INTERNATIONAL STANDARD

ISO/IEC
29109-7

First edition
2011-10-01

Information technology — Conformance testing methodology for biometric data interchange formats defined in ISO/IEC 19794 —

Part 7:
Signature/sign time series data

Technologies de l'information — Méthodologie d'essai de conformité pour les formats d'interéchange de données biométriques définis dans l'ISO/CEI 19794 —

Partie 7: Données de série chronologique de signature/signe

Contents

Page

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 29109-7 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 37, *Biometrics*.

ISO/IEC 29109 consists of the following parts, under the general title *Information technology — Conformance testing methodology for biometric data interchange formats defined in ISO/IEC 19794*:

⎯ *Part 1: Generalized conformance testing methodology*

⎯ *Part 2: Finger minutiae data*

⎯ *Part 3: Finger pattern spectral data*

⎯ *Part 4: Finger image data*

⎯ *Part 5: Face image data*

⎯ *Part 6: Iris image data*

⎯ *Part 7: Signature/sign time series data*

⎯ *Part 8: Finger pattern skeletal data*

⎯ *Part 9: Vascular image data*

⎯ *Part 10: Hand geometry silhouette data*

⎯ *Part 11: Signature/sign processed dynamic data*

⎯ *Part 13: Voice data*

⎯ *Part 14: DNA data*

Introduction

ISO/IEC 19794-7 specifies two data interchange formats for storing, recording, and transmitting signature/sign time series data records. This part of ISO/IEC 29109 establishes tests for checking the correctness of the binary records.

Without standardized methods for conducting conformance tests of commercial products that claim to support ISO/IEC 19794-7, application developers and implementers of Biometric Service Providers can interpret the ISO/IEC 19794-7 specification differently and this can compromise interoperability. This possibility rests on the assertion that conformance to ISO/IEC 19794-7 is a necessary prerequisite for achieving interoperability among implementations. This is the motivation for development of this conformance testing methodology.

This part of ISO/IEC 29109 supports those applications that require use of signature/sign time series data according to ISO/IEC 19794-7. It defines a testing methodology to assure conformance of a vendor's application or service to the base ISO/IEC 19794-7 specification. Thus this document is intended to

— establish elements of the conformance testing methodology framework that are specific to the signature/ sign time series-based data record requirements of ISO/IEC 19794-7,

— define requirements and guidelines for specifying conformance test suites and related test methods for measuring conformity of products and services to the signature/sign time series-based data record requirements of ISO/IEC 19794-7, and

— define test procedures to be followed before, during, and after conformance testing.

This part of ISO/IEC 29109 is applicable to the development and use of conformity test method specifications, conformity test suites for ISO/IEC 19794-7 records, and conformance testing programs for ISO/IEC 19794-7 conformant products. It is intended primarily for use by testing organizations, but can be applied by developers and users of test method specifications and test method implementations.

The tables of test assertions in Clause 6 specify levels of testing for the conformance requirements of ISO/IEC 19794-7.

Information technology — Conformance testing methodology for biometric data interchange formats defined in ISO/IEC 19794 —

Part 7:
Signature/sign time series data

1 Scope

This part of ISO/IEC 29109 specifies elements of conformance testing methodology, test assertions, and test procedures as applicable to ISO/IEC 19794-7. ISO/IEC 19794-7 defines two data interchange formats for signature/sign time series data, one for general use and one compact format for use with smart cards and other tokens.

This part of ISO/IEC 29109 establishes

— test assertions of the structure of both signature/sign time series data formats as specified in ISO/IEC 19794-7 (Type A Level 1 as defined in ISO/IEC 29109-1),

— test assertions of internal consistency by checking the types of values that may be contained within each field (Type A Level 2 as defined in ISO/IEC 29109-1), and

— test assertions on the contents of data records in the signature/sign time series data formats as specified in ISO/IEC 19794-7 (Type A Level 3 as defined in ISO/IEC 29109-1).

This part of ISO/IEC 29109 does not establish

— tests of other characteristics of biometric products or other types of testing of biometric products (e.g. acceptance, performance, robustness, security), and

— tests of conformance of systems that do not produce ISO/IEC 19794-7 records.

2 Conformance

Biometric data interchange format conformance tests conform to this part of ISO/IEC 29109 if they satisfy all of the normative requirements related to Clause 6. Specifically, they shall use the test methodology specified in Clauses 6, 7 and 8 of ISO/IEC 29109-1:2009, and all tests shall use the assertions defined in Table 2 to Table 4.

Implementations of ISO/IEC 19794-7 tested according to the methodology specified shall be able to claim conformance only to those requirements specified in ISO/IEC 19794-7 that are tested by the test methods established by this methodology.

Implementations of ISO/IEC 19794-7 do not necessarily need to conform to all possible aspects of ISO/IEC 19794-7, but only to those ISO/IEC 19794-7 requirements that are claimed to be supported by the implementation in an Implementation Conformance Statement, filled out in accordance with Clause 8 of ISO/IEC 29109-1:2009 and Table 1 of this part of ISO/IEC 29109.

3   Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 19794-7:2007, *Information technology — Biometric data interchange formats — Part 7: Signature/sign time series data*

ISO/IEC 29109-1:2009, *Information technology — Conformance testing methodology for biometric data interchange formats defined in ISO/IEC 19794 — Part 1: Generalized conformance testing methodology*

4   Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19794-7 and ISO/IEC 29109-1 apply.

5   Symbols and abbreviated terms

For the purposes of this document, the symbols and abbreviated terms given in ISO/IEC 19794-7 and ISO/IEC 29109-1 apply.

6   Conformance testing methodology

6.1   General

The testing methodology specified in Clauses 6, 7 and 8 of ISO/IEC 29109-1:2009 shall apply. The content of the tables below is based on the conformance testing methodology outlined in ISO/IEC 29109-1 and shall only be used in the context of that testing methodology.

6.2   Table of requirements in the base standard

The normative requirements of ISO/IEC 19794-7:2007 signature/sign time series data formats are listed in Table 1. Under subformat applicability the columns labelled F and C indicate the Full and Compact Formats. The supplier of the IUT can explain which optional components of the standard are supported and the testing laboratory can note the results of the test.

Table 1 — Requirements of the base standard, ISO/IEC 19794-7:2007

Require-ment ID	Reference in Base Standard	Requirement Summary	Level	Status	Subformat Applicability		IUT Support	Supported Range	Test Result
					F	C			
R-1	5.1	The coordinate system used to express the pen position shall be a three-dimensional Cartesian coordinate system.	3B	M	Y	Y			
R-2	5.1	The x-axis shall be the horizontal axis of the writing plane, with x coordinates increasing to the right.	3B	M	Y	Y			
R-3	5.1	The y-axis shall be the vertical axis of the writing plane, with y coordinates increasing upwards.	3B	M	Y	Y			

Table 1 (*continued*)

Require-ment ID	Reference in Base Standard	Requirement Summary	Level	Status	Subformat Applicability		IUT Support	Supported Range	Test Result
					F	C			
R-4	5.1	The z-axis shall be the axis perpendicular to the writing plane, with z coordinates increasing upwards out of the writing plane starting from 0.	3C	O	Y	Y			
R-5	5.2	The more significant octets of any multioctet quantity are stored at lower addresses in memory than (and are transmitted before) less significant octets.	1	M	Y	Y			
R-6	7.2	The organisation of the BDB shall be as follows:	2	M	Y	N			
R-7		1. mandatory variable-length BDB header containing information about the overall BDB,	2	M	Y	N			
R-8		2. mandatory variable-length BDB body.	2	M	Y	N			
R-9	7.3.1	The BDB header shall contain infor-mation about the overall signature/ sign time series data block.	2	M	Y	N			
R-10	7.3.2	The signature/sign time series data block shall begin with the three ASCII characters "SDI" to identify the data block as following the full format defined in ISO/IEC 19794-7:2007, followed by a zero octet as a string terminator (5344 4900$_{Hex}$).	1	M	Y	N			
R-11	7.3.3	The version number for the version of ISO/IEC 19794-7:2007 used in constructing the signature/sign time series data block shall be placed in four octets. This version number shall consist of three ASCII characters followed by a zero octet as a string terminator. The first and second character shall represent the major revision number and the third character will represent the minor revision number. The version number shall be "10" (203130$_{Hex}$, an ASCII space followed by an ASCII '1' and an ASCII '0').	1	M	Y	N			
R-12	7.3.4.1	The channel descriptions field shall begin with a channel inclusion field indicating the presence or absence of channels. The channel inclusion field shall consist of 2 octets. Each bit shall correspond to a channel as shown in Table 4 of ISO/IEC 19794-7:2007. A bit value of 1 shall encode the presence of the corresponding channel; a bit value of 0 shall encode the absence of the corresponding channel.	1	M	Y	N			

Table 1 (*continued*)

Require-ment ID	Reference in Base Standard	Requirement Summary	Level	Status	Subformat Applicability		IUT Support	Supported Range	Test Result
					F	C			
R-13	7.3.4.2	The channel inclusion field shall be followed by a sequence of channel descriptions for the channels indicated as present in the channel inclusion field. The order of the channel descriptions is determined by the order of indicated inclusion within the channel inclusion field (Table 4 of ISO/IEC 19794-7:2007) starting with the X channel. The channel descriptions are mandatory for all channels present in the signature/sign time series data block.	2	M	Y	N			
R-14	7.3.4.2	Each channel description shall begin with a preamble. Each channel description preamble shall consist of 1 octet. Each of the bits 4 through 8 of a channel description preamble shall correspond to a channel attribute as shown in Table 5 of ISO/IEC 19794-7:2007. A bit value of 1 shall encode the presence of the corresponding channel attribute; a bit value of 0 shall encode the absence of the corresponding channel attribute. A value of 1 for bit 3 of a channel description preamble shall indicate that the value of this channel is constant. If bit 3 of a channel description preamble is set to 1, then this channel shall be absent in the BDB body even though the BDB header indicates the presence of the channel. If the channel description contains a scaling value, then the constant value of this channel shall be 1 divided by the scaling value. A value of 1 for bit 2 of a channel description preamble shall indicate that the linear component of the regression line for this channel has been removed from this channel. If any of the bits 4 through 8 of a channel description pre-amble are set to 1, the preamble shall be followed by a sequence of channel attributes in the same order as indicated in the preamble starting with the scaling value.	2	M	Y	N			
R-15	7.3.4.3	If present, scaling values shall consist of 2 octets. The 5 most significant bits of the first octet shall constitute the exponent field and the remaining 11 bits shall constitute the fraction field. These values should be encoded in 5 bits as an unsigned integer after adding a value of 16.	2	M	Y	N			

Table 1 (*continued*)

Require-ment ID	Reference in Base Standard	Requirement Summary	Level	Status	Subformat Applicability		IUT Support	Supported Range	Test Result
					F	C			
R-16	7.3.4.3, 8.2.2.3	The channel values in the BDB body as well as the minimum, maximum, and mean channel values and the standard deviation in the BDB header are to be divided by the corresponding scaling value to obtain their actual values.	3B	M	Y	Y		N/A	
R-17	7.3.4.4	If present, the minimum and maximum possible channel values shall indicate the scaled range of values that the deployed capture device may deliver for the corresponding channel.	2	M	Y	N			
R-18		For the minimum and maximum possible channel values of the Z, T, DT, F, Az, El, and R channels, integer values in the range from 0 to 65535 are allowed. These values shall be encoded in 2 octets as unsigned integers.	2	M	Y	N			
R-19		For the minimum and maximum possible channel values of the X, Y, VX, VY, AX, AY, TX, and TY channels, integer values in the range from –32768 to 32767 are allowed. These values shall be encoded in 2 octets as unsigned integers after adding 32768 to each value.	2	M	Y	N			
R-20	7.3.4.5	If present, the mean value of the channel values shall be the arithmetic mean, rounded to the nearest integer, of all values for the corresponding channel within a signature/sign time series data block. If present, the standard deviation of the channel values shall be the standard deviation, rounded to the nearest integer, of all values for the corresponding channel within a signature/sign time series data block.	2	M	Y	N			
R-21	7.3.4.5	For the mean values of the Z, T, DT, F, Az, El, and R channels as well as for the standard deviations of all channels, integer values in the range from 0 to 65535 are allowed. These values shall be encoded in 2 octets as unsigned integers. For the mean values of the X, Y, VX, VY, AX, AY, TX, and TY channels, integer values in the range from -32768 to 32767 are allowed. These values shall be encoded in 2 octets as unsigned integers after adding 32768 to each value.	2	M	Y	N			
R-22	7.3.5	A single octet shall be reserved for future revisions of this specification. For Version 1.0 of ISO/IEC 19794-7:2007 this octet shall be set to 00_{Hex}.	2	M	Y	N			

Table 1 (*continued*)

Require-ment ID	Reference in Base Standard	Requirement Summary	Level	Status	Subformat Applicability		IUT Support	Supported Range	Test Result
					F	C			
R-23	7.4.1	The BDB body shall begin with a pre-amble indicating the presence or absence of the optional extended data. The preamble shall consist of 1 octet. A value of 1 in bit 8 (MSB) of the preamble shall encode the presence of the extended data; a value of 0 in bit 8 (MSB) of the preamble shall encode the absence of the extended data. The trailing bits of the preamble shall have the value 0.	1	M	Y	N			
R-24	7.4.2	The BDB body preamble shall be followed by a sequence of sample points (cf. clause 7.4.2) and, as indicated in the preamble, optional extended data (cf. clause 7.4.3).	1	M	Y	N			
R-25	7.4.2	The sequence of sample points shall begin with a length field. The length field indicates the number of sample points. The length field shall consist of 3 octets, representing the number of sample points as an unsigned integer.	2	M	Y	N			
R-26	7.4.2	The length field shall be followed by a sequence of fields for subsequent sample points. For each sample point, the field shall begin with a value for the mandatory X channel, followed by a value for the mandatory Y channel and a sequence of optional channel values as indicated by the channel inclusion field in the BDB header.	2	M	Y	N			
R-27	7.4.2	For the Z, T, DT, F, Az, El, and R channels, integer values in the range from 0 to 65535 are allowed. These values shall be encoded in 2 octets as unsigned integers.	2	M	Y	N			
R-28	7.4.2	For the X, Y, VX, VY, AX, AY, TX, and TY channels, integer values in the range from −32768 to 32767 are allowed. These values shall be encoded in 2 octets as unsigned integers, after adding 32768 to each value. Hence, for non-negative num-bers, bit 8 of the most significant octet has the value 1; for negative numbers, bit 8 of the most significant octet has the value 0. For decoding these values, 32768 is to be subtracted from each recorded value.	2	M	Y	N			
R-29	7.4.2	For the S channel, integer values in the range from 0 to 1 are allowed. These values shall be encoded in one octet as unsigned integers.	2	M	Y	N			

Table 1 (*continued*)

Require-ment ID	Reference in Base Standard	Requirement Summary	Level	Status	Subformat Applicability		IUT Support	Supported Range	Test Result
					F	C			
R-30	7.4.2	The extended data field shall begin with a length field. The length field shall indicate the number of contents octets in the extended data field. The length field shall consist of 2 octets, representing the number of subsequent contents octets as an unsigned integer.	2	M	Y	N			
R-31	8.2.1	If present, the matching algorithm parameters data object tag is B1$_{Hex}$. Its length shall be encoded following the Distinguished Encoding Rules of ASN.1 defined in ISO/IEC 8825-1.	1	M	N	Y			
R-32	8.2.2.1	If present, the sequence of channel descriptions shall begin with a channel inclusion field as defined in clause 7.3.4.1 of ISO/IEC 19794-7:2007.	1	M	N	Y			
R-33	8.2.2.2	The channel inclusion field shall be followed by a sequence of channel descriptions for the channels indicated as present in the channel inclusion field. The order of the channel descriptions is determined by the order of indicated inclusion within the channel inclusion field (19794-7:2007 Table 4) starting with the X channel. The channel descriptions are manda-tory for all channels present in the signature/sign time series data block.	1	M	N	Y			
R-34		Each channel description shall begin with a preamble as defined in clause 7.3.4.2 of ISO/IEC 19794-7:2007.	1	M	N	Y			
R-35		If any of the bits 4 through 8 of a channel description preamble are set to 1, the preamble shall be followed by a sequence of channel attributes in the same order as indicated in the preamble starting with the scaling value.	1	M	N	Y			
R-36	8.2.2.3	If present, the meaning and encoding of the scaling values shall be as defined in clause 7.3.4.3 of ISO/IEC 19794-7:2007.	2	M	N	Y			
R-37	8.2.2.4	If present, the meaning of the minimum and maximum possible channel values shall be as defined in clause 7.3.4.4 of ISO/IEC 19794-7:2007.	2	M	N	Y			
R-38		For the minimum and maximum possible channel values of the Z, T, DT, F, Az, El, and R channels, integer values in the range from 0 to 255 are allowed. These values shall be encoded in 1 octet as unsigned integers.	2	M	N	Y			

Table 1 (*continued*)

Require-ment ID	Reference in Base Standard	Requirement Summary	Level	Status	Subformat Applicability		IUT Support	Supported Range	Test Result
					F	**C**			
R-39		For the minimum and maximum possible channel values of the X, Y, VX, VY, AX, AY, TX, and TY channels, integer values in the range from –128 to 127 are allowed. These values shall be encoded in 1 octet as un-signed integers after adding 128 to each value. Hence, for non-negative numbers, bit 8 of the most significant octet has the value 1; for negative numbers, bit 8 of the most significant octet has the value 0. For decoding these values, 128 is to be subtracted from each recorded value.	2	M	N	Y			
R-40	8.2.2.5	If present, the meaning of the mean value and of the standard deviation of the channel values shall be as defined in clause 19794-7:2007 7.3.4.5.	2	M	N	Y			
R-41		For the mean values of the Z, T, DT, F, Az, El, and R channels as well as for the standard deviations of all channels, integer values in the range from 0 to 255 are allowed. These values shall be encoded in 1 octet as unsigned integers.	2	M	N	Y			
R-42		For the mean values of the X, Y, VX, VY, AX, AY, TX, and TY channels, integer values in the range from -128 to 127 are allowed. These values shall be encoded in 1 octet as unsigned inte-gers after adding 128 to each value. Hence, for non-negative numbers, bit 8 of the most significant octet has the value 1; for negative numbers, bit 8 of the most significant octet has the value 0. For decoding these values, 128 is to be subtracted from each recorded value.	2	M	N	Y			
R-43	8.2.3	If there is an upper limit to the number of sample points, the maximum number of sample points that the comparison algorithm is able to process may be indicated in the matching algorithm parameters data object. If present, the maximum number of sample points shall be encoded as an unsigned integer.	2	M	N	Y			

Table 1 (*continued*)

Require-ment ID	Reference in Base Standard	Requirement Summary	Level	Status	Subformat Applicability		IUT Support	Supported Range	Test Result
					F	**C**			
R-44	8.4	The body of a signature/sign time series data block consists of a sequence of fields, each of which consists of a sequence of channel values at a particular sample point, for subsequent sample points. For each sample point, the field shall begin with a value for the mandatory X channel, followed by a value for the mandatory Y channel, and a sequence of optional channel values as indicated by the channel inclusion field in the matching algorithm parameters data object.	1	M	N	Y			
R-45	8.4	For the Z, T, F, Az, El, and R channels, integer values in the range from 0 to 255 are allowed. These values shall be encoded in 1 octet as unsigned integers. In the compact format, the T channel shall contain time data relative to the preceding sample.	2	M	N	Y			
R-46	8.4	For the X, Y, VX, VY, AX, AY, TX, and TY channels, integer values in the range from –128 to 127 are allowed. These values shall be encoded in 1 octet as unsigned integers after adding 128 to each value. Hence, for non-negative numbers, bit 8 has the value 1; for negative numbers, bit 8 has the value 0. For decoding these values, 128 is to be subtracted from each recorded value.	2	M	N	Y			
R-47	8.4	For the S channel, integer values in the range from 0 to 1 are allowed. These values shall be encoded in one octet as unsigned integers.	2	M	N	Y			
R-48	8.3	The tag of a signature/sign time series data block shall be $5f2e_{Hex}$ if there is no extended data and $7f2e_{Hex}$ if there is also extended data.	2	M	N	Y			
R-49	8.3	The length of a signature/sign time series data block shall be encoded following the Distinguished Encoding Rules of ASN.1 defined in ISO/IEC 8825-1.	2	M	N	Y			
R-50	8.3	If there is extended data, the body of a signature/sign time series data block shall be preceded by the tag 81_{Hex} and a length field.	1	M	N	Y			
R-51	8.3	If there is extended data, it shall follow the body of a signature/sign time series data block and shall be preceded by the tag 82_{Hex} or $A2_{Hex}$ and a length field.	1	M	N	Y			

6.3 Table of Test Assertions – Full Format

The specific test assertions required for conformance testing of ISO/IEC 19794-7:2007 signature/sign time series full format for data interchange are listed in Table 2.

The conformance test assertions are listed in the order in which the corresponding fields, if present, are required to appear in a conforming data record.

Table 2 — ISO/IEC 19794-7:2007 full format test assertions

Test	Section	Require-ment ID	Level	Field	Op-era-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Re-sult
1	BDB Header	R-10	1	Format identifier	EQ	53444900$_{Hex}$		M			
2	BDB Header	R-11	1	Version	EQ	20313000$_{Hex}$		M			
3.1	BDB Header	R-12	1	xIncluded	EQ	1$_{Bin}$		M			
3.2	BDB Header	R-12	1	yIncluded	EQ	1$_{Bin}$		M			
3.3	BDB Header	R-12	1	zIncluded	EQ	0$_{Bin}$, 1$_{Bin}$		M			
3.4	BDB Header	R-12	1	vXIncluded	EQ	0$_{Bin}$, 1$_{Bin}$		M			
3.5	BDB Header	R-12	1	vYIncluded	EQ	0$_{Bin}$, 1$_{Bin}$		M			
3.6	BDB Header	R-12	1	aXIncluded	EQ	0$_{Bin}$, 1$_{Bin}$		M			
3.7	BDB Header	R-12	1	aYIncluded	EQ	0$_{Bin}$, 1$_{Bin}$		M			
3.8	BDB Header	R-12	1	tIncluded	EQ	0$_{Bin}$, 1$_{Bin}$		M			
3.9	BDB Header	R-12	1	dtIncluded	EQ	0$_{Bin}$, 1$_{Bin}$		M			
3.10	BDB Header	R-12	1	fIncluded	EQ	0$_{Bin}$, 1$_{Bin}$		M			
3.11	BDB Header	R-12	1	sIncluded	EQ	0$_{Bin}$, 1$_{Bin}$		M			
3.12	BDB Header	R-12	1	tXIncluded	EQ	0$_{Bin}$, 1$_{Bin}$		M			
3.13	BDB Header	R-12	1	tYIncluded	EQ	0$_{Bin}$, 1$_{Bin}$		M			
3.14	BDB Header	R-12	1	azIncluded	EQ	0$_{Bin}$, 1$_{Bin}$		M			
3.15	BDB Header	R-12	1	elIncluded	EQ	0$_{Bin}$, 1$_{Bin}$		M			
3.16	BDB Header	R-12	1	rIncluded	EQ	0$_{Bin}$, 1$_{Bin}$		M			
3.17.1	X Channel Descriptor	R-14	2	xScalingValue-Included	EQ	0$_{Bin}$, 1$_{Bin}$		M			
3.17.2	X Channel Descriptor	R-14	2	xMinIncluded	EQ	0$_{Bin}$, 1$_{Bin}$		M			
3.17.3	X Channel Descriptor	R-14	2	xMaxIncluded	EQ	0$_{Bin}$, 1$_{Bin}$		M			

Table 2 (*continued*)

Test	Section	Require-ment ID	Level	Field	Op-era-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Re-sult
3.19.1	Z Channel Descriptor	R-14	2	zScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.19.2	Z Channel Descriptor	R-14	2	zMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.19.3	Z Channel Descriptor	R-14	2	zMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.19.4	Z Channel Descriptor	R-14	2	zMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.19.5	Z Channel Descriptor	R-14	2	zStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.19.6	Z Channel Descriptor	R-14	2	zIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.19.7	Z Channel Descriptor	R-14	2	zLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.19.8	Z Channel Descriptor	R-14	1	reserved	EQ	0_{Bin} if present		M			
3.19.9	Z Channel Descriptor	R-15	2	zScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.19.10	Z Channel Descriptor	R-15	2	zScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.19.11	Z Channel Descriptor	R-16, R-17, R-18	2	zMin	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.19.12	Z Channel Descriptor	R-16, R-17, R-18	2	zMax	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.19.13	Z Channel Descriptor	R-16, R-20, R-21	2	zMean	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.19.14	Z Channel Descriptor	R-16, R-20, R-21	2	zStd	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.20.1	VX Channel Descriptor	R-14	2	vXScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.20.2	VX Channel Descriptor	R-14	2	vXMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.20.3	VX Channel Descriptor	R-14	2	vXMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.20.4	VX Channel Descriptor	R-14	2	vXMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.20.5	VX Channel Descriptor	R-14	2	vXStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.20.6	VX Channel Descriptor	R-14	2	vXIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.20.7	VX Channel Descriptor	R-14	2	vXLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.20.8	VX Channel Descriptor	R-14	1	reserved	EQ	0_{Bin} if present		M			
3.20.9	VX Channel Descriptor	R-15	2	vXScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.20.10	VX Channel Descriptor	R-15	2	vXScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.20.11	VX Channel Descriptor	R-16, R-17, R-19	2	vXMin	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			

Table 2 (*continued*)

Test	Section	Require-ment ID	Level	Field	Op-era-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Re-sult
3.20.12	VX Channel Descriptor	R-16, R-17, R-19	2	vXMax	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.20.13	VX Channel Descriptor	R-16, R-20, R-21	2	vXMean	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.20.14	VX Channel Descriptor	R-16, R-20, R-21	2	vXStd	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.21.1	VY Channel Descriptor	R-14	2	vYScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.21.2	VY Channel Descriptor	R-14	2	vYMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.21.3	VY Channel Descriptor	R-14	2	vYMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.21.4	VY Channel Descriptor	R-14	2	vYMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.21.5	VY Channel Descriptor	R-14	2	vYStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.21.6	VY Channel Descriptor	R-14	2	vYIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.21.7	VY Channel Descriptor	R-14	2	vYLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.21.8	VY Channel Descriptor	R-14	1	reserved	EQ	0_{Bin} if present		M			
3.21.9	VY Channel Descriptor	R-15	2	vYScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.21.10	VY Channel Descriptor	R-15	2	vYScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.21.11	VY Channel Descriptor	R-16, R-17, R-19	2	vYMin	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.21.12	VY Channel Descriptor	R-16, R-17, R-19	2	vYMax	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.21.13	VY Channel Descriptor	R-16, R-20, R-21	2	vYMean	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.21.14	VY Channel Descriptor	R-16, R-20, R-21	2	vYStd	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.22.1	AX Channel Descriptor	R-14	2	aXScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.22.2	AX Channel Descriptor	R-14	2	aXMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.22.3	AX Channel Descriptor	R-14	2	aXMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.22.4	AX Channel Descriptor	R-14	2	aXMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.22.5	AX Channel Descriptor	R-14	2	aXStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.22.6	AX Channel Descriptor	R-14	2	aXIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.22.7	AX Channel Descriptor	R-14	2	aXLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.22.8	AX Channel Descriptor	R-14	1	reserved	EQ	0_{Bin} if present		M			
3.22.9	AX Channel Descriptor	R-15	2	aXScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			

Table 2 (*continued*)

Test	Section	Require-ment ID	Level	Field	Op-era-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Re-sult
3.22.10	AX Channel Descriptor	R-15	2	aXScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.22.11	AX Channel Descriptor	R-16, R-17, R-19	2	aXMin	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.22.12	AX Channel Descriptor	R-16, R-17, R-19	2	aXMax	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.22.13	AX Channel Descriptor	R-16, R-20, R-21	2	aXMean	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.22.14	AX Channel Descriptor	R-16, R-20, R-21	2	aXStd	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.23.1	AY Channel Descriptor	R-14	2	aYScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.23.2	AY Channel Descriptor	R-14	2	aYMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.23.3	AY Channel Descriptor	R-14	2	aYMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.23.4	AY Channel Descriptor	R-14	2	aYMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.23.5	AY Channel Descriptor	R-14	2	aYStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.23.6	AY Channel Descriptor	R-14	2	aYIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.23.7	AY Channel Descriptor	R-14	2	aYLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.23.8	AY Channel Descriptor	R-14	1	reserved	EQ	0_{Bin} if present		M			
3.23.9	AY Channel Descriptor	R-15	2	aYScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.23.10	AY Channel Descriptor	R-15	2	aYScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.23.11	AY Channel Descriptor	R-16, R-17, R-19	2	aYMin	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.23.12	AY Channel Descriptor	R-16, R-17, R-19	2	aYMax	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.23.13	AY Channel Descriptor	R-16, R-20, R-21	2	aYMean	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.23.14	AY Channel Descriptor	R-16, R-20, R-21	2	aYStd	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.24.1	T Channel Descriptor	R-14	2	tScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.24.2	T Channel Descriptor	R-14	2	tMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.24.3	T Channel Descriptor	R-14	2	tMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.24.4	T Channel Descriptor	R-14	2	tMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.24.5	T Channel Descriptor	R-14	2	tStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.24.6	T Channel Descriptor	R-14	2	tIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.24.7	T Channel Descriptor	R-14	2	tLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			

Table 2 (*continued*)

Test	Section	Require-ment ID	Level	Field	Op-era-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Re-sult
3.24.8	T Channel Descriptor	R-14	1	reserved	EQ	0_{Bin} if present		M			
3.24.9	T Channel Descriptor	R-15	2	tScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.24.10	T Channel Descriptor	R-15	2	tScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.24.11	T Channel Descriptor	R-16, R-17, R-18	2	tMin	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.24.12	T Channel Descriptor	R-16, R-17, R-18	2	tMax	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.24.13	T Channel Descriptor	R-16, R-20, R-21	2	tMean	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.24.14	T Channel Descriptor	R-16, R-20, R-21	2	tStd	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.25.1	DT Channel Descriptor	R-14	2	dTScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.25.2	DT Channel Descriptor	R-14	2	dTMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.25.3	DT Channel Descriptor	R-14	2	dTMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.25.4	DT Channel Descriptor	R-14	2	dTMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.25.5	DT Channel Descriptor	R-14	2	dTStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.25.6	DT Channel Descriptor	R-14	2	dTIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.25.7	DT Channel Descriptor	R-14	2	dTLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.25.8	DT Channel Descriptor	R-14	1	reserved	EQ	0_{Bin} if present		M			
3.25.9	DT Channel Descriptor	R-15	2	dTScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.25.10	DT Channel Descriptor	R-15	2	dTScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.25.11	DT Channel Descriptor	R-16, R-17, R-18	2	dTMin	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.25.12	DT Channel Descriptor	R-16, R-17, R-18	2	dTMax	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.25.13	DT Channel Descriptor	R-16, R-20, R-21	2	dTMean	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.25.14	DT Channel Descriptor	R-16, R-20, R-21	2	dTStd	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.26.1	F Channel Descriptor	R-14	2	fScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.26.2	F Channel Descriptor	R-14	2	fMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.26.3	F Channel Descriptor	R-14	2	fMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.26.4	F Channel Descriptor	R-14	2	fMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		IM			
3.26.5	F Channel Descriptor	R-14	2	fStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			

Table 2 (*continued*)

Test	Section	Require-ment ID	Level	Field	Op-era-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Re-sult
3.26.6	F Channel Descriptor	R-14	2	fIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.26.7	F Channel Descriptor	R-14	2	fLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.26.8	F Channel Descriptor	R-14	1	reserved	EQ	0_{Bin} if present		M			
3.26.9	F Channel Descriptor	R-15	2	fScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.26.10	F Channel Descriptor	R-15	2	fScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.26.11	F Channel Descriptor	R-16, R-17, R-18	2	fMin	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.26.12	F Channel Descriptor	R-16, R-17, R-18	2	fMax	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.26.13	F Channel Descriptor	R-16, R-20, R-21	2	fMean	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.26.14	F Channel Descriptor	R-16, R-20, R-21	2	fStd	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.27.1	S Channel Descriptor	R-14	2	sScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.27.2	S Channel Descriptor	R-14	2	sMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.27.3	S Channel Descriptor	R-14	2	sMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.27.4	S Channel Descriptor	R-14	2	sMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.27.5	S Channel Descriptor	R-14	2	sStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.27.6	S Channel Descriptor	R-14	2	sIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.27.7	S Channel Descriptor	R-14	2	sLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.27.8	S Channel Descriptor	R-14	1	reserved	EQ	0_{Bin} if present		M			
3.27.9	S Channel Descriptor	R-15	2	sScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.27.10	S Channel Descriptor	R-15	2	sScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.27.11	S Channel Descriptor	R-16, R-17	2	sMin	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.27.12	S Channel Descriptor	R-16, R-17	2	sMax	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.27.13	S Channel Descriptor	R-16, R-20, R-21	2	sMean	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.27.14	S Channel Descriptor	R-16, R-20, R-21	2	sStd	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.28.1	TX Channel Descriptor	R-14	2	tXScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.28.2	TX Channel Descriptor	R-14	2	tXMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			

Table 2 (*continued*)

Test	Section	Require-ment ID	Level	Field	Op-era-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Re-sult
3.28.3	TX Channel Descriptor	R-14	2	tXMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.28.4	TX Channel Descriptor	R-14	2	tXMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.28.5	TX Channel Descriptor	R-14	2	tXStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.28.6	TX Channel Descriptor	R-14	2	tXIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.28.7	TX Channel Descriptor	R-14	2	tXLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.28.8	TX Channel Descriptor	R-14	1	reserved	EQ	0_{Bin} if present		M			
3.28.9	TX Channel Descriptor	R-15	2	tXScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.28.10	TX Channel Descriptor	R-15	2	tXScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.28.11	TX Channel Descriptor	R-16, R-17, R-19	2	tXMin	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.28.12	TX Channel Descriptor	R-16, R-17, R-19	2	tXMax	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.28.13	TX Channel Descriptor	R-16, R-20, R-21	2	tXMean	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.28.14	TX Channel Descriptor	R-16, R-20, R-21	2	tXStd	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.29.1	TY Channel Descriptor	R-14	2	tYScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.29.2	TY Channel Descriptor	R-14	2	tYMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.29.3	TY Channel Descriptor	R-14	2	tYMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.29.4	TY Channel Descriptor	R-14	2	tYMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.29.5	TY Channel Descriptor	R-14	2	tYStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.29.6	TY Channel Descriptor	R-14	2	tYIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.29.7	TY Channel Descriptor	R-14	2	tYLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.29.8	TY Channel Descriptor	R-14	1	reserved	EQ	0_{Bin} if present		M			
3.29.9	TY Channel Descriptor	R-15	2	tYScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.29.10	TY Channel Descriptor	R-15	2	tYScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.29.11	TY Channel Descriptor	R-16, R-17, R-19	2	tYMin	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.29.12	TY Channel Descriptor	R-16, R-17, R-19	2	tYMax	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.29.13	TY Channel Descriptor	R-16, R-20, R-21	2	tYMean	EQ	0000_{Hex} to $ffff_{Hex}$ if present		IM			
3.29.14	TY Channel Descriptor	R-16, R-20, R-21	2	tYStd	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			

Table 2 (*continued*)

Test	Section	Require-ment ID	Level	Field	Op-era-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Re-sult
3.30.1	Az Channel Descriptor	R-14	2	azScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.30.2	Az Channel Descriptor	R-14	2	azMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.30.3	Az Channel Descriptor	R-14	2	azMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.30.4	Az Channel Descriptor	R-14	2	azMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.30.5	Az Channel Descriptor	R-14	2	azStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.30.6	Az Channel Descriptor	R-14	2	azIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.30.7	Az Channel Descriptor	R-14	2	azLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.30.8	Az Channel Descriptor	R-14	1	reserved	EQ	0_{Bin} if present		M			
3.30.9	Az Channel Descriptor	R-15	2	azScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.30.10	Az Channel Descriptor	R-15	2	azScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.30.11	Az Channel Descriptor	R-16, R-17, R-18	2	azMin	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.30.12	Az Channel Descriptor	R-16, R-17, R-18	2	azMax	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.30.13	Az Channel Descriptor	R-16, R-20, R-21	2	azMean	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.30.14	Az Channel Descriptor	R-16, R-20, R-21	2	azStd	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.31.1	El Channel Descriptor	R-14	2	elScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.31.2	El Channel Descriptor	R-14	2	elMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.31.3	El Channel Descriptor	R-14	2	elMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.31.4	El Channel Descriptor	R-14	2	elMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.31.5	El Channel Descriptor	R-14	2	elStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.31.6	El Channel Descriptor	R-14	2	elIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.31.7	El Channel Descriptor	R-14	2	elLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.31.8	El Channel Descriptor	R-14	1	reserved	EQ	0_{Bin} if present		M			
3.31.9	El Channel Descriptor	R-15	2	elScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.31.10	El Channel Descriptor	R-15	2	elScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.31.11	El Channel Descriptor	R-16, R-17, R-18	2	elMin	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.31.12	El Channel Descriptor	R-16, R-17, R-18	2	elMax	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			

Table 2 (*continued*)

Test	Section	Require-ment ID	Level	Field	Op-era-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Re-sult
3.31.13	EI Channel Descriptor	R-16, R-20, R-21	2	elMean	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.31.14	EI Channel Descriptor	R-16, R-20, R-21	2	elStd	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.32.1	R Channel Descriptor	R-14	2	rScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.32.2	R Channel Descriptor	R-14	2	rMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.32.3	R Channel Descriptor	R-14	2	rMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.32.4	R Channel Descriptor	R-14	2	rMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.32.5	R Channel Descriptor	R-14	2	rStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.32.6	R Channel Descriptor	R-14	2	rIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.32.7	R Channel Descriptor	R-14	2	rLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.32.8	R Channel Descriptor	R-14	1	reserved	EQ	0_{Bin} if present		M			
3.32.9	R Channel Descriptor	R-15	2	rScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.32.10	R Channel Descriptor	R-15	2	rScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.32.11	R Channel Descriptor	R-16, R-17, R-18	2	rMin	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.32.12	R Channel Descriptor	R-16, R-17, R-18	2	rMax	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.32.13	R Channel Descriptor	R-16, R-20, R-21	2	rMean	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.32.14	R Channel Descriptor	R-16, R-20, R-21	2	rStd	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
3.33	BDB Header	R-22	1	Reserved	EQ	00_{Hex}		M			
5.1	BDB Body	R-22	1	preamble	EQ	00_{Hex}, 80_{Hex}		M			
5.2	BDB Body	R-25	2	numOfSampPts	EQ	000000_{Hex} to $ffffff_{Hex}$		M			
5.3	BDB Body	R-25	2	sampPts	EQ	Sample Points [numOfSampPts] if present		M			
5.4	BDB Body	R-30	2	extendedData-Length	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
5.5	BDB Body	R-30	2	extendedData	EQ	any value if present		M			
6.1	Sample Points	R-26, R-27, R-28, R-29	2	x	EQ	0000_{Hex} to $ffff_{Hex}$		M			
6.2	Sample Points	R-26, R-27, R-28, R-29	2	y	EQ	0000_{Hex} to $ffff_{Hex}$		M			
6.3	Sample Points	R-26, R-27, R-28, R-29	2	z	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			

Table 2 (*continued*)

Test	Section	Require- ment ID	Level	Field	Op- era- tor	Operands	Test Note	Status	IUT Sup- port	Sup- ported Range	Test Re- sult
6.4	Sample Points	R-26, R-27, R-28, R-29	2	vX	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
6.5	Sample Points	R-26, R-27, R-28, R-29	2	vY	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
6.6	Sample Points	R-26, R-27, R-28, R-29	2	aX	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
6.7	Sample Points	R-26, R-27, R-28, R-29	2	aY	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
6.8	Sample Points	R-26, R-27, R-28, R-29	2	t	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
6.9	Sample Points	R-26, R-27, R-28, R-29	2	dt	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
6.10	Sample Points	R-26, R-27, R-28, R-29	2	f	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
6.11	Sample Points	R-26, R-27, R-28, R-29	2	s	EQ	00_{Hex}, 01_{Hex} if present		M			
6.12	Sample Points	R-26, R-27, R-28, R-29	2	tX	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
6.13	Sample Points	R-26, R-27, R-28, R-29	2	tY	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
6.14	Sample Points	R-26, R-27, R-28, R-29	2	az	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
6.15	Sample Points	R-26, R-27, R-28, R-29	2	el	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
6.16	Sample Points	R-26, R-27, R-28, R-29	2	r	EQ	0000_{Hex} to $ffff_{Hex}$ if present		M			
6.17	Sample Points	R-1, R-2, R-3, R-16	3B	x, y, s	N/A	N/A	1	M			
6.18	Sample Points	R-1, R-2, R-3, R-16	3B	x, y, s	N/A	N/A	2	M			

Test Notes

1   Enter strokes of defined direction and length to a signature/sign time series data capture subsystem and check whether the direction and length of the strokes are correctly reflected in the output signature/sign time series data records.

Test stimulus: A 2 cm horizontal line followed by a 2 cm vertical line drawn on the capture surface will enable an assessment of the accuracy of the X, Y and S channels (with reference to the scaling values).

Expected outcome: No Y channel deviation should be detected in the horizontal line drawing data and no X channel deviation should be detected in the vertical line drawing data. A single 'pen-up' change (S channel: 1 → 0) followed by a single 'pen-down' change (S channel: 0 → 1) between line drawing data.

2   Enter strokes of defined direction and length to a signature/sign time series data capture subsystem and check whether the direction and length of the strokes are correctly reflected in the output signature/sign time series data records.

Test stimulus: A circle of 2 cm in diameter drawn using a template overlaid on capture surface will enable an assessment of the accuracy of the X and Y channels (with reference to the scaling values).

Expected outcome: Both X and Y channel data should constantly change as the pen moves during the drawing process.

6.4   Table of Test Assertions – Compact Format

The specific test assertions required for conformance testing of ISO/IEC 19794-7:2007 signature/sign time series compact format for data interchange are listed in Table 3.

The conformance test assertions are listed in the order in which the corresponding fields, if present, are required to appear in a conforming data record.

Table 3 — ISO/IEC 19794-7:2007 compact format BDB test assertions

Test	Section	Requirement ID	Level	Field	Operator	Operands	Test Note	Status	IUT Support	Supported Range	Test Result
1	BDB header	R-48	1	tag	eq	$5f2e_{Hex}$, $7f2e_{Hex}$	1	M			
2.1	BDB header	R-49	1	length	eq	00_{Hex} to $7f_{Hex}$, 8180_{Hex} to $81ff_{Hex}$, 820100_{Hex} to $82ffff_{Hex}$	2	M			
2.2	BDB header	R-49	2	length	eq	number of contents octets		M			
3.1	BDB header	R-50	1	sampPtTag	eq	81_{Hex}		O-1			
3.2	BDB header	R-51	1	sampPtLength	eq	00_{Hex} to $7f_{Hex}$, 8180_{Hex} to $81ff_{Hex}$, 820100_{Hex} to $82ffff_{Hex}$	2	O-1			
3.3	BDB header		2	sampPtLength	eq	number of contents octets		O-1			
4.1	BDB body	R-44, R-45, R-46, R-47	2	x	eq	00_{Hex} to ff_{Hex}		M			
4.2	BDB body	R-44, R-45, R-46, R-47	2	y	eq	00_{Hex} to ff_{Hex}		M			
4.3	BDB body	R-44, R-45, R-46, R-47	2	z	eq	00_{Hex} to ff_{Hex} if present		M			
4.4	BDB body	R-44, R-45, R-46, R-47	2	vX	eq	00_{Hex} to ff_{Hex} if present		M			
4.5	BDB body	R-44, R-45, R-46, R-47	2	vY	eq	00_{Hex} to ff_{Hex} if present		M			
4.6	BDB body	R-44, R-45, R-46, R-47	2	aX	eq	00_{Hex} to ff_{Hex} if present		M			
4.7	BDB body	R-44, R-45, R-46, R-47	2	aY	eq	00_{Hex} to ff_{Hex} if present		M			
4.8	BDB body	R-44, R-45, R-46, R-47	2	t	eq	00_{Hex} to ff_{Hex} if present		M			
4.9	BDB body	R-44, R-45, R-46, R-47	2	dt	eq	00_{Hex} to ff_{Hex} if present		M			

Table 3 (*continued*)

Test	Section	Requirement ID	Level	Field	Opera tor	Operands	Test Note	Status	IUT Sup- port	Sup- ported Range	Test Result
4.10	BDB body	R-44, R-45, R-46, R-47	2	f	eq	00$_{Hex}$ to ff$_{Hex}$ if present		M			
4.11	BDB body	R-44, R-45, R-46, R-47	2	s	eq	00$_{Hex}$, 01$_{Hex}$ if present		M			
4.12	BDB body	R-44, R-45, R-46, R-47	2	tX	eq	00$_{Hex}$ to ff$_{Hex}$ if present		M			
4.13	BDB body	R-44, R-45, R-46, R-47	2	tY	eq	00$_{Hex}$ to ff$_{Hex}$ if present		M			
4.14	BDB body	R-44, R-45, R-46, R-47	2	az	eq	00$_{Hex}$ to ff$_{Hex}$ if present		M			
4.15	BDB body	R-44, R-45, R-46, R-47	2	el	eq	00$_{Hex}$ to ff$_{Hex}$ if present		M			
4.16	BDB body	R-44, R-45, R-46, R-47	2	r	eq	00$_{Hex}$ to ff$_{Hex}$ if present		M			
4.17	Sample Points	R-1, R-2, R-3, R-16	3B	x, y, s	N/A	N/A	3	M			
4.18	Sample Points	R-1, R-2, R-3, R-16	3B	x, y, s	N/A	N/A	4	M			
5.1	BDB body	R-51	1	extDataTag	eq	82$_{Hex}$, A2$_{Hex}$		O-1			
5.2	BDB body	R-51	1	extDataLength	eq	00$_{Hex}$ to 7f$_{Hex}$, 8180$_{Hex}$ to 81ff$_{Hex}$, 820100$_{Hex}$ to 82ffff$_{Hex}$	2	O-1			
5.3	BDB body	R-51	2	extDataLength	eq	number of contents octets		O-1			
5.4	BDB body	R-51	2	extData	eq	any value		O-1			

Test Notes

1   The tag shall be 5f2e$_{Hex}$ if there is no extended data and 7f2e$_{Hex}$ if there is also extended data.

2   The length shall be encoded following the Distinguished Encoding Rules of ASN.1 defined in ISO/IEC 8825-1.

3   Enter strokes of defined direction and length to a signature/sign time series data capture subsystem and check whether the direction and length of the strokes are correctly reflected in the output signature/sign time series data records.

Test stimulus: A 2 cm horizontal line followed by a 2 cm vertical line drawn on the capture surface will enable an assessment of the accuracy of the X, Y and S channels (with reference to the scaling values).

Expected outcome: No Y channel deviation should be detected in the horizontal line drawing data and no X channel deviation should be detected in the vertical line drawing data. A single 'pen-up' change (S channel: 1 $\rightarrow$ 0) followed by a single 'pen-down' change (S channel: 0 $\rightarrow$ 1) between line drawing data.

4   Enter strokes of defined direction and length to a signature/sign time series data capture subsystem and check whether the direction and length of the strokes are correctly reflected in the output signature/sign time series data records.

Test stimulus: A circle of 2 cm in diameter drawn using a template overlaid on capture surface will enable an assessment of the accuracy of the X and Y channels (with reference to the scaling values).

Expected outcome: Both X and Y channel data should constantly change as the pen moves during the drawing process.

Status Notes

O-1   These tests apply only if there is extended data.

Table 4 lists constraints to be tested on a matching algorithm parameters data object in the ISO/IEC 19794-7:2007 matching algorithm parameters data object of the compact format.

The conformance test assertions are listed in the order in which the corresponding fields, if present, are required to appear in a conforming data record. However, the test assertion groups 3 and 4 may swap places.

Table 4 — ISO/IEC 19794-7:2007 matching algorithm parameters template test assertions

Test	Section	Require-ment ID	Level	Field	Opera-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Result
1	matching algorithm parameters	R-31	1	tag	eq	$B1_{Hex}$		M			
2.1	matching algorithm parameters	R-31	2	length	eq	00_{Hex} to $7f_{Hex}$, 8180_{Hex} to $81ff_{Hex}$, 820100_{Hex} to $82ffff_{Hex}$	1	M			
2.2	matching algorithm parameters	R-31	2	length	eq	number of contents octets		M			
3.1	matching algorithm parameters	R-31	1	chnlDescTag	eq	81_{Hex}		M			
3.2	matching algorithm parameters	R-31	2	chnlDescLength	eq	00_{Hex} to $7f_{Hex}$		M			
3.3	matching algorithm parameters	R-32	1	xIncluded	eq	1_{Bin}		M			
3.4	matching algorithm parameters	R-32	1	yIncluded	eq	1_{Bin}		M			
3.5	matching algorithm parameters	R-32	1	zIncluded	eq	0_{Bin}, 1_{Bin}		M			
3.6	matching algorithm parameters	R-32	1	vXIncluded	eq	0_{Bin}, 1_{Bin}		M			
3.7	matching algorithm parameters	R-32	1	vYIncluded	eq	0_{Bin}, 1_{Bin}		M			
3.8	matching algorithm parameters	R-32	1	aXIncluded	eq	0_{Bin}, 1_{Bin}		M			
3.9	matching algorithm parameters	R-32	1	aYIncluded	eq	0_{Bin}, 1_{Bin}		M			
3.10	matching algorithm parameters	R-32	1	tIncluded	eq	0_{Bin}, 1_{Bin}		M			
3.11	matching algorithm parameters	R-32	1	dtIncluded	eq	0_{Bin}, 1_{Bin}		M			
3.12	matching algorithm parameters	R-32	1	fIncluded	eq	0_{Bin}, 1_{Bin}		M			

Table 4 (*continued*)

Test	Section	Require-ment ID	Level	Field	Opera-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Result
3.13	matching algorithm parameters	R-32	1	sIncluded	eq	0_{Bin}, 1_{Bin}		M			
3.14	matching algorithm parameters	R-32	1	tXIncluded	eq	0_{Bin}, 1_{Bin}		M			
3.15	matching algorithm parameters	R-32	1	tYIncluded	eq	0_{Bin}, 1_{Bin}		M			
3.16	matching algorithm parameters	R-32	1	azIncluded	eq	0_{Bin}, 1_{Bin}		M			
3.17	matching algorithm parameters	R-32	1	elIncluded	eq	0_{Bin}, 1_{Bin}		M			
3.18	matching algorithm parameters	R-32	1	rIncluded	eq	0_{Bin}, 1_{Bin}		M			
3.19.1	X Channel Descriptor	R-33, R-34, R-35	2	xScalingValue-Included	EQ	0_{Bin}, 1_{Bin}		M			
3.19.2	X Channel Descriptor	R-33, R-34, R-35	2	xMinIncluded	EQ	0_{Bin}, 1_{Bin}		M			
3.19.3	X Channel Descriptor	R-33, R-34, R-35	2	xMaxIncluded	EQ	0_{Bin}, 1_{Bin}		M			
3.19.4	X Channel Descriptor	R-33, R-34, R-35	2	xMeanIncluded	EQ	0_{Bin}, 1_{Bin}		M			
3.19.5	X Channel Descriptor	R-33, R-34, R-35	2	xStdIncluded	EQ	0_{Bin}, 1_{Bin}		M			
3.19.6	X Channel Descriptor	R-33, R-34	2	xIsConstant	EQ	0_{Bin}, 1_{Bin}		M			
3.19.7	X Channel Descriptor	R-33, R-34,	2	xLinearComp-Removed	EQ	0_{Bin}, 1_{Bin}		M			
3.19.8	X Channel Descriptor	R-33, R-34	1	reserved	EQ	0_{Bin}		M			
3.19.9	X Channel Descriptor	R-36	2	xScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.19.10	X Channel Descriptor	R-36	2	xScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.19.11	X Channel Descriptor	R-37, R39	2	xMin	EQ	00_{Hex} to ff_{Hex} if present		M			
3.19.12	X Channel Descriptor	R-37, R39	2	xMax	EQ	00_{Hex} to ff_{Hex} if present		M			
3.19.13	X Channel Descriptor	R-40, R-42	2	xMean	EQ	00_{Hex} to ff_{Hex} if present		M			
3.19.14	X Channel Descriptor	R-40, R-41	2	xStd	EQ	00_{Hex} to ff_{Hex} if present		M			
3.20.1	Y Channel Descriptor	R-33, R-34, R-35	2	yScalingValue-Included	EQ	0_{Bin}, 1_{Bin}		M			

Table 4 (*continued*)

Test	Section	Require-ment ID	Level	Field	Opera-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Result
3.20.2	Y Channel Descriptor	R-33, R-34, R-35	2	yMinIncluded	EQ	0_{Bin}, 1_{Bin}		M			
3.20.3	Y Channel Descriptor	R-33, R-34, R-35	2	yMaxIncluded	EQ	0_{Bin}, 1_{Bin}		M			
3.20.4	Y Channel Descriptor	R-33, R-34, R-35	2	yMeanIncluded	EQ	0_{Bin}, 1_{Bin}		M			
3.20.5	Y Channel Descriptor	R-33, R-34, R-35	2	yStdIncluded	EQ	0_{Bin}, 1_{Bin}		M			
3.20.6	Y Channel Descriptor	R-33, R-34	2	yIsConstant	EQ	0_{Bin}, 1_{Bin}		M			
3.20.7	Y Channel Descriptor	R-33, R-34,	2	yLinearComp-Removed	EQ	0_{Bin}, 1_{Bin}		M			
3.20.8	Y Channel Descriptor	R-33, R-34	1	reserved	EQ	0_{Bin}		M			
3.20.9	Y Channel Descriptor	R-36	2	yScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.20.10	Y Channel Descriptor	R-36	2	yScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.20.11	Y Channel Descriptor	R-37, R39	2	yMin	EQ	00_{Hex} to ff_{Hex} if present		M			
3.20.12	Y Channel Descriptor	R-37, R39	2	yMax	EQ	00_{Hex} to ff_{Hex} if present		M			
3.20.13	Y Channel Descriptor	R-40, R-42	2	yMean	EQ	00_{Hex} to ff_{Hex} if present		M			
3.20.14	Y Channel Descriptor	R-40, R-41	2	yStd	EQ	00_{Hex} to ff_{Hex} if present		M			
3.21.1	Z Channel Descriptor	R-33, R-34, R-35	2	zScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.21.2	Z Channel Descriptor	R-33, R-34, R-35	2	zMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.21.3	Z Channel Descriptor	R-33, R-34, R-35	2	zMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.21.4	Z Channel Descriptor	R-33, R-34, R-35	2	zMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.21.5	Z Channel Descriptor	R-33, R-34, R-35	2	zStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.21.6	Z Channel Descriptor	R-33, R-34	2	zIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.21.7	Z Channel Descriptor	R-33, R-34,	2	zLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.21.8	Z Channel Descriptor	R-33, R-34	1	reserved	EQ	0_{Bin} if present		M			
3.21.9	Z Channel Descriptor	R-36	2	zScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			

Table 4 (*continued*)

Test	Section	Require-ment ID	Level	Field	Opera-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Result
3.21.10	Z Channel Descriptor	R-36	2	zScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.21.11	Z Channel Descriptor	R-37, R38	2	zMin	EQ	00_{Hex} to ff_{Hex} if present		M			
3.21.12	Z Channel Descriptor	R-37, R38	2	zMax	EQ	00_{Hex} to ff_{Hex} if present		M			
3.21.13	Z Channel Descriptor	R-40, R-41	2	zMean	EQ	00_{Hex} to ff_{Hex} if present		M			
3.21.14	Z Channel Descriptor	R-40, R-41	2	zStd	EQ	00_{Hex} to ff_{Hex} if present		M			
3.22.1	VX Channel Descriptor	R-33, R-34, R-35	2	vXScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.22.2	VX Channel Descriptor	R-33, R-34, R-35	2	vXMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.22.3	VX Channel Descriptor	R-33, R-34, R-35	2	vXMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.22.4	VX Channel Descriptor	R-33, R-34, R-35	2	vXMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.22.5	VX Channel Descriptor	R-33, R-34, R-35	2	vXStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.22.6	VX Channel Descriptor	R-33, R-34	2	vXIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.22.7	VX Channel Descriptor	R-33, R-34,	2	vXLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.22.8	VX Channel Descriptor	R-33, R-34	1	reserved	EQ	0_{Bin} if present		M			
3.22.9	VX Channel Descriptor	R-36	2	vXScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.22.10	VX Channel Descriptor	R-36	2	vXScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.22.11	VX Channel Descriptor	R-37, R39	2	vXMin	EQ	00_{Hex} to ff_{Hex} if present		M			
3.22.12	VX Channel Descriptor	R-37, R39	2	vXMax	EQ	00_{Hex} to ff_{Hex} if present		M			
3.22.13	VX Channel Descriptor	R-40, R-42	2	vXMean	EQ	00_{Hex} to ff_{Hex} if present		M			
3.22.14	VX Channel Descriptor	R-40, R-41	2	vXStd	EQ	00_{Hex} to ff_{Hex} if present		M			
3.23.1	VY Channel Descriptor	R-33, R-34, R-35	2	vYScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.23.2	VY Channel Descriptor	R-33, R-34, R-35	2	vYMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.23.3	VY Channel Descriptor	R-33, R-34, R-35	2	vYMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			

Table 4 (*continued*)

Test	Section	Require-ment ID	Level	Field	Opera-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Result
3.23.4	VY Channel Descriptor	R-33, R-34, R-35	2	vYMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.23.5	VY Channel Descriptor	R-33, R-34, R-35	2	vYStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.23.6	VY Channel Descriptor	R-33, R-34	2	vYIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.23.7	VY Channel Descriptor	R-33, R-34,	2	vYLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.23.8	VY Channel Descriptor	R-33, R-34	1	reserved	EQ	0_{Bin} if present		M			
3.23.9	VY Channel Descriptor	R-36	2	vYScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.23.10	VY Channel Descriptor	R-36	2	vYScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.23.11	VY Channel Descriptor	R-37, R39	2	vYMin	EQ	00_{Hex} to ff_{Hex} if present		M			
3.23.12	VY Channel Descriptor	R-37, R39	2	vYMax	EQ	00_{Hex} to ff_{Hex} if present		M			
3.23.13	VY Channel Descriptor	R-40, R-42	2	vYMean	EQ	00_{Hex} to ff_{Hex} if present		M			
3.23.14	VY Channel Descriptor	R-40, R-41	2	vYStd	EQ	00_{Hex} to ff_{Hex} if present		M			
3.24.1	AX Channel Descriptor	R-33, R-34, R-35	2	aXScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.24.2	AX Channel Descriptor	R-33, R-34, R-35	2	aXMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.24.3	AX Channel Descriptor	R-33, R-34, R-35	2	aXMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.24.4	AX Channel Descriptor	R-33, R-34, R-35	2	aXMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.24.5	AX Channel Descriptor	R-33, R-34, R-35	2	aXStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.24.6	AX Channel Descriptor	R-33, R-34	2	aXIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.24.7	AX Channel Descriptor	R-33, R-34,	2	aXLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.24.8	AX Channel Descriptor	R-33, R-34	1	reserved	EQ	0_{Bin} if present		M			
3.24.9	AX Channel Descriptor	R-36	2	aXScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.24.10	AX Channel Descriptor	R-36	2	aXScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.24.11	AX Channel Descriptor	R-37, R39	2	aXMin	EQ	00_{Hex} to ff_{Hex} if present		M			
3.24.12	AX Channel Descriptor	R-37, R39	2	aXMax	EQ	00_{Hex} to ff_{Hex} if present		M			

27

Table 4 (*continued*)

Test	Section	Require-ment ID	Level	Field	Opera-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Result
3.24.13	AX Channel Descriptor	R-40, R-42	2	aXMean	EQ	00_{Hex} to ff_{Hex} if present		M			
3.24.14	AX Channel Descriptor	R-40, R-41	2	aXStd	EQ	00_{Hex} to ff_{Hex} if present		M			
3.25.1	AY Channel Descriptor	R-33, R-34, R-35	2	aYScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.25.2	AY Channel Descriptor	R-33, R-34, R-35	2	aYMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.25.3	AY Channel Descriptor	R-33, R-34, R-35	2	aYMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.25.4	AY Channel Descriptor	R-33, R-34, R-35	2	aYMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.25.5	AY Channel Descriptor	R-33, R-34, R-35	2	aYStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.25.6	AY Channel Descriptor	R-33, R-34	2	aYIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.25.7	AY Channel Descriptor	R-33, R-34,	2	aYLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.25.8	AY Channel Descriptor	R-33, R-34	1	reserved	EQ	0_{Bin} if present		M			
3.25.9	AY Channel Descriptor	R-36	2	aYScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.25.10	AY Channel Descriptor	R-36	2	aYScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.25.11	AY Channel Descriptor	R-37, R39	2	aYMin	EQ	00_{Hex} to ff_{Hex} if present		M			
3.25.12	AY Channel Descriptor	R-37, R39	2	aYMax	EQ	00_{Hex} to ff_{Hex} if present		M			
3.25.13	AY Channel Descriptor	R-40, R-42	2	aYMean	EQ	00_{Hex} to ff_{Hex} if present		M			
3.25.14	AY Channel Descriptor	R-40, R-41	2	aYStd	EQ	00_{Hex} to ff_{Hex} if present		M			
3.26.1	T Channel Descriptor	R-33, R-34, R-35	2	tScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.26.2	T Channel Descriptor	R-33, R-34, R-35	2	tMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.26.3	T Channel Descriptor	R-33, R-34, R-35	2	tMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.26.4	T Channel Descriptor	R-33, R-34, R-35	2	tMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.26.5	T Channel Descriptor	R-33, R-34, R-35	2	tStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.26.6	T Channel Descriptor	R-33, R-34	2	tIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			

Table 4 (*continued*)

Test	Section	Require-ment ID	Level	Field	Opera-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Result
3.26.7	T Channel Descriptor	R-33, R-34,	2	tLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.26.8	T Channel Descriptor	R-33, R-34	1	reserved	EQ	0_{Bin} if present		M			
3.26.9	T Channel Descriptor	R-36	2	tScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.26.10	T Channel Descriptor	R-36	2	tScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.26.11	T Channel Descriptor	R-37, R38	2	tMin	EQ	00_{Hex} to ff_{Hex} if present		M			
3.26.12	T Channel Descriptor	R-37, R38	2	tMax	EQ	00_{Hex} to ff_{Hex} if present		M			
3.26.13	T Channel Descriptor	R-40, R-41	2	tMean	EQ	00_{Hex} to ff_{Hex} if present		M			
3.26.14	T Channel Descriptor	R-40, R-41	2	tStd	EQ	00_{Hex} to ff_{Hex} if present		M			
3.27.1	DT Channel Descriptor	R-33, R-34, R-35	2	dTScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.27.2	DT Channel Descriptor	R-33, R-34, R-35	2	dTMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.27.3	DT Channel Descriptor	R-33, R-34, R-35	2	dTMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.27.4	DT Channel Descriptor	R-33, R-34, R-35	2	dTMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.27.5	DT Channel Descriptor	R-33, R-34, R-35	2	dTStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.27.6	DT Channel Descriptor	R-33, R-34	2	dTIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.27.7	DT Channel Descriptor	R-33, R-34,	2	dTLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.27.8	DT Channel Descriptor	R-33, R-34	1	reserved	EQ	0_{Bin} if present		M			
3.27.9	DT Channel Descriptor	R-36	2	dTScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.27.10	DT Channel Descriptor	R-36	2	dTScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.27.11	DT Channel Descriptor	R-37, R38	2	dTMin	EQ	00_{Hex} to ff_{Hex} if present		M			
3.27.12	DT Channel Descriptor	R-37, R38	2	dTMax	EQ	00_{Hex} to ff_{Hex} if present		M			
3.27.13	DT Channel Descriptor	R-40, R-41	2	dTMean	EQ	00_{Hex} to ff_{Hex} if present		M			
3.27.14	DT Channel Descriptor	R-40, R-41	2	dTStd	EQ	00_{Hex} to ff_{Hex} if present		M			
3.28.1	F Channel Descriptor	R-33, R-34, R-35	2	fScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			

Table 4 (*continued*)

Test	Section	Require-ment ID	Level	Field	Opera-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Result
3.28.2	F Channel Descriptor	R-33, R-34, R-35	2	fMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.28.3	F Channel Descriptor	R-33, R-34, R-35	2	fMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.28.4	F Channel Descriptor	R-33, R-34, R-35	2	fMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.28.5	F Channel Descriptor	R-33, R-34, R-35	2	fStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.28.6	F Channel Descriptor	R-33, R-34	2	fIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.28.7	F Channel Descriptor	R-33, R-34,	2	fLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.28.8	F Channel Descriptor	R-33, R-34	1	reserved	EQ	0_{Bin} if present		M			
3.28.9	F Channel Descriptor	R-36	2	fScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.28.10	F Channel Descriptor	R-36	2	fScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.28.11	F Channel Descriptor	R-37, R38	2	fMin	EQ	00_{Hex} to ff_{Hex} if present		M			
3.28.12	F Channel Descriptor	R-37, R38	2	fMax	EQ	00_{Hex} to ff_{Hex} if present		M			
3.28.13	F Channel Descriptor	R-40, R-41	2	fMean	EQ	00_{Hex} to ff_{Hex} if present		M			
3.28.14	F Channel Descriptor	R-40, R-41	2	fStd	EQ	00_{Hex} to ff_{Hex} if present		M			
3.29.1	S Channel Descriptor	R-33, R-34, R-35	2	sScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.29.2	S Channel Descriptor	R-33, R-34, R-35	2	sMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.29.3	S Channel Descriptor	R-33, R-34, R-35	2	sMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.29.4	S Channel Descriptor	R-33, R-34, R-35	2	sMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.29.5	S Channel Descriptor	R-33, R-34, R-35	2	sStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.29.6	S Channel Descriptor	R-33, R-34	2	sIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.29.7	S Channel Descriptor	R-33, R-34,	2	sLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.29.8	S Channel Descriptor	R-33, R-34	1	reserved	EQ	0_{Bin} if present		M			
3.29.9	S Channel Descriptor	R-36	2	sScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			

Table 4 (*continued*)

Test	Section	Require-ment ID	Level	Field	Opera-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Result
3.29.10	S Channel Descriptor	R-36	2	sScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.29.11	S Channel Descriptor	R-37	2	sMin	EQ	00_{Hex} to ff_{Hex} if present		M			
3.29.12	S Channel Descriptor	R-37	2	sMax	EQ	00_{Hex} to ff_{Hex} if present		M			
3.29.13	S Channel Descriptor	R-40	2	sMean	EQ	00_{Hex} to ff_{Hex} if present		M			
3.29.14	S Channel Descriptor	R-40	2	sStd	EQ	00_{Hex} to ff_{Hex} if present		M			
3.30.1	TX Channel Descriptor	R-33, R-34, R-35	2	tXScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.30.2	TX Channel Descriptor	R-33, R-34, R-35	2	tXMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.30.3	TX Channel Descriptor	R-33, R-34, R-35	2	tXMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.30.4	TX Channel Descriptor	R-33, R-34, R-35	2	tXMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.30.5	TX Channel Descriptor	R-33, R-34, R-35	2	tXStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.30.6	TX Channel Descriptor	R-33, R-34	2	tXIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.30.7	TX Channel Descriptor	R-33, R-34,	2	tXLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.30.8	TX Channel Descriptor	R-33, R-34	1	reserved	EQ	0_{Bin} if present		M			
3.30.9	TX Channel Descriptor	R-36	2	tXScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.30.10	TX Channel Descriptor	R-36	2	tXScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.30.11	TX Channel Descriptor	R-37, R39	2	tXMin	EQ	00_{Hex} to ff_{Hex} if present		M			
3.30.12	TX Channel Descriptor	R-37, R39	2	tXMax	EQ	00_{Hex} to ff_{Hex} if present		M			
3.30.13	TX Channel Descriptor	R-40, R-42	2	tXMean	EQ	00_{Hex} to ff_{Hex} if present		M			
3.30.14	TX Channel Descriptor	R-40, R-41	2	tXStd	EQ	00_{Hex} to ff_{Hex} if present		M			
3.31.1	TY Channel Descriptor	R-33, R-34, R-35	2	tYScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.31.2	TY Channel Descriptor	R-33, R-34, R-35	2	tYMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.31.3	TY Channel Descriptor	R-33, R-34, R-35	2	tYMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			

Table 4 (*continued*)

Test	Section	Require-ment ID	Level	Field	Opera-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Result
3.31.4	TY Channel Descriptor	R-33, R-34, R-35	2	tYMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.31.5	TY Channel Descriptor	R-33, R-34, R-35	2	tYStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.31.6	TY Channel Descriptor	R-33, R-34	2	tYIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.31.7	TY Channel Descriptor	R-33, R-34,	2	tYLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.31.8	TY Channel Descriptor	R-33, R-34	1	reserved	EQ	0_{Bin} if present		M			
3.31.9	TY Channel Descriptor	R-36	2	tYScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.31.10	TY Channel Descriptor	R-36	2	tYScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.31.11	TY Channel Descriptor	R-37, R39	2	tYMin	EQ	00_{Hex} to ff_{Hex} if present		M			
3.31.12	TY Channel Descriptor	R-37, R39	2	tYMax	EQ	00_{Hex} to ff_{Hex} if present		M			
3.31.13	TY Channel Descriptor	R-40, R-42	2	tYMean	EQ	00_{Hex} to ff_{Hex} if present		M			
3.31.14	TY Channel Descriptor	R-40, R-41	2	tYStd	EQ	00_{Hex} to ff_{Hex} if present		M			
3.32.1	Az Channel Descriptor	R-33, R-34, R-35	2	azScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.32.2	Az Channel Descriptor	R-33, R-34, R-35	2	azMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.32.3	Az Channel Descriptor	R-33, R-34, R-35	2	azMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.32.4	Az Channel Descriptor	R-33, R-34, R-35	2	azMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.32.5	Az Channel Descriptor	R-33, R-34, R-35	2	azStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.32.6	Az Channel Descriptor	R-33, R-34	2	azIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.32.7	Az Channel Descriptor	R-33, R-34,	2	azLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.32.8	Az Channel Descriptor	R-33, R-34	1	reserved	EQ	0_{Bin} if present		M			
3.32.9	Az Channel Descriptor	R-36	2	azScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.32.10	Az Channel Descriptor	R-36	2	azScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.32.11	Az Channel Descriptor	R-37, R38	2	azMin	EQ	00_{Hex} to ff_{Hex} if present		M			
3.32.12	Az Channel Descriptor	R-37, R38	2	azMax	EQ	00_{Hex} to ff_{Hex} if present		M			

Table 4 (*continued*)

Test	Section	Require-ment ID	Level	Field	Opera-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Result
3.32.13	Az Channel Descriptor	R-40, R-41	2	azMean	EQ	00_{Hex} to ff_{Hex} if present		M			
3.32.14	Az Channel Descriptor	R-40, R-41	2	azStd	EQ	00_{Hex} to ff_{Hex} if present		M			
3.33.1	El Channel Descriptor	R-33, R-34, R-35	2	elScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.33.2	El Channel Descriptor	R-33, R-34, R-35	2	elMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.33.3	El Channel Descriptor	R-33, R-34, R-35	2	elMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.33.4	El Channel Descriptor	R-33, R-34, R-35	2	elMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.33.5	El Channel Descriptor	R-33, R-34, R-35	2	elStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.33.6	El Channel Descriptor	R-33, R-34	2	elIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			
3.33.7	El Channel Descriptor	R-33, R-34,	2	elLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.33.8	El Channel Descriptor	R-33, R-34	1	reserved	EQ	0_{Bin} if present		M			
3.33.9	El Channel Descriptor	R-36	2	elScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.33.10	El Channel Descriptor	R-36	2	elScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.33.11	El Channel Descriptor	R-37, R38	2	elMin	EQ	00_{Hex} to ff_{Hex} if present		M			
3.33.12	El Channel Descriptor	R-37, R38	2	elMax	EQ	00_{Hex} to ff_{Hex} if present		M			
3.33.13	El Channel Descriptor	R-40, R-41	2	elMean	EQ	00_{Hex} to ff_{Hex} if present		M			
3.33.14	El Channel Descriptor	R-40, R-41	2	elStd	EQ	00_{Hex} to ff_{Hex} if present		M			
3.34.1	R Channel Descriptor	R-33, R-34, R-35	2	rScalingValue-Included	EQ	0_{Bin}, 1_{Bin} if present		M			
3.34.2	R Channel Descriptor	R-33, R-34, R-35	2	rMinIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.34.3	R Channel Descriptor	R-33, R-34, R-35	2	rMaxIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.34.4	R Channel Descriptor	R-33, R-34, R-35	2	rMeanIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.34.5	R Channel Descriptor	R-33, R-34, R-35	2	rStdIncluded	EQ	0_{Bin}, 1_{Bin} if present		M			
3.34.6	R Channel Descriptor	R-33, R-34	2	rIsConstant	EQ	0_{Bin}, 1_{Bin} if present		M			

Table 4 (*continued*)

Test	Section	Require-ment ID	Level	Field	Opera-tor	Operands	Test Note	Status	IUT Sup-port	Sup-ported Range	Test Result
3.34.7	R Channel Descriptor	R-33, R-34,	2	rLinearComp-Removed	EQ	0_{Bin}, 1_{Bin} if present		M			
3.34.8	R Channel Descriptor	R-33, R-34	1	reserved	EQ	0_{Bin} if present		M			
3.34.9	R Channel Descriptor	R-36	2	rScalingValue-Exponent	EQ	00_{Hex} to $1f_{Hex}$ if present		M			
3.34.10	R Channel Descriptor	R-36	2	rScalingValue-Fraction	EQ	000_{Hex} to $7ff_{Hex}$ if present		M			
3.34.11	R Channel Descriptor	R-37, R38	2	rMin	EQ	00_{Hex} to ff_{Hex} if present		M			
3.34.12	R Channel Descriptor	R-37, R38	2	rMax	EQ	00_{Hex} to ff_{Hex} if present		M			
3.34.13	R Channel Descriptor	R-40, R-41	2	rMean	EQ	00_{Hex} to ff_{Hex} if present		M			
3.34.14	R Channel Descriptor	R-40, R-41	2	rStd	EQ	00_{Hex} to ff_{Hex} if present		M			
4.1	matching algorithm parameters	R-33, R-34, R-35	2	maxNumOf-SampPtsTag	eq	82_{Hex}		M			
4.2	matching algorithm parameters	R-33, R-34, R-35	2	maxNumOf-SampPtsLength	eq	00_{Hex} to $7f_{Hex}$		M			
4.3	matching algorithm parameters	R-33, R-34, R-35	2	maxNumOf-SampPts	eq	00_{Hex} to $28^{127} - 1$		M			

Test Notes

1   The length shall be encoded following the Distinguished Encoding Rules of ASN.1 defined in ISO/IEC 8825-1.

ICS 35.040

Price based on 34 pages