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D-IF1.00-01-TS

Title: Private Personal Handy-Phone System : Interface Between Cell Station and Personal Station
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History of Revised Versions

Version	Date	Outline
01	July 31, 1998	Established

Public Personal Handy-Phone System:
Interface between Cell Station and Personal Staiton

Contents

1. Scope

This specification specifies the radio interface between cell station (hereinafter CS) and personal station (hereinafter PS) of the Private Personal Handy-Phone System. It provides the minimum requirement for CS/PS interoperability for the Private Personal Handy-Phone System.

2. Relationship with RCR STD-28 VERSION 2

This specification is specified based on RCR STD-28 VERSION 2.

3. Differences from RCR STD-28 VERSION 2

Differences from RCR STD-28 VERSION 2 are specified in Table 3-1/D-IF1.00.
Note that only Private mandatory, Private standard, Private reference and Reference part of RCR STD-28 VERSION 2 should be referred. Note also that Appendix AC should be referred for frequency allocation, and that frequency allocation specifications are subject to each country's national regulations. And note that the following clauses in RCR STD-28 VERSION 2 are based on Japanese regulations and may be subject to each country's national regulations:

Clauses 3.4.2.11, 4.2.17, 4.2.18, 4.4.3.5.3.2, 4.4.3.6.3.2, 4.4.3.7.3.2, 4.4.3.7.3.5.3, 4.4.3.7.3.5.19, 4.4.3.7.3.5.22, 7.1.8, 7.1.9, 7.1.11.1, 7.1.11.2, 7.4.1, 7.4.2.2, Appendix L[clause 1], Appendix S[clause 1], Appendix X[clause 5.1], Appendix AA[clause 1], Appendix AG[clause 1] and Appendix AH.

Table 3-1/D-IF1.00 Differences from RCR STD-28 VERSION 2

Clause number	This Specification	RCR STD-28 VERSION 2
1.1	This specification specifies the radio interface between cell station (hereinafter CS) and personal station (hereinafter PS) of the Private Personal Handy-Phone System. It provides the minimum requirement for CS/PS interoperability for the Private Personal Handy-Phone System. This specification is specified based on RCR STD-28 VERSION 2. Differences from RCR STD-28 VERSION 2 are specified in Table 3-1/D-IF1.00. Note that only Private mandatory, Private standard, Private reference and Reference part of RCR STD-28 VERSION 2 should be referred. Note also that Appendix AC should be referred for frequency allocation, and that frequency allocation specifications are subject to each country's national regulations. And note that the following clauses in RCR STD-28 VERSION 2 are based on Japanese regulations and may be subject to each country's national regulations: Clauses 3.4.2.11, 4.2.17, 4.2.18, 4.4.3.5.3.2, 4.4.3.6.3.2, 4.4.3.7.3.2, 4.4.3.7.3.5.3, 4.4.3.7.3.5.19, 4.4.3.7.3.5.22, 7.1.8, 7.1.9, 7.1.11.1, 7.1.11.2, 7.4.1, 7.4.2.2, Appendix L[clause 1], Appendix S[clause 1], Appendix X[clause 5.1], Appendix AA[clause 1], Appendix AG[clause 1] and Appendix AH.	The standard is provided to specify the radio interface of communication systems that perform digital-cordless telephone and personal handy phone communication (hereinafter referred to as "personal handy phone systems") as specified in radio equipment rules item 8.2 of article 49 and item 8.3 of article 49.
1.4	(delete item 1.4)	
2.2	(2) R point : Interface point between ISDN user-network interface non-conforming terminal and mobile terminal equipment or terminal adapter (3) S point : Interface point between ISDN user-network interface conforming	(2) R point :Interface point between I interface non-conforming terminal and mobile terminal equipment or terminal adapter. (3) S point :Interface point between I interface conforming terminal or terminal adapter and mobile terminal

	terminal or terminal adapter and mobile terminal equipment. PS0, PS4, PS5 : Personal station, including integrated man/machine interface of terminals, etc. PS1, PS2 : Personal station with ISDN user-network interface. PS3 : Personal station without ISDN user-network interface. TE1 : Terminal equipment with ISDN user-network interface TE2 : Terminal equipment without ISDN user-network interface. TA : Interface conversion equipment between non-ISDN user-network-interface and ISDN	equipment. PS0, PS4, PS5 : Personal station, including integrated man/machine interface of to terminals, etc. PS1, PS2 : Personal station with I interface. PS3 : Personal station without I interface. TE1 : Terminal equipment with I interface TE2 : Terminal equipment without I interface. TA : Interface conversion equipment between Non-I-interface and I-interface.
2.3.1.1(1)	It can be connected to the public telephone network offered by telecommunications operators.	It can be connected to the public telephone network offered by type I telecommunications operators.
3.2.1	Radio frequency band	Radio frequency band (Execute-article 6, Equipment-article 7 and item 8.2 of article 49)
3.2.2	Carrier frequency band	Carrier frequency specing (Execute-article 6, Equipment-article 7 and item 8.2 of article 49)
3.2.4	Communication system	Communications system (Equipment-item 8.2 of article 49 and item 8.3 of article 49)
3.2.5	Number of multiplexed circuits	Number of multiplexed circuits (Notification/’93 year, number 522)
3.2.6	Modulation method	Modulation method (Equipment-item 8.2 of article 49 and item 8.3 of article 49)
3.2.7	Transmission are	Transmission rate (Equipment-item 8.2 of article 49 and item 8.3 of article 49)
3.2.8	Voice coding rate	Voice coding rate (Notification/’93 year, number 522)
3.2.9	Frame length	Frame length (Notification/’93 year, number 522)

<table>
<tr><td>3.2.12.1</td><td>Selective calling systems</td><td>Selective calling systems (Equipment-item 2 of article 9)</td></tr>
<tr><td>3.2.12.2</td><td>Calling identification memory device requirements</td><td>Calling identification memory device requirements (Notification/’93 year, number 521)</td></tr>
<tr><td>3.2.12.2(a)</td><td>Must store calling identification code by a method</td><td>Must store calling identification code by a method approved by Minister of Posts and Telecommunications</td></tr>
<tr><td>3.2.12.3</td><td>Calling identification discrimination system requirements</td><td>Calling identification discrimination system requirements (Notification/’93 year, number 521)</td></tr>
<tr><td>3.2.15(1)</td><td>Control carrier</td><td>Control carrier (Notification/’93 year, number 522)</td></tr>
<tr><td>3.2.19(1)</td><td>The specified values of Table 3.2.1 are for the case where only mutual conversion between ADPCM←64 kbit/s A-law or μ-law PCM according to ITU-T recommendation G.726 for voice coding is performed.</td><td>The specified values of Table 3.2.1 are for the case where only mutual conversion between ADPCM←μ-law PCM according to ITU-T recommendation G.726 for voice coding is performed.</td></tr>
<tr><td>3.2.20(2)
(Note 1)</td><td>L is the line transmission loss between the switching facilities and the point of connection to the terminal equipment at 1,500Hz.</td><td>L is the line transmission loss between the switching facilities of the type I telecommunications carrier and the point of connection to the terminal equipment at 1,500Hz.</td></tr>
<tr><td>3.2.20(2)
(Note 4)</td><td>If CS has the signal source of non-speech, spurious output level is shown in Table 3.3.2.1.

Table 3.3.2.1 Spurious output power tolerance limits of CS for non-speech signal source
<table>
<tr><th>Item</th><th>Output power torelance Limits</th></tr>
<tr><td>From 4 kHz to 8 kHz</td><td>Less than (P–20) dB</td></tr>
<tr><td>From 8 kHz to 12 kHz</td><td>Less than (P–40) dB</td></tr>
<tr><td>Each 4 kHz band above 12kHz</td><td>Less than (P–40) dB</td></tr>
</table>
P is the signal output level up to 4 kHz.</td><td>If CS has the signal source of non-speech, spurious output level is stipulated other than this stipulation. (Refer to article 14 of specifications for terminal equipment.)</td></tr>
</table>

3.3.1.1	Modulation method	Modulation method (Equipment-item 8.2 of article 49 and item 8.3 of article 49)
3.3.1.3(2)	Roll-of rate	Roll-off rate (Equipment-item 8.2 of article 49 and item 8.3 of article 49)
3.3.2	Transmission rate	Transmission rate (Equipment-item 8.2 of article 49 and item 8.3 of article 49)
3.4.2.1	Transmission power	Transmission power (Execute-article 6 and Equipment-item 8.3 of article 49)
3.4.2.2	Transmission of calling identification code	Transmission of calling identification code (Notification/’94 year, number 424 and ’93 year, number 521))
3.4.2.3	Adjacent channel power rate	Adjacent channel power rate (Equipment-item 8.2 of article 49 and item 8.3 of article 49)
3.4.2.5	Carrier off time leakage power rate	Carrier off time leakage power rate (Equipment-item 8.2 of article 49 and item 8.3 of article 49)
3.4.2.6	Transmission spurious	Transmission spurious (Equipment-article 7)
3.4.2.7	Allowed value for occupied bandwidth	Allowed value for occupied bandwidth (Equipment-attached table/number 2)
3.4.4.2.8	Frequency stability	Frequency stability (Equipment-attached table/number 1)
3.4.3.7	Conducted spurious component	Conducted spurious component (Equipment-Article 24)
3.4.4	Antennas	Antennas (Equipment-item 8.2 of article 49 and item 8.3 of article 49)
4.3.2.6.2(4)	(delete item 4.3.2.6.2(4))	
4.3.4.1.2	System type (octet 3) Shows the system type required by a PS. Bit 6 5 4 0 0 0 Public system 0 0 1 Private system based on RCR STD-28 (version 2) 0 1 0 System type 3 (reserved)	System type (octet 3) Shows the system type required by a PS. Bit 6 5 4 0 0 0 Public system (including private system based on RCR STD-28 (version 1) or RCR STD-28 (version 1 Rev.-1))

	• • • • • • 1 1 1 System type 8 (reserved) <u>RT-MM protocol version (octet 3)</u> Shows the RT-MM protocol version held by PS. Bit <u>3 2 1</u> 0 0 0 Version 1 (reserved) 0 0 1 Version 2 (RCR STD-28 (version 2)) 0 1 0 Version 3 (reserved) • • • • • • 1 1 1 Version 8 (reserved)	0 0 1 Private system based on RCR STD-28 (version 2) 0 1 0 System type 3 (reserved) • • • • • • 1 1 1 System type 8 (reserved) <u>RT-MM protocol version (octet 3)</u> Shows the RT-MM protocol version held by PS. Bit <u>3 2 1</u> 0 0 0 Version 1 (RCR STD-28 (version 1) or RCR STD-28 (version 1 Rev.-1)) 0 0 1 Version 2 (RCR STD-28 (version 2)) 0 1 0 Version 3 (reserved) • • • • • • 1 1 1 Version 8 (reserved)
4.3.4.1.5	<u>System type (octet 3)</u> Shows the system type required by a PS. Bit <u>6 5 4</u> 0 0 0 Public system 0 0 1 Private system based on RCR STD-28 (version 2) 0 1 0 System type 3 (reserved) • • • • • • 1 1 1 System type 8 (reserved) <u>RT-MM protocol version (octet 3)</u>	System type (octet 3) Shows the system type required by a PS. Bit <u>6 5 4</u> 0 0 0 Public system (including private system based on RCR STD-28 (version 1) or RCR STD-28 (version 1 Rev.-1)) 0 0 1 Private system based on RCR STD-28 (version 2) 0 1 0 System type 3 (reserved) • • • • • • 1 1 1 System type 3 (reserved)

	Shows the RT-MM protocol version held by PS. Bit 3 2 1 0 0 0 Version 1 (reserved) 0 0 1 Version 2 (RCR STD-28 (version 2)) 0 1 0 Version 3 (reserved) • • • 1 1 1 Version 8 (reserved)	RT-MM protocol version (octet 3) Shows the RT-MM protocol version held by PS. Bit 3 2 1 0 0 0 Version 1 (RCR STD-28 (version 1) or RCR STD-28 (version 1 Rev.-1)) 0 0 1 Version 2 (RCR STD-28 (version 2)) 0 1 0 Version 3 (reserved) • • • 1 1 1 Version 8 (reserved)
4.3.4.2.1	2nd system information broadcasting usage method (octet 4) This information element is used only in private systems, and is reserved in public systems. Bit 7 2 Reserved 3 2nd system information broadcasting usage method is according to the method indicated by RCR STD-28 (version 2) to follow thereafter.	2nd system information broadcasting usage method (octet 4) This information element is used only in private systems, and is reserved in public systems. Bit 7 0 2nd system information broadcasting usage method is in according to the method indicated by RCR STD-28 (version 1) or RCR STD-28 (version 1 REV.-1). 1 2nd system information broadcasting usage method is according to the method indicated by RCR STD-28 (version 2) to follow thereafter.
4.3.4.2.2	RT-MM protocol version (octet 4) Shows the RT-MM protocol version supported by CS. However in public system this information element shows whether CS supports version 1 or not. Bit 8 7 6 5 4 3 2 1 x x x x x x x 1/0 Version 1 present/absent (reserved) x x x x x x1/0 x Version 2 (RCR STD-28 (version2)) present/absent (reserved for public system) x x x x x1/0 x x Version 3 present/absent (reserved)	RT-MM protocol version (octet 4) Shows the RT-MM protocol version supported by CS. However in public system this information element shows whether CS supports version 1 or not. Bit 8 7 6 5 4 3 2 1 x x x x x x x 1/0 Version 1 (RCR STD-28 (version 1) or RCR STD-28 (version 1 Rev.-1)) present/absent x x x x x x 1/0 x Version 2 (RCR STD-28 (version2)) present/absent (reserved for public system) x x x x x1/0 x x Version 3 present/absent (reserved)

	x x x x 1/0 x x x Version 4 present/absent (reserved) other Rserved x: Don't care	x x x x 1/0 x x x Version 4 present/absent (reserved) other Rserved x: Don't care
4.3.4.2.3	<u>System type (octet 4)</u> Shows system type held by CS. Bit <u>8 7 6 5 4 3 2 1</u> x x x x x x x 1/0 Public system present/absent x x x x x x1/0 x Private system based on RCR STD-28 (Version 2) present/absent x x x x x1/0 x x System type 3 present/absent (reserved) x x x x 1/0 x x x System type 4 present/absent (reserved) other Rserved x: Don't care (Note) If CS holds multiple system types, the relevant multiple bits are "1". <u>RT MM protocol version (octet 5)</u> Shows RT-MM protocol version held by CS Bit <u>8 7 6 5 4 3 2 1</u> x x x x x x x 1/0 Version 1 present/absent (reserved) x x x x x x1/0 x Version 2 (RCR STD-28 (version2)) present/absent (reserved for public system) x x x x x1/0 x x Version 3 present/absent (reserved). x x x x 1/0 x x x Version 4 present/absent (reserved) other Rserved x: Don't care	<u>System type (octet 4)</u> Shows system type held by CS. Bit <u>8 7 6 5 4 3 2 1</u> x x x x x x x 1/0 Public system (include private system based on RCR STD-28 (version 1)or RCR STD-28 (version 1 Rev.-1) present/absent x x x x x x1/0 x Private system based on RCR STD-28 (Version 2) present/absent x x x x x1/0 x x System type 3 present/absent (reserved) x x x x 1/0 x x x System type 4 present/absent (reserved) other Rserved x: Don't care (Note) If CS holds multiple system types, the relevant multiple bits are "1". <u>RT MM protocol version (octet 5)</u> Shows RT-MM protocol version held by CS Bit <u>8 7 6 5 4 3 2 1</u> x x x x x x x 1/0 Version 1 (RCR-STD-28 (version 1) or RCR STD-28 (version 1 Rev.-1)) present/absent x x x x x x1/0 x Version 2 (RCR STD-28 (version2)) present/absent x x x x x1/0 x x Version 3 present/absent (reserved). x x x x 1/0 x x x Version 4 present/absent (reserved) other Rserved x: Don't care