD 0D
	MAC SA	68 F2 E7 76 96 CE
SecTAG	MACsec EtherType	88 E5
	TCI and AN	21
	SL	00
	PN (ls 32 bits)	76 D4 57 ED
	SCI	68 F2 E7 76 96 CE 00 01
	MSDU (Secure Data)	08 00 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A 3B 00 06
	ICV (Tag)	48 38 7A 6C BE E7 E1 B2 4C 3E 5F 8D CD 11 96 2F

Table J-26 Integrity and confidentiality, SCI included (61-octet example)

	Field	Value
	MAC DA	E2 01 06 D7 CD 0D
	MAC SA	68 F2 E7 76 96 CE
SecTAG	MACsec EtherType	88 E5
	TCI and AN	2D
	SL	00
	PN (ls 32 bits)	76 D4 57 ED
	SCI	68 F2 E7 76 96 CE 00 01
	MSDU (Secure Data)	58 52 6B FC FB 41 47 D0 B8 F4 E7 65 68 47 E6 BF 2E F0 D3 50 E8 DE FF B9 E7 4D 10 68 29 76 6E 56 18 81 8B 09 47 72 80 21 9E 3B 50 AA 52 01 C3 E6 82
	ICV (Tag)	44 1B E9 FC 0F 63 F1 88 C8 E1 66 8B 89 8A 91 BE

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Table J-22 Unprotected frame (61-octet example)

Field	Value
MAC DA	E2 01 06 D7 CD 0D
MAC SA	68 F2 E7 76 96 CE
MSDU (User Data)	08 00 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A 3B 00 06

Octets in transmission order, left to right, top to bottom, with each octet in hexadecimal, most significant digit to the left.

Table J-27 Integrity protected, SCI from SA (61-octet example)

	Field	Value
	MAC DA	E2 01 06 D7 CD 0D
	MAC SA	68 F2 E7 76 96 CE
SecTAG	MACsec EtherType	88 E5
	TCI and AN	41
	SL	00
	PN (ls 32 bits)	76 D4 57 ED
	SCI	
	MSDU (Secure Data)	08 00 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A 3B 00 06
	ICV (Tag)	FA 9D 93 96 B5 E8 36 E4 96 92 62 5E 0C 87 2C B0

Table J-28 Integrity and confidentiality, SCI from SA (61-octet example)

	Field	Value
	MAC DA	E2 01 06 D7 CD 0D
	MAC SA	68 F2 E7 76 96 CE
SecTAG	MACsec EtherType	88 E5
	TCI and AN	4D
	SL	00
	PN (ls 32 bits)	76 D4 57 ED
	SCI	
	MSDU (Secure Data)	A3 35 19 8F 65 D6 6C 67 A1 70 82 60 6C 57 8F 29 0F 51 5A 18 2D 64 00 33 54 45 2E 45 2E 7F 6C 61 F6 D0 F1 55 FC 4B C6 83 1D 71 8C 2F 21 C3 FE E4 94
	ICV (Tag)	A7 34 5C 62 60 AF 40 4D 78 44 B9 5E 41 47 EC EA