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G.994.1

Corrigendum 1

(04/2000)

SERIES G: TRANSMISSION SYSTEMS AND MEDIA, DIGITAL SYSTEMS AND NETWORKS

Digital sections and digital line system – Access networks

Handshake procedures for digital subscriber line (DSL) transceivers

Corrigendum 1

ITU-T Recommendation G.994.1 – Corrigendum 1

(Formerly CCITT Recommendation)

ITU-T G-SERIES RECOMMENDATIONS

TRANSMISSION SYSTEMS AND MEDIA, DIGITAL SYSTEMS AND NETWORKS

INTERNATIONAL TELEPHONE CONNECTIONS AND CIRCUITS	G.100–G.199
GENERAL CHARACTERISTICS COMMON TO ALL ANALOGUE CARRIER-TRANSMISSION SYSTEMS	G.200–G.299
INDIVIDUAL CHARACTERISTICS OF INTERNATIONAL CARRIER TELEPHONE SYSTEMS ON METALLIC LINES	G.300–G.399
GENERAL CHARACTERISTICS OF INTERNATIONAL CARRIER TELEPHONE SYSTEMS ON RADIO-RELAY OR SATELLITE LINKS AND INTERCONNECTION WITH METALLIC LINES	G.400–G.449
COORDINATION OF RADIOTELEPHONY AND LINE TELEPHONY	G.450–G.499
TESTING EQUIPMENTS	G.500–G.599
TRANSMISSION MEDIA CHARACTERISTICS	G.600–G.699
DIGITAL TERMINAL EQUIPMENTS	G.700–G.799
DIGITAL NETWORKS	G.800–G.899
DIGITAL SECTIONS AND DIGITAL LINE SYSTEM	G.900–G.999
General	G.900–G.909
Parameters for optical fibre cable systems	G.910–G.919
Digital sections at hierarchical bit rates based on a bit rate of 2048 kbit/s	G.920–G.929
Digital line transmission systems on cable at non-hierarchical bit rates	G.930–G.939
Digital line systems provided by FDM transmission bearers	G.940–G.949
Digital line systems	G.950–G.959
Digital section and digital transmission systems for customer access to ISDN	G.960–G.969
Optical fibre submarine cable systems	G.970–G.979
Optical line systems for local and access networks	G.980–G.989
Access networks	**G.990–G.999**

For further details, please refer to the list of ITU-T Recommendations.

ITU-T Recommendation G.994.1

Handshake procedures for digital subscriber line (DSL) transceivers

CORRIGENDUM 1

Summary

This corrigendum is intended to clarify the code point table numbering for Tables 9 and 11 of Recommendation G.994.1.

Source

Corrigendum 1 to ITU-T Recommendation G.994.1 was prepared by ITU-T Study Group 15 (1997-2000) and approved under the WTSC Resolution 1 procedure on 4 April 2000.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSC Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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As of the date of approval of this Recommendation, ITU had received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

ITU-T Recommendation G.994.1

Handshake procedures for digital subscriber line (DSL) transceivers

CORRIGENDUM 1

1) Rules for code point numbering for Tables 9 and 11

Rules for code point Table numbering

Digit position	Used for				
1 e.g. 10	**Npar(1)**	**Spar(1)**			
2 e.g. 10.1	**Npar(1) extensions**		**Npar(2)**	**Spar(2)**	
3 e.g. 10.1.1		**Spar(1) extensions**	**Npar(2) extensions**		**Npar(3)**
4 e.g. 10.1.1.1				**Spar(2) extensions**	**Npar(3) extensions**

a) Table 9

Table 9-1/G.994.1 – Identification field – Net data rate upstream NPar(2) coding – Octet 1

Bits 8	7	6	5	4	3	2	1	**Net data rate upstream NPar(2)s**
x	x	1	1	1	1	1	1	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	Unspecified by terminal
x	x	1	x	x	x	x	x	Maximum net data rate upstream (bits 5-1 × 2 Mbit/s)
x	x	0	x	x	x	x	x	Maximum net data rate upstream (bits 5-1 × 64 kbit/s)

Table 9-1.1/G.994.1 – Identification field – Net data rate upstream NPar(2) coding – Octet 2

Bits 8	7	6	5	4	3	2	1	**Net data rate upstream NPar(2)s**
x	x	1	1	1	1	1	1	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	Unspecified by terminal
x	x	1	x	x	x	x	x	Minimum net data rate upstream (bits 5-1 × 2 Mbit/s)
x	x	0	x	x	x	x	x	Minimum net data rate upstream (bits 5-1 × 64 kbit/s)

Table 9-1.2/G.994.1 – Identification field – Net data rate upstream NPar(2) coding – Octet 3

Bits 8	7	6	5	4	3	2	1	**Net data rate upstream NPar(2)s**
x	x	1	1	1	1	1	1	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	Unspecified by terminal
x	x	1	x	x	x	x	x	Average net data rate upstream (bits 5-1 × 2 Mbit/s)
x	x	0	x	x	x	x	x	Average net data rate upstream (bits 5-1 × 64 kbit/s)

Table 9-2/G.994.1 – Identification field – Net data rate downstream NPar(2) coding – Octet 1

Bits 8	7	6	5	4	3	2	1	**Net data rate downstream NPar(2)s**
x	x	1	1	1	1	1	1	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	Unspecified by terminal
x	x	1	x	x	x	x	x	Maximum net data rate downstream (bits 5-1 × 2 Mbit/s)
x	x	0	x	x	x	x	x	Maximum net data rate downstream (bits 5-1 × 64 kbit/s)

Table 9-2.1/G.994.1 – Identification field – Net data rate downstream NPar(2) coding – Octet 2

Bits 8	7	6	5	4	3	2	1	**Net data rate downstream NPar(2)s**
x	x	1	1	1	1	1	1	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	Unspecified by terminal
x	x	1	x	x	x	x	x	Maximum net data rate downstream (bits 5-1 × 2 Mbit/s)
x	x	0	x	x	x	x	x	Maximum net data rate downstream (bits 5-1 × 64 kbit/s)

Table 9-2.2/G.994.1 – Identification field – Net data rate downstream NPar(2) coding – Octet 3

Bits 8	7	6	5	4	3	2	1	**Net data rate downstream NPar(2)s**
x	x	1	1	1	1	1	1	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	Unspecified by terminal
x	x	1	x	x	x	x	x	Average net data rate downstream (bits 5-1 × 2 Mbit/s)
x	x	0	x	x	x	x	x	Average net data rate downstream (bits 5-1 × 64 kbit/s)

Table 9-3/G.994.1 – Identification field – Data flow characteristics upstream NPar(2) coding – Octet 1

Bits 8	7	6	5	4	3	2	1	**Data flow characteristics upstream NPar(2)s**
x	x	1	1	1	1	1	1	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	Unspecified by terminal
x	x	0	x	x	x	x	x	Maximum latency upstream (bits 5 to 1) × 1 ms
x	x	1	x	x	x	x	x	Maximum latency upstream (4 + bits 5 to 1) × 10 ms

Table 9-3.1/G.994.1 – Identification field – Data flow characteristics upstream NPar(2) coding – Octet 2

Bits 8	7	6	5	4	3	2	1	**Data flow characteristics upstream Npar(2)s**
x	x	1	1	1	1	1	1	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	Unspecified by terminal
x	x	0	x	x	x	x	x	Average latency upstream (bits 5 to 1) × 1 ms
x	x	1	x	x	x	x	x	Average latency upstream (4 + bits 5 to 1) × 10 ms

Table 9-4/G.994.1 – Identification field – Data flow characteristics downstream NPar(2) coding – Octet 1

Bits 8	7	6	5	4	3	2	1	**Data flow characteristics downstream NPar(2)s**
x	x	1	1	1	1	1	1	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	Unspecified by terminal
x	x	0	x	x	x	x	x	Maximum latency downstream (bits 5 to 1) × 1 ms
x	x	1	x	x	x	x	x	Maximum latency downstream (4 + bits 5 to 1) × 10 ms

Table 9-4.1/G.994.1 – Identification field – Data flow characteristics downstream NPar(2) coding – Octet 2

Bits 8	7	6	5	4	3	2	1	**Data flow characteristics downstream NPar(2)s**
x	x	1	1	1	1	1	1	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	Unspecified by terminal
x	x	0	x	x	x	x	x	Average latency downstream (bits 5 to 1) × 1 ms
x	x	1	x	x	x	x	x	Average latency downstream (4 + bits 5 to 1) × 10 ms

Table 9-5/G.994.1 – Identification field – xTU-R splitter information NPar(2) coding

Bits 8	7	6	5	4	3	2	1	**xTU-R splitter information NPar(2)s**
x	x	x	x	x	x	x	1	LPF is voice
x	x	x	x	x	x	1	x	LPF is USA ISDN
x	x	x	x	x	1	x	x	LPF is European ISDN
x	x	x	x	1	x	x	x	Reserved for allocation by the ITU-T
x	x	x	1	x	x	x	x	Reserved for allocation by the ITU-T
x	x	1	x	x	x	x	x	Non-standard LPF
x	x	0	0	0	0	0	0	No parameters in this octet

Table 9-6/G.994.1 – Identification field – xTU-C splitter information NPar(2) coding

Bits 8	7	6	5	4	3	2	1	**xTU-C splitter information NPar(2)s**
x	x	x	x	x	x	x	1	HPF is 25 kHz (voice)
x	x	x	x	x	x	1	x	HPF is 90 kHz USA ISDN
x	x	x	x	x	1	x	x	HPF is 150 kHz (ADSL with European ISDN)
x	x	x	x	1	x	x	x	HPF is 300 kHz (VDSL)
x	x	x	1	x	x	x	x	Reserved for allocation by the ITU-T
x	x	1	x	x	x	x	x	Non-standard HPF
x	x	0	0	0	0	0	0	No parameters in this octet

b) Table 11

Table 11-1/G.994.1 – Standard information field – G.992.1 Annex A NPar(2) coding

Bits 8	7	6	5	4	3	2	1	**G.992.1 Annex A NPar(2)s**
x	x	x	x	x	x	x	1	R-ACK1
x	x	x	x	x	x	1	x	R-ACK2
x	x	x	x	x	1	x	x	Reserved for allocation by the ITU-T
x	x	x	x	1	x	x	x	STM
x	x	x	1	x	x	x	x	ATM
x	x	1	x	x	x	x	x	G.997.1 – Clear EOC OAM
x	x	0	0	0	0	0	0	No parameters in this octet

Table 11-2/G.994.1 – Standard information field – G.992.1 Annex A SPar(2) coding

Bits 8	7	6	5	4	3	2	1	G.992.1 Annex A SPar(2)s
x	x	x	x	x	x	x	1	Sub-channel information
x	x	x	x	x	x	1	x	Spectrum frequency upstream
x	x	x	x	x	1	x	x	Spectrum frequency downstream
x	x	x	x	1	x	x	x	Reserved for allocation by the ITU-T
x	x	x	1	x	x	x	x	Reserved for allocation by the ITU-T
x	x	1	x	x	x	x	x	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	No parameters in this octet

Table 11-2.1/G.994.1 – Standard information field – G.992.1 Annex A Sub-channel information NPar(3) coding – Octet 1

Bits 8	7	6	5	4	3	2	1	G.992.1 Annex A Sub-channel information NPar(3)s – Octet 1
x	x	x	x	x	x	x	1	AS0 downstream
x	x	x	x	x	x	1	x	AS1 downstream
x	x	x	x	x	1	x	x	AS2 downstream
x	x	x	x	1	x	x	x	AS3 downstream
x	x	x	1	x	x	x	x	LS0 downstream
x	x	1	x	x	x	x	x	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	No parameters in this octet

Table 11-2.1.1/G.994.1 – Standard information field – G.992.1 Annex A Sub-channel information NPar(3) coding – Octet 2

Bits 8	7	6	5	4	3	2	1	G.992.1 Annex A Sub-channel information NPar(3)s – Octet 2
x	x	x	x	x	x	x	1	LS1 downstream
x	x	x	x	x	x	1	x	LS2 downstream
x	x	x	x	x	1	x	x	LS0 upstream
x	x	x	x	1	x	x	x	LS1 upstream
x	x	x	1	x	x	x	x	LS2 upstream
x	x	1	x	x	x	x	x	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	No parameters in this octet

Table 11-2.2/G.994.1 – Standard information field – G.992.1 Annex A Spectrum frequency upstream NPar(3) coding – Octet 1

Bits 8	7	6	5	4	3	2	1	G.992.1 Annex A Spectrum frequency upstream NPar(3)s – Octet 1
x	x	0	0	0	0	x	x	Spectrum minimum frequency upstream (bits 7 and 8)

Table 11-2.2.1/G.994.1 – Standard information field – G.992.1 Annex A Spectrum frequency upstream NPar(3) coding – Octet 2

Bits								G.992.1 Annex A Spectrum frequency upstream NPar(3)s – Octet 2
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	x	Spectrum minimum frequency upstream (bits 1 to 6)

Table 11-2.2.2/G.994.1 – Standard information field – G.992.1 Annex A Spectrum frequency upstream NPar(3) coding – Octet 3

Bits								G.992.1 Annex A Spectrum frequency upstream NPar(3)s – Octet 3
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	x	x	Spectrum maximum frequency upstream (bits 7 and 8)

Table 11-2.2.3/G.994.1 – Standard information field – G.992.1 Annex A Spectrum frequency upstream NPar(3) coding – Octet 4

Bits								G.992.1 Annex A Spectrum frequency upstream NPar(3)s – Octet 4
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	x	Spectrum maximum frequency upstream (bits 1 to 6)

Table 11-2.3/G.994.1 – Standard information field – G.992.1 Annex A Spectrum frequency downstream NPar(3) coding – Octet 1

Bits								G.992.1 Annex A Spectrum frequency downstream NPar(3)s – Octet 1
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	x	x	Spectrum minimum frequency downstream (bits 7 and 8)

Table 11-2.3.1/G.994.1 – Standard information field – G.992.1 Annex A Spectrum frequency downstream NPar(3) coding – Octet 2

Bits								G.992.1 Annex A Spectrum frequency downstream NPar(3)s – Octet 2
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	x	Spectrum minimum frequency downstream (bits 1 to 6)

Table 11-2.3.2/G.994.1 – Standard information field – G.992.1 Annex A Spectrum frequency downstream NPar(3) coding – Octet 3

Bits								G.992.1 Annex A Spectrum frequency downstream NPar(3)s – Octet 3
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	x	x	Spectrum maximum frequency downstream (bits 7 and 8)

Table 11-2.3.3/G.994.1 – Standard information field – G.992.1 Annex A Spectrum frequency downstream NPar(3) coding – Octet 4

Bits								G.992.1 Annex A Spectrum frequency downstream NPar(3)s – Octet 4
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	x	Spectrum maximum frequency downstream (bits 1 to 6)

Table 11-3/G.994.1 – Standard information field – G.992.1 Annex B NPar(2) coding

Bits								G.992.1 Annex B NPar(2)s
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	1	R-ACK1
x	x	x	x	x	x	1	x	R-ACK2
x	x	x	x	x	1	x	x	Upstream tones 1 to 32
x	x	x	x	1	x	x	x	STM
x	x	x	1	x	x	x	x	ATM
x	x	1	x	x	x	x	x	G.997.1 – Clear EOC OAM
x	x	0	0	0	0	0	0	No parameters in this octet

Table 11-4/G.994.1 – Standard information field – G.992.1 Annex B SPar(2) coding

Bits								G.992.1 Annex B SPar(2)s
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	1	Sub-channel information
x	x	x	x	x	x	1	x	Spectrum frequency upstream
x	x	x	x	x	1	x	x	Spectrum frequency downstream
x	x	x	x	1	x	x	x	Reserved for allocation by the ITU-T
x	x	x	1	x	x	x	x	Reserved for allocation by the ITU-T
x	x	1	x	x	x	x	x	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	No parameters in this octet

Table 11-4.1/G.994.1 – Standard information field – G.992.1 Annex B Sub-channel information NPar(3) coding – Octet 1

Bits								G.992.1 Annex B Sub-channel information NPar(3)s – Octet 1
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	1	AS0 downstream
x	x	x	x	x	x	1	x	AS1 downstream
x	x	x	x	x	1	x	x	AS2 downstream
x	x	x	x	1	x	x	x	AS3 downstream
x	x	x	1	x	x	x	x	LS0 downstream
x	x	1	x	x	x	x	x	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	No parameters in this octet

Table 11-4.1.1/G.994.1 – Standard information field – G.992.1 Annex B Sub-channel information NPar(3) coding – Octet 2

Bits 8	7	6	5	4	3	2	1	G.992.1 Annex B Sub-channel information NPar(3)s – Octet 2
x	x	x	x	x	x	x	1	LS1 downstream
x	x	x	x	x	x	1	x	LS2 downstream
x	x	x	x	x	1	x	x	LS0 upstream
x	x	x	x	1	x	x	x	LS1 upstream
x	x	x	1	x	x	x	x	LS2 upstream
x	x	1	x	x	x	x	x	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	No parameters in this octet

Table 11-4.2/G.994.1 – Standard information field – G.992.1 Annex B Spectrum frequency upstream NPar(3) coding – Octet 1

Bits 8	7	6	5	4	3	2	1	G.992.1 Annex B Spectrum frequency upstream NPar(3)s – Octet 1
x	x	0	0	0	0	x	x	Spectrum minimum frequency upstream (bits 7 and 8)

Table 11-4.2.1/G.994.1 – Standard information field – G.992.1 Annex B Spectrum frequency upstream NPar(3) coding – Octet 2

Bits 8	7	6	5	4	3	2	1	G.992.1 Annex B Spectrum frequency upstream NPar(3)s – Octet 2
x	x	x	x	x	x	x	x	Spectrum minimum frequency upstream (bits 1 to 6)

Table 11-4.2.2/G.994.1 – Standard information field – G.992.1 Annex B Spectrum frequency upstream NPar(3) coding – Octet 3

Bits 8	7	6	5	4	3	2	1	G.992.1 Annex B Spectrum frequency upstream NPar(3)s – Octet 3
x	x	0	0	0	0	x	x	Spectrum maximum frequency upstream (bits 7 and 8)

Table 11-4.2.3/G.994.1 – Standard information field – G.992.1 Annex B Spectrum frequency upstream NPar(3) coding – Octet 4

Bits 8	7	6	5	4	3	2	1	G.992.1 Annex B Spectrum frequency upstream NPar(3)s – Octet 4
x	x	x	x	x	x	x	x	Spectrum maximum frequency upstream (bits 1 to 6)

Table 11-4.3/G.994.1 – Standard information field – G.992.1 Annex B Spectrum frequency downstream NPar(3) coding – Octet 1

Bits								G.992.1 Annex B Spectrum frequency downstream NPar(3)s – Octet 1
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	x	x	Spectrum minimum frequency downstream (bits 7 and 8)

Table 11-4.3.1/G.994.1 – Standard information field – G.992.1 Annex B Spectrum frequency downstream NPar(3) coding – Octet 2

Bits								G.992.1 Annex B Spectrum frequency downstream NPar(3)s – Octet 2
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	x	Spectrum minimum frequency downstream (bits 1 to 6)

Table 11-4.3.2/G.994.1 – Standard information field – G.992.1 Annex B Spectrum frequency downstream NPar(3) coding – Octet 3

Bits								G.992.1 Annex B Spectrum frequency downstream NPar(3)s – Octet 3
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	x	x	Spectrum maximum frequency downstream (bits 7 and 8)

Table 11-4.3.3/G.994.1 – Standard information field – G.992.1 Annex B Spectrum frequency downstream NPar(3) coding – Octet 4

Bits								G.992.1 Annex B Spectrum frequency downstream NPar(3)s – Octet 4
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	x	Spectrum maximum frequency downstream (bits 1 to 6)

Table 11-5/G.994.1 – Standard information field – G.992.1 Annex C NPar(2) coding

Bits								G.992.1 Annex C NPar(2)s
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	1	R-ACK1
x	x	x	x	x	x	1	x	R-ACK2
x	x	x	x	x	1	x	x	DBM
x	x	x	x	1	x	x	x	STM
x	x	x	1	x	x	x	x	ATM
x	x	1	x	x	x	x	x	G.997.1 – Clear EOC OAM
x	x	0	0	0	0	0	0	No parameters in this octet

Table 11-6/G.994.1 – Standard information field – G.992.1 Annex C SPar(2) coding

Bits 8	7	6	5	4	3	2	1	G.992.1 Annex C SPar(2)s
x	x	x	x	x	x	x	1	Sub-channel information
x	x	x	x	x	x	1	x	Spectrum frequency upstream
x	x	x	x	x	1	x	x	Spectrum frequency downstream
x	x	x	x	1	x	x	x	Reserved for allocation by the ITU-T
x	x	x	1	x	x	x	x	Reserved for allocation by the ITU-T
x	x	1	x	x	x	x	x	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	No parameters in this octet

Table 11-6.1/G.994.1 – Standard information field – G.992.1 Annex C Sub-channel information NPar(3) coding – Octet 1

Bits 8	7	6	5	4	3	2	1	G.992.1 Annex C Sub-channel information NPar(3)s – Octet 1
x	x	x	x	x	x	x	1	AS0 downstream
x	x	x	x	x	x	1	x	AS1 downstream
x	x	x	x	x	1	x	x	AS2 downstream
x	x	x	x	1	x	x	x	AS3 downstream
x	x	x	1	x	x	x	x	LS0 downstream
x	x	1	x	x	x	x	x	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	No parameters in this octet

Table 11-6.1.1/G.994.1 – Standard information field – G.992.1 Annex C Sub-channel information NPar(3) coding – Octet 2

Bits 8	7	6	5	4	3	2	1	G.992.1 Annex C Sub-channel information NPar(3)s – Octet 2
x	x	x	x	x	x	x	1	LS1 downstream
x	x	x	x	x	x	1	x	LS2 downstream
x	x	x	x	x	1	x	x	LS0 upstream
x	x	x	x	1	x	x	x	LS1 upstream
x	x	x	1	x	x	x	x	LS2 upstream
x	x	1	x	x	x	x	x	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	No parameters in this octet

Table 11-6.2/G.994.1 – Standard information field – G.992.1 Annex C Spectrum frequency upstream NPar(3) coding – Octet 1

Bits 8	7	6	5	4	3	2	1	G.992.1 Annex C Spectrum frequency upstream NPar(3)s – Octet 1
x	x	0	0	0	0	x	x	Spectrum minimum frequency upstream (bits 7 and 8)

Table 11-6.2.1/G.994.1 – Standard information field – G.992.1 Annex C Spectrum frequency upstream NPar(3) coding – Octet 2

Bits								G.992.1 Annex C Spectrum frequency upstream NPar(3)s – Octet 2
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	x	Spectrum minimum frequency upstream (bits 1 to 6)

Table 11-6.2.2/G.994.1 – Standard information field – G.992.1 Annex C Spectrum frequency upstream NPar(3) coding – Octet 3

Bits								G.992.1 Annex C Spectrum frequency upstream NPar(3)s – Octet 3
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	x	x	Spectrum maximum frequency upstream (bits 7 and 8)

Table 11-6.2.3/G.994.1 – Standard information field – G.992.1 Annex C Spectrum frequency upstream NPar(3) coding – Octet 4

Bits								G.992.1 Annex C Spectrum frequency upstream NPar(3)s – Octet 4
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	x	Spectrum maximum frequency upstream (bits 1 to 6)

Table 11-6.3/G.994.1 – Standard information field – G.992.1 Annex C Spectrum frequency downstream NPar(3) coding – Octet 1

Bits								G.992.1 Annex C Spectrum frequency downstream NPar(3)s – Octet 1
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	x	x	Spectrum minimum frequency downstream (bits 7 and 8)

Table 11-6.3.1/G.994.1 – Standard information field – G.992.1 Annex C Spectrum frequency downstream NPar(3) coding – Octet 2

Bits								G.992.1 Annex C Spectrum frequency downstream NPar(3)s – Octet 2
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	x	Spectrum minimum frequency downstream (bits 1 to 6)

Table 11-6.3.2/G.994.1 – Standard information field – G.992.1 Annex C Spectrum frequency downstream NPar(3) coding – Octet 3

Bits								G.992.1 Annex C Spectrum frequency downstream NPar(3)s – Octet 3
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	x	x	Spectrum maximum frequency downstream (bits 7 and 8)

Table 11-6.3.3/G.994.1 – Standard information field – G.992.1 Annex C Spectrum frequency downstream NPar(3) coding – Octet 4

Bits 8	7	6	5	4	3	2	1	G.992.1 Annex C Spectrum frequency downstream NPar(3)s – Octet 4
x	x	x	x	x	x	x	x	Spectrum maximum frequency downstream (bits 1 to 6)

Table 11-7/G.994.1 – Standard information field – G.992.2 Annexes A/B NPar(2) coding

Bits 8	7	6	5	4	3	2	1	G.992.2 Annexes A/B NPar(2)s
x	x	x	x	x	x	x	1	R-ACK1
x	x	x	x	x	x	1	x	R-ACK2
x	x	x	x	x	1	x	x	Reserved for allocation by the ITU-T
x	x	x	x	1	x	x	x	Fast retrain
x	x	x	1	x	x	x	x	RS16
x	x	1	x	x	x	x	x	G.997.1 – Clear EOC OAM
x	x	0	0	0	0	0	0	No parameters in this octet

Table 11-8/G.994.1 – Standard information field – G.992.2 Annexes A/B SPar(2) coding

Bits 8	7	6	5	4	3	2	1	G.992.2 Annexes A/B SPar(2)s
x	x	x	x	x	x	x	1	Reserved for allocation by the ITU-T
x	x	x	x	x	x	1	x	Spectrum frequency upstream
x	x	x	x	x	1	x	x	Spectrum frequency downstream
x	x	x	x	1	x	x	x	Reserved for allocation by the ITU-T
x	x	x	1	x	x	x	x	Reserved for allocation by the ITU-T
x	x	1	x	x	x	x	x	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	No parameters in this octet

Table 11-8.2/G.994.1 – Standard information field – G.992.2 Annexes A/B Spectrum frequency upstream NPar(3) coding – Octet 1

Bits 8	7	6	5	4	3	2	1	G.992.2 Annexes A/B Spectrum frequency upstream NPar(3)s – Octet 1
x	x	0	0	0	0	x	x	Spectrum minimum frequency upstream (bits 7 and 8)

Table 11-8.2.1/G.994.1 – Standard information field – G.992.2 Annexes A/B Spectrum frequency upstream NPar(3) coding – Octet 2

Bits 8	7	6	5	4	3	2	1	G.992.2 Annexes A/B Spectrum frequency upstream NPar(3)s – Octet 2
x	x	x	x	x	x	x	x	Spectrum minimum frequency upstream (bits 1 to 6)

Table 11-8.2.2/G.994.1 – Standard information field – G.992.2 Annexes A/B Spectrum frequency upstream NPar(3) coding – Octet 3

Bits								G.992.2 Annexes A/B Spectrum frequency upstream NPar(3)s – Octet 3
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	x	x	spectrum maximum frequency upstream (bits 7 and 8)

Table 11-8.2.3/G.994.1 – Standard information field – G.992.2 Annexes A/B Spectrum frequency upstream NPar(3) coding – Octet 4

Bits								G.992.2 Annexes A/B Spectrum frequency upstream NPar(3)s – Octet 4
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	x	Spectrum maximum frequency upstream (bits 1 to 6)

Table 11-8.3/G.994.1 – Standard information field – G.992.2 Annexes A/B Spectrum frequency downstream NPar(3) coding – Octet 1

Bits								G.992.2 Annexes A/B Spectrum frequency downstream NPar(3)s – Octet 1
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	x	x	Spectrum minimum frequency downstream (bits 7 and 8)

Table 11-8.3.1/G.994.1 – Standard information field – G.992.2 Annexes A/B Spectrum frequency downstream NPar(3) coding – Octet 2

Bits								G.992.2 Annexes A/B Spectrum frequency downstream NPar(3)s – Octet 2
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	x	Spectrum minimum frequency downstream (bits 1 to 6)

Table 11-8.3.2/G.994.1 – Standard information field – G.992.2 Annexes A/B Spectrum frequency downstream NPar(3) coding – Octet 3

Bits								G.992.2 Annexes A/B Spectrum frequency downstream NPar(3)s – Octet 3
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	x	x	Spectrum maximum frequency downstream (bits 7 and 8)

Table 11-8.3.3/G.994.1 – Standard information field – G.992.2 Annexes A/B Spectrum frequency downstream NPar(3) coding – Octet 4

Bits								G.992.2 Annexes A/B Spectrum frequency downstream NPar(3)s – Octet 4
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	x	Spectrum maximum frequency downstream (bits 1 to 6)

Table 11-9/G.994.1 – Standard information field – G.992.2 Annex C NPar(2) coding

Bits 8	7	6	5	4	3	2	1	G.992.2 Annex C NPar(2)s
x	x	x	x	x	x	x	1	R-ACK1
x	x	x	x	x	x	1	x	R-ACK2
x	x	x	x	x	1	x	x	DBM
x	x	x	x	1	x	x	x	Fast retrain
x	x	x	1	x	x	x	x	RS16
x	x	1	x	x	x	x	x	G.997.1 – Clear EOC OAM
x	x	0	0	0	0	0	0	No parameters in this octet

Table 11-10/G.994.1 – Standard information field – G.992.2 Annex C SPar(2) coding

Bits 8	7	6	5	4	3	2	1	G.992.2 Annex C SPar(2)s
x	x	x	x	x	x	x	1	Reserved for allocation by the ITU-T
x	x	x	x	x	x	1	x	Spectrum frequency upstream
x	x	x	x	x	1	x	x	Spectrum frequency downstream
x	x	x	x	1	x	x	x	Reserved for allocation by the ITU-T
x	x	x	1	x	x	x	x	Reserved for allocation by the ITU-T
x	x	1	x	x	x	x	x	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	No parameters in this octet

Table 11-10.2/G.994.1 – Standard information field – G.992.2 Annex C Spectrum frequency upstream NPar(3) coding – Octet 1

Bits 8	7	6	5	4	3	2	1	G.992.2 Annex C Spectrum frequency upstream NPar(3)s – Octet 1
x	x	0	0	0	0	x	x	Spectrum minimum frequency upstream (bits 7 and 8)

Table 11-10.2.1/G.994.1 – Standard information field – G.992.2 Annex C Spectrum frequency upstream NPar(3) coding – Octet 2

Bits 8	7	6	5	4	3	2	1	G.992.2 Annex C Spectrum frequency upstream NPar(3)s – Octet 2
x	x	x	x	x	x	x	x	Spectrum minimum frequency upstream (bits 1 to 6)

Table 11-10.2.2/G.994.1 – Standard information field – G.992.2 Annex C Spectrum frequency upstream NPar(3) coding – Octet 3

Bits 8	7	6	5	4	3	2	1	G.992.2 Annex C Spectrum frequency upstream NPar(3)s – Octet 3
x	x	0	0	0	0	x	x	Spectrum maximum frequency upstream (bits 7 and 8)

Table 11-10.2.3/G.994.1 – Standard information field – G.992.2 Annex C
Spectrum frequency upstream NPar(3) coding – Octet 4

Bits								G.992.2 Annex C Spectrum frequency upstream NPar(3)s – Octet 4
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	x	Spectrum maximum frequency upstream (bits 1 to 6)

Table 11-10.3/G.994.1 – Standard information field – G.992.2 Annex C
Spectrum frequency downstream NPar(3) coding – Octet 1

Bits								G.992.2 Annex C Spectrum frequency downstream NPar(3)s – Octet 1
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	x	x	Spectrum minimum frequency downstream (bits 7 and 8)

Table 11-10.3.1/G.994.1 – Standard information field – G.992.2 Annex C
Spectrum frequency downstream NPar(3) coding – Octet 2

Bits								G.992.2 Annex C Spectrum frequency downstream NPar(3)s – Octet 2
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	x	Spectrum minimum frequency downstream (bits 1 to 6)

Table 11-10.3.2/G.994.1 – Standard information field – G.992.2 Annex C
Spectrum frequency downstream NPar(3) coding – Octet 3

Bits								G.992.2 Annex C Spectrum frequency downstream NPar(3)s – Octet 3
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	x	x	Spectrum maximum frequency downstream (bits 7 and 8)

Table 11-10.3.3/G.994.1 – Standard information field – G.992.2 Annex C
Spectrum frequency downstream NPar(3) coding – Octet 4

Bits								G.992.2 Annex C Spectrum frequency downstream NPar(3)s – Octet 4
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	x	Spectrum maximum frequency downstream (bits 1 to 6)

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