

SONY[®]

PCS-1

Video Communication System

Version 3.22
Software Upgrade

Release Notes

CONFIDENTIAL

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1. NEW FEATURES

1-1. Version 3.22

1-1-1. New Service Command

NLG Stops non-critical log information from being output.

NOTE: Call communication information is retained.

NOTE: Refer to "Service Commands" on page 24.

1-2. Version 3.21

1-2-1. Standard Encryption

The standard encryption methods outlined in ITU-T H.233, H.234, and H.235 are supported.

PCS-1 can be connected to other manufacturer's units using an encryption method. (For connection information, refer to the documentation provided with the other manufacturer's unit.)

Two encryption methods are available:

1. Standard
2. SONY (conventional LAN encryption)

Standard encryption has two modes:

1. Encryption prioritized: Establishes only encrypted connections using standard encryption.
2. Connectivity prioritized: Establishes an encrypted connection with remote parties that support encryption, and establishes a non-encrypted connection with terminals that do not support encryption.

Standard encryption supports encrypted IP and ISDN conferences; however, encrypted conferences are not supported under a multipoint connection using both IP and ISDN.

Table 1 shows encryption support for various configurations during a point-to-point connection.

Table 1. Encryption Support in Point-to-Point Connections

Encryption	Point-to-Point Connection		
	IP	ISDN	SIP
LAN (SONY)	√	NA	√
Standard	√	√	NA

Table 2 shows encryption support for various configurations during a multipoint connection.

Table 2. Encryption Support in Multipoint Connections

Encryption	Multipoint Connection						
	IP	ISDN	SIP	IP & SIP	IP & ISDN	IP & ISDN	IP, SIP & ISDN
LAN (SONY)	√	NA	√	√	NA	NA	NA
Standard	√	√	NA	NA	√	NA	NA

1-3. Version 3.14

1-3-1. Camera Control Target

The camera control target (FAR/NEAR) can be changed quickly by pressing and holding the (FAR/NEAR) button on the remote commander. (This is a keyboard shortcut.)

1-4. Version 3.11

1-4-1. UPnP Support

The Auto setting is added to NAT in the LAN settings. The Auto setting automatically starts negotiations with the router, then automatically registers the information necessary for NAT.

The routers in Table 3 are compatible with V3.11 software.

Table 3. Supported UPnP Routers/Gateways

MFG	Model	HW Version	Firmware	Out Call	H.239 OUT	IN	In Call	H.239 IN	OUT
Netgear	WGR614	V4	V5.0_07	OK	OK	OK	OK	OK	OK
Netgear	RP614	V3	V.60	OK	OK	OK	OK	OK	OK
Dlink	DI524	C1	3.02	OK	OK	OK	FAIL	—	—
Dlink	DI624	C3	2.5	FAIL	OK	FAIL	FAIL	—	—
Belkin	F5D7230-4	2000	4.05.03	OK	OK	OK	FAIL	—	—
Buffalo	WBR2-G45S	None	2.3	OK	OK	OK	OK	OK	OK
Linksys	WRT54G	V2.2	3.03.6	OK	OK	OK	OK	OK	OK
USR	USR8054	None	V1.67b44	OK	OK	OK	OK	OK	OK
SMC	7994VWBR	None	V1.00.014	OK	OK	OK	FAIL	—	—

The following routers are also compatible with V3.11 software (using the most recent firmware version for each router).

I/O Data NP-BBRM
NTT-West Web Caster 710
YAMAHA RT57

1-4-2. Standardized Multipoint Circuit Categories

The following circuit categories are now standardized into one multipoint category:

IP multipoint
ISDN multipoint
IP and ISDN multipoint

A circuit category (IP, ISDN, SIP, Tel) can be designated for each point.

NOTE: Optional MCU software is required.

1-4-3. Terminal Information Displayed on Launcher

The following terminal information can be displayed on the launcher screen:

GK user number
GK user name
NAT address
IP address
Do not display
SIP registered user name (Optional PCSA-SP1 software is required.)
SIP address (Optional PCSA-SP1 software is required.)

1-4-4. H.239 Capability Displayed in Transmission Status

When sending DSB data, transmission status shows whether or not data can be received or sent through H.239.

1-4-5. MCU Split Screen Mode with One Child Terminal

When using MCU split screen mode with only one child terminal, the display automatically switches to full screen mode.

NOTE: Optional MCU software is required.

1-4-6. TOS in LAN Settings

TOS (TypeOfService) in LAN settings can be set to the following types of transmission data:

- Audio
- Video
- Remote camera control information
- DSB data

NOTE: When the system is upgraded, the video setting must be copied to the audio, camera control and DSB data settings.

1-4-7. Improved Web Interface

The Web interface is improved as follows:

- Communication status refreshes automatically.
- Power status is supported.
- The terminal name is displayed in the Web control window.

1-4-8. Number of Lines and Line Speed in Multipoint Mode

When Multipoint mode is ON and you dial manually or via the phonebook, the number of lines and line speed are adequate.

NOTE: Optional MCU software is required.

1-4-9. New Service Command

PKS**** Defines video packet size, where **** represents values from 0000 to 9999.

NOTE: Refer to "Service Commands" on page 24.

1-5. Version 3.02

1-5-1. New Service Commands

The following service commands related to ISDN are added:

- | | |
|--------|---|
| NOCIPN | Does not include Calling Party Number (sender number information) in SETUP message during transmission. |
| SNDCMP | Adds Sending Complete to SETUP message during transmission. |
| NOSC | Does not add Sending Complete to SETUP message during transmission. |

NOTE: Refer to "Service Commands" on page 24.

1-6. Version 3.00

1-6-1. MCU On-the-Fly

When a third party calls your system during a point-to-point conference, the video communication system automatically enters a multipoint conference.

NOTE: To conduct multipoint conferences, the following optional software is required:

- PCS-323M1 (IP MCU)
 - PCS-320M1 (ISDN MCU)
-

1-6-2. Session Initiation Protocol (SIP)

When the optional SIP PCSA-SP1 software is installed in the system, your terminal can be connected to other terminals, such as IP phones, via the SIP server.

NOTE:

- Optional PCSA-SP1 software is required.
 - PCS-1 has been tested with SIP server NEC SV7000.
 - Refer to "SIP Functions (PCSA-SP1)" on page 21.
-

1-6-3. SNMP Private MIB

Information on equipment and conference systems connections can be obtained via SNMP.

1-6-4. Arabic Language

The Arabic language is supported in the GUI. (An Arabic operation manual is not provided.)

1-7. Version 2.40

1-7-1. Language Support

The following languages are now supported in the GUI:

Swedish
Finnish
Danish
Dutch
Polish
Russian

NOTE: Manuals in these additional languages are not provided.

1-7-2. MPEG4 AAC Codec over ISDN

MPEG4 AAC codec is supported over ISDN point-to-point connections.

NOTE: This function is supported only in version 2.40 and higher.

1-7-3. DSB Input Switching via Menu

You can now use the GUI to switch DSB input A or B.

NOTE: A/B input can be selected remotely using the GUI (controller menu on the screen) or manually using the DSB button.

1-7-4. Customized Logo

A customized logo can be used on the startup screen.

NOTE: Refer to "How to Use a Customized Logo on the Startup Screen" on page 23.

1-7-5. New Service Commands

ECAGC* Reduces excessive background noise. (* = any number from 6 to 12.)

A higher value for * reduces AGC gain level, which suppresses more noise. With higher values, users should speak closer to the microphone.

GKDISP Displays the E.164 number (user number) or H.323 alias (user name) on the launcher menu when user number and/or name are registered to the gatekeeper.

NOTE: Refer to "Service Commands" on page 24.

1-8. Version 2.31

1-8-1. New Service Commands

SMFF Switches the picture displayed on the first and second monitors (RGB) in dual monitor mode.

When you enter the "SMFF" command, pictures shot by the local camera are displayed on the first monitor, and pictures shot by the remote camera are displayed on the second monitor (default).

PROJ Controls Sony projectors using the IR repeater.

NOTE: Refer to "Service Commands" on page 24.

1-8-2. Input Video Select Shortcuts

You can select input video by entering the following keyboard shortcuts. The icon on the monitor shows the selected input video.

- 71: Main for local picture
- 72: Object for local picture
- 73: Aux1 for local picture
- 74: Aux2 for local picture
- 77: Switches video input (Main/Object/Aux1/Aux2) for local picture
- 81: Main for remote picture
- 82: Object for remote picture
- 83: Aux1 for remote picture
- 84: Aux2 for remote picture
- 88: Switches video input (Main/Object/Aux1/Aux2) for remote picture

1-8-3. Korean Language

The Korean language is now supported.

1-8-4. H.239 ON/OFF Capability

In the Dial and Answer setup menus, you can select whether or not H.239 capability is sent to a remote terminal.

1-8-5. MIC OFF Setting

In the Answer setup menu, a new setting enables the microphone to automatically turn OFF when answering a call.

1-9. Version 2.20

1-9-1. Miscellaneous New Functions

- The H.239 ITU-T standard in H.323 is fully supported. DSB transmission in dual stream mode in an IP/ISDN mixed multipoint conference is enabled.
- Taiwanese Chinese characters are supported.
- The number of lines in MCU mode is decided according to the bandwidth of the initial connection.
For example, if the bandwidth of the initial connection is 2B, five end points can be connected, even if the setting is 6Bx2. This rule does not apply when multiple points are called simultaneously.
- The order of the line interface menu is changed.
- 256 Kbps or 512 Kbps bandwidth can be selected in the LAN menu.
- The exact bit rate is added to the bandwidth area in the ISDN menu. For example: 1B (64K), 2B (128K).
- A keyboard shortcut (#) can be used to open the phonebook during a conference.

- CTE-600 input can be muted by setting the MIC to OFF.
- When alpha is selected as the input mode of the remote commander, symbols can be entered by pressing 0 (zero).
- A private phonebook can be added or edited, even under the Administrator or Super password.
- The GUI for connection status in Mix MCU is changed.
- When DNS is set to "Obtain automatically," the address input boxes for Primary and Secondary DNS are grayed out.
- The following camera functions can be controlled from the Web monitor:
 - Focus and Brightness settings (AUTO or MANUAL mode)
 - Backlight ON or OFF
 - Pan/tilt/zoom
- An incoming call can be rejected during a multipoint conference.
- When MCU is ON, bandwidth can be selected in the setup menu.
- More Options can be selected while dialing manually when More Options is enabled in the dial setup menu.
- Fall back is enabled when cables (except for the primary BRI cable) are pulled out in bonding mode during a conference.
- The name of the video input is located in the center of the display window.
- The terminal name is sent when connected to the DHCP server. (Option 12 of DHCP protocol is supported.)
- When gatekeeper is ON and there is an incoming call, the H.323 alias or E.164 number is displayed instead of the IP address.
- Symbols can be entered while entering the User Number of the gatekeeper.
- SPID can be entered when the following four protocols are selected, even when the country code is not 1 (USA):
 - National ISDN
 - 5ESS (P-MP)
 - 5ESS (P-P)
 - DMS-100
- When a European country code is entered, EuroISDN can be held even after power is turned OFF and ON.
- The PCS-B384 ISDN interface box can be connected.

1-9-2. New Service Commands

D2B	Sets ISDN (H.221 2B) to default value using dial menu.
Clear Log	Deletes system and call logs.
BMRO	Sets bonding mode to Revision 0, which supports AVAYA MCU connection.

NOTE: Refer to "Service Commands" on page 24.

2. PROGRAM IMPROVEMENTS

2-1. Version 3.22

2-1-1. Error Message When Calling Disconnected Endpoint

If an endpoint is called by specifying an IP address, and the endpoint is not connected or does not exist, the error message that appears is changed as follows:

~~Your system attempts to connect to other equipment than a videoconferencing system.~~



Call not responded.

2-1-2. Encoding Process in Intra Mode with H.264 CIF Video

The encoding process now operates normally in intra mode when a fast update request is received from a remote terminal that has failed to decode video due to packet loss, and when video mode is H.264 CIF.

2-2. Version 3.21

2-2-1. Communication without ISDN Setup

The following PCS-1 units now communicate and operate properly if the units are not set up for ISDN:

Model	Serial No.
PCS-1	100,001–102,896
PCS-1P	400,001–402,512
PCS-1P//C	500,001–500,772

NOTE: If a communication problem occurs before upgrading to V3.21, turn the main power switch OFF and ON.

2-2-2. User Interface

For the Japanese version only, the button name to stop continuous still pictures is changed from "Release" to "Stop."

2-2-3. Muting During DTMF Tone

Audio from MIC/AUX-IN is now muted during DTMF tone transmission.

2-2-4. Standby Mode

The unit can be released from standby mode by pressing any button on the remote control (other than the Power On button).

2-2-5. Bit Rate for ARC Video

In an environment with significant packet loss from automatic route control (ARC), the minimum bit rate for video transmission is set to 64 Kbps; bit rate no longer falls to 0.

2-2-6. Setup Data

Only setup data from the same model and version can be loaded. This prevents malfunctions that may occur if setup data from a different model or version are loaded.

2-2-7. Display for Number of Lines to Set

Choices are displayed for the number of lines that can be set according to the ISDN interface box (PCSA-B768S, PCSA-B384S, PCSA-PRI) connected to the PCS:

PCSA-B768S (up to 12B)

PCSA-B384S (up to 6B)

2-2-8. ISDN Sub Addresses

ISDN sub addresses now function properly.

2-2-9. Ringback Tone with SIP Connection

During a SIP connection, the ringback tone now functions correctly on the outgoing transmission terminal.

2-3. Version 3.14

2-3-1. Audio Mode in MCU Conference

In a multipoint connection via ISDN, audio mode no longer changes from G.722 to G.728 when one site leaves the conference.

2-3-2. Forward Function via SIP

If the Forward function is cancelled:

- The Hold and Forward functions now operate properly.
- The conference proceeds normally, even when PCS-1 does not have optional H.323 software.

2-3-3. NAT Function

When NAT is set to ON, the audio and video stream can now be received properly.

2-3-4. Voice Only Display

Voice Only is displayed correctly on the mosaic if the first terminal is an IP phone via SIP.

2-4. Version 3.12

When firmware is upgraded via memory stick from V3.01 or earlier to V3.12, transmitted PC images are displayed correctly through the data solutions box.

2-5. Version 3.11

2-5-1. Automatic Dial Function in Standby Mode

The automatic dial function using the private phone book now operates properly in Standby mode.

2-5-2. Camera Control at Remote Site

When camera position at the local site is changed, the camera at the remote site can be properly controlled.

2-6. Version 3.03

2-6-1. MCU Mode in ISDN Cascade Connection

When using a cascade connection that includes an ISDN terminal, set MCU mode to ON to enable proper transmission of audio and video. Previously, audio and video was not transmitted properly when MCU was set to automatic.

2-6-2. Length of Terminal and Host Name

The maximum number of characters that can be set for the terminal and host name is limited to 30. This prevents system problems from occurring if the name set on the Web exceeds 30 characters.

2-6-3. Display of Terminal Name

The terminal name is now displayed correctly in a LAN cascade connection when:

- The speaker has switched during VoiceActivate mode, or
- A new terminal participates in the conference.

2-6-4. NEC MediaPoint Terminal

When a NEC MediaPoint terminal is used in a multipoint IP connection, and video mode is H.261, audio and video is transmitted properly.

2-7. Version 3.02

2-7-1. Miscellaneous Improvements

- ISDN can be properly connected while accounting information (AOC) is enabled.

- DSB can now be transmitted or received while LAN encryption is enabled.
- During DSB transmission or reception over an ISDN connection, part of the image is no longer blurred.
NOTE: This improvement applies to DSB units with serial numbers 102,889 and higher.
- When you hold a conference in a cascade connection where the LAN terminals and the ISDN terminals are mixed, and you send DSB data from a child terminal in the LAN connection, the data is now properly received by other terminals.
- Information on connected devices is now displayed correctly from Web control.
- In the PPPoE setup of Web control, the set password is displayed as a series of asterisks (***) .
- During a 768 Kbps LAN connection with PCS-1500, video images from PCS-1/11 are now displayed correctly.
- During an ISDN connection with Polycom VSX, the presentation data in H.239 from Polycom can now be received correctly.
- If Send and Cancel are pressed repeatedly, the beep sound is no longer disabled.
- Character strings such as <1> or <3> are no longer displayed when a new terminal enters a multipoint conference.
- When you cancel an established ISDN point-to-point connection from the receiving terminal while it receives a LAN connection signal using the On-the-Fly function, the receiving terminal no longer returns to the launcher screen.
The same improvement applies when you cancel an established LAN point-to-point connection while the receiving terminal receives an ISDN connection using the On-the-Fly function.
- When a registration request (RAS message) to GateKeeper is not delivered correctly (for example due to a network failure), the subsequent connection can now be established correctly.

2-8. Version 3.01

2-8-1. Mixed SIP and ISDN Connections

Video and audio signals are now transmitted correctly during the following mixed connections:

- Multipoint conference established with an ISDN terminal participating between terminals in a SIP point-to-point connection
- Multipoint conference established with a SIP terminal participating between terminals in an ISDN point-to-point connection

NOTE: Optional PCSA-SP1 software is required.

2-8-2. Terminal Reset

If a transmission is canceled while a signal is being transmitted to the other end of a SIP connection, the terminal transmitting the signal is no longer reset.

2-8-3. H.239 Connection with Other Terminals

When H.239 is enabled in a multipoint connection (IP), other terminals (such as PCS-1600 and PCS-6000) can now be connected correctly.

Point-to-point and ISDN connections can be established with the following terminals that have H.225.0 version 2 or earlier:

PCS-1600

PCS-6000

Polycom view station MP (former version)

Net Meeting (former version)

NOTE: Optional MCU software is required.

2-8-4. Known Issues

- If you try to cancel an established ISDN point-to-point connection from the receiving terminal when it is trying to receive a LAN connection signal using the On-the-Fly function, the receiving terminal returns to the launcher screen.

The same result occurs if you try to cancel an established LAN point-to-point connection when the receiving terminal is trying to receive an ISDN connection using the On-the-Fly function.

If you do not want to receive signals from other terminals during a conference, use the function that blocks incoming signals.

NOTE: This issue is resolved with V3.02 software.

- If you hold a multipoint conference in ISDN using the On-the-Fly function, and the signals are received by more phone numbers than the specified number of lines among every point during the MCU, the signals cannot be received after the second point.

In a point-to-point connection, call the phone number on the first line, or transmit signals from the MCU terminal.

- If you hold a conference in a cascade connection where the LAN terminals and the ISDN terminals are mixed, and you send DSB data from a child terminal in the LAN connection, the data may not be received by any other terminals.

To hold a conference in this situation, send DSB data from the child terminal in the LAN connection in advance, before any ISDN terminals are connected in the conference.

Once DSB data are sent from the child terminal in a cascade LAN connection containing only LAN terminals, DSB data can be received until the child terminal is turned ON or OFF.

NOTE: This issue is resolved with V3.02 software.

2-9. Version 3.00

2-9-1. Echo Cancellor

The performance of echo canceller is improved as follows:

- Noise suppression is improved by using an acoustic signal detection algorithm to detect noise. As a result, the accuracy of acoustic sound and noise detection are improved significantly.
- The algorithm for the detection of double-talk is improved to reduce the following audio distortion:
 - Single double-talk of five to ten times
 - Double-talk of speeches for a period of five to ten seconds

2-9-2. Range of Port Numbers Displayed

When the TCP/UDP port is specified, the entire range of port numbers is automatically displayed. (For example: From XX to YY.) Previously, only the first port number of the usable port range was displayed.

NOTE: The range of usable port numbers differs, depending on whether or not H.323 MCU software is installed.

2-9-3. Network Access

Network access can be restricted in the Administrator Setup, enabling the administrator to prohibit users from accessing Telnet, Web, and FTP.

2-9-4. Destination for Saving/Reading Files on Memory Stick

The destination for saving and reading still images on a memory stick is automatically switched to the folder having the highest number in the DCIM folder: 100MSDCF, 101MSDCF, 102MSDCF...109MSDCF.

Previously, only the DCIM\100MSDCF folder could be accessed.

If both 100MSDCF and 101MSDCF folders are available on a memory stick, 101MSDCF can be accessed and 100MSDCF cannot be accessed.

NOTE: If you want to use 100MSDCF, move the files in the 100MSDCF folder to the 101MSDCF folder.

2-9-5. Display of DSB RGB Monitor

When DSB RGB is used as a monitor, the PC output display connected to the DSB can be displayed on the screen during conferencing. The display can be switched by pressing the DISPLAY key on the remote.

2-9-6. Display of Setup for Incoming Call Refusal

When the MCU option is installed, the setup for Incoming Call Refusal can be displayed on a submenu while communication is in progress.

2-9-7. Gatekeeper in Global Network

Connection via gatekeeper in the global network is supported. The NAT setting (ON) enables this function.

In previous versions, connection via gatekeeper was possible in the local network only.

2-9-8. ITU-T as ISDN Protocol

ITU-T (rather than NTT) can be selected as the protocol on the ISDN setup menu when the language is not set to Japanese.

2-9-9. NAT Address on Launcher Menu

The NAT address can be displayed on the Launcher menu using the "NATDISP" service command.

2-9-10. Audio Mode in G.722 Connection

When two or more terminals are connected in H.320MCU using G.722, audio mode no longer automatically switches to G.728 when either terminal is disconnected.

2-9-11. Known Issues

- When using a cascade connection that includes ISDN terminals, make sure that the ISDN terminals use the same circuit speed and the same audio codec mode.

Video cannot be sent correctly if:

- ISDN terminals exist for both MCUs, and their circuit speeds are different.
- The circuits are connected with different audio codec modes, even if their circuit speeds are the same.
- When using a LAN cascade connection that includes ISDN terminals, set MCU mode to ON. If MCU mode is set to automatic, video and audio cannot be transferred correctly.

2-10. Version 2.44**2-10-1. Stripe Noise in H.264 Codec Mode**

Stripe noise in H.264 codec mode is corrected.

2-10-2. DSB Data Transmission

When FECC is OFF, DSB data transmission no longer fails on the second attempt or subsequent attempts.

2-10-3. Incorrect GUI in Phone Book Menu

When more than 250 parties are registered, all registered parties are now listed in the menu, as opposed to only five parties or fewer.

2-10-4. FECC When Connected to Radvision Gateway

When a call is initiated from PCS-1 connected through a LAN, FECC is now possible in both directions under the following conditions:

- PCS-1 units are connected with Radvision Gateway.
- One PCS-1 is connected through ISDN in H.320 mode.
- Another PCS-1 is connected through LAN in H.323 mode.

2-10-5. Modification of GUI in Simplified Chinese

The following descriptions in simplified Chinese are modified:

- Adaptive rate control in LAN setup menu
- Standby time in general setup menu

2-11. Version 2.43

2-11-1. Audio and Video Performance in MCU Mode

Audio and video problems no longer occur during multipoint connections over ISDN, LAN, or mixed mode MCU when the following sequence is performed:

1. A point-to-point call is initiated in MPEG4 AAC.
2. The point-to-point call is disconnected, and a multipoint call is initiated.
3. When the second point is connected, audio noise no longer occurs and video no longer freezes.

2-11-2. Voice Repetition

Voice repetition is no longer detected on IP connections experiencing excessive packet loss and a long transmission delay.

Previously, voice repetition was especially notable under the following conditions:

- Rate of packet loss more than 3%
- Transmission delay more than 250 ms
- ARQ ON

2-11-3. Known Issues

- DSB data transmission may fail when FECC is OFF.
- Audio mode may change from G.722 to G.728 when one site disconnects from the conference in a multipoint connection.
- FECC problems occur when PCS units are connected to Radvision Gateway under the following conditions:
 - One PCS-1 unit is connected through ISDN in H.320 mode.
 - Another PCS-1 unit is connected through LAN in H.323 mode.
 - When a call is initiated from the PCS-1 unit connected through LAN, FECC is not possible in either direction.

- Video data rate problems may occur in networks with a longer than average delay. The data transmission rate for video may drop to 0 and the picture may freeze when ARC is ON and the network experiences a long delay, such as when communicating through intercontinental connections. Audio is not affected and video eventually recovers.

2-12. Version 2.40

2-12-1. Echo Canceller

The performance of echo canceller is improved as follows:

- Better audio quality in double-talk.
- Increased sensitivity to quiet sounds.

2-12-2. Port Numbers

V2.2 and V2.32 use different port numbers from those of previous versions. V2.40 and higher standardizes the port numbers. (See Tables 4 and 5.)

Table 4. Default

Message	Before V2.2	V2.2/V2.3	V2.40 and Higher
Q.931 (answer)	1720	1720	1720
RAS	2253	Any number from 2253 to 2303	Any number from 2253 to 2255 (MCU off) Any number from 2253 to 2263 (MCU on)
Q.931 (dial) and H.245	2254, 2255 (MCU off) from 2254 to 2263 (MCU on)		

Table 5. Custom

Message	Before V2.2	V2.2/V2.3	V2.40 and Higher
Q.931 (answer)	1720	1720	1720
RAS	A*	Any number from A to A+50	Any number from A to A+2 (MCU off) Any number from A to A+10 (MCU on)
Q.931 (dial) and H.245	A+1, A+2 (MCU off) from A+1 to A+10 (MCU on)		

* A=TCP port number set by user

For versions before V2.2, the default number or the number set by the user is used in order at each session. The range of the ports used is 3 (MCU off) and 11 for the maximum (MCU on).

For V2.2 and higher, port numbers for each message are not assigned in order, but are assigned randomly at each connection.

- V2.2/V2.3: The range of ports is 51.
- V2.4: The range of ports is 3 (MCU off) and 11 (MCU on).

2-12-3. Cascade MCU Mode

If the terminal is disconnected when broadcasting a picture in cascade MCU mode, both PCS units with the MCU function no longer try to broadcast the picture simultaneously, and the picture can now be controlled properly.

2-12-4. Dial and Ringer Tones

When dial tone and ringer tone are set through the Web, the tone settings are no longer inverted.

2-12-5. Radvision GateKeeper

Radvision Gatekeeper V2.x can be connected.

2-12-6. Size of IP Packet for H.264 Video Data

The maximum size of IP packet for H.264 video data is set to 1,300 bytes. This improvement prevents packet loss when sending large-size IP packets with certain routers.

2-12-7. Mitsubishi Melface Terminal

Pictures now display properly when PCS-1 is connected to a Melface terminal manufactured by Mitsubishi Electric Corp.

2-12-8. Intra-Refresh Interval in H.264 Codec

When H.264 codec is selected, the frame intra-refresh interval is changed from 15 minutes to two minutes (30 fps) or four minutes (15 fps).

2-13. Version 2.30

2-13-1. ARC and ARQ

ARC and ARQ now operate properly.

2-13-2. Receiving Still Pictures

Still pictures are now properly received when JPEG images stored in the memory stick are transmitted.

2-13-3. Host Name Conversion

When the host name of the remote party is entered and the IP address is retrieved from the DNS server, the IP address is set properly and the connection is established.

2-13-4. Prefix in Multipoint Connection

When sites are called sequentially in MCU mode, the prefix is properly attached to ISDN numbers of the sites that are connected second and subsequently.

2-13-5. Noise in G.722

When G.722 is selected in ISDN and LAN connections, noise no longer occurs.

2-13-6. Authentication of PPPoE

PPPoE is now properly authenticated when DHCP is turned off, and the IP address is now properly set in the LAN connection.

2-13-7. Source IP Address

When the IP address is changed, the source IP address for the IP packet now changes properly, and the power resets.

2-13-8. Support for Terminals of Other Vendors

PCS-1 can now be connected to VoIP and other terminals of other vendors. Conditions for transmitting H.239 capability are revised. If you did not connect terminals using V2.3, try to connect the terminals with H.239 capability turned off.

2-13-9. ISDN Switch

A connection can now be established when PCS-1 is connected to:

- Siemens (Nixdorf) switch.
- National ISDN switch in Hong Kong.

2-13-10. Transmitting Still Pictures

The receiver can now cancel still image display mode after the transmitter cancels still picture transmission.

Previously, still image display mode could not be cancelled when:

- Still pictures were transmitted in continuous send mode,
- Video mode was H.264, and
- Transmission rate was less than 230 Kbps with a LAN connection and 2B with an ISDN connection.

2-13-11. PCS-1600 V3.20

A connection can now be established when PCS-1 dials out to (receives from) PCS-1600 V3.20.

NOTE: PCS-1600 V3.30 has also corrected connection problems.

2-14. Version 2.20

2-14-1. Miscellaneous Program Improvements

- H.264 implementation conforms to ITU-T standards.
- When the number of terminals participating in a cascade multipoint conference is changed, DSB data transmission is available.
- A user ID and password for PPPoE of up to 128 characters is supported.
- When DSB data is received while the connection status is displayed, screen images can be switched properly.
- Video transmission no longer stops in a H.263++ connection of 15 fps at a transmission speed less than 384 Kbps.
- The white board now functions when the MCU terminal is set to H.261 in an ISDN multipoint conference.
- The video rate is displayed correctly when DSB transmission starts and stops repeatedly, and the connection is established and interrupted repeatedly.
- When H.264 mode is originally registered and video transmission is changed from H.264 to H.263 immediately after power-on, video codec mode changes to H.263.
- The packet recovery ratio is displayed correctly.
- When a H.264 connection is established, the screen no longer remains black on rare occasions.
- PAP certification is supported in a PPPoE connection.
- The setting for TOS field (IP Precedence, Diffservices) now functions correctly.
- When CTE is selected as the audio input, the audio setting is displayed properly.
- The transmission of still images no longer stops in still picture "continuous send" mode with a H.264 connection.
- A video still picture is no longer transmitted five seconds after the transmission command is entered.
- The "KV66" service command, which turns the KV-29X66 TV OFF and ON, now operates properly.
- The "PWD1" command allows you to edit or add to the phonebook, even with the administrator password.

3. OPERATION NOTES

3-1. SIP Functions (PCSA-SP1)

NOTE: Optional PCSA-SP1 software is required.

3-1-1. NEC Univerge SV7000

NEC Univerge SV7000 is the only SIP server confirmed with V3.11. V3.11 functions are compatible only with Univerge SV7000 R5 or higher.

3-1-2. Communication Using IP Address

When using SIP, the user manual states that communication is possible using:

- A number,
- SIP URL, or
- IP Address.

However, when sending a signal to a destination that is specified by an IP address, turn the SIP server setting OFF.

NOTE: This setting is required because of specifications for NEC Univerge SV7000.

3-1-3. MCU Mode ON in Multipoint Conference

In a multipoint conference with a SIP connection, set MCU mode to ON. Video/audio mode cannot be changed during a conference that is on a SIP connection. Therefore, audio is valid only on the third terminal (including MCU) in a multipoint conference using the On-the-Fly function.

Video mode is H.264 on the first SIP-facing connection. The system switches to a multipoint conference at the next participating terminal; however, H.264 video mode is not supported and must be changed to H.263. Because H.264 video mode on the first SIP-facing connection cannot be changed, the newest participating terminal is handled as the second terminal.

If MCU mode is turned ON first, video mode on the first terminal is set to H.263, and video/audio can be sent/received correctly by the third and subsequent terminals.

NOTE: Optional MCU software is required.

3-1-4. Still Image Send/Receive Function

In a multipoint conference with a SIP connection, the still image send/receive function is not supported. Still images sent from other terminals can be received correctly only by MCU.

3-1-5. New Functions with V3.11 Software

- Hold
Hold is supported only through a SIP point-to-point or multipoint conference. Hold is not supported in a mixed multipoint conference with ISDN and IP connections.
- Forward
A transmission can be forwarded to a third party only during a SIP point-to-point conference. Transmissions cannot be forwarded in a multipoint conference.
- Send and Receive DSB Data
DSB data can be sent or received by H.239 during SIP point-to-point, multipoint, or mixed multipoint conferences with ISDN and IP connections.
NOTE: The H.239 setting must be turned ON before sending or receiving data.
- Switch Broadcaster
Each child terminal can specify itself as the broadcaster, or the MCU can specify a designated terminal as the broadcaster.
- Whiteboard Drawing
The Whiteboard function can now be used on a SIP connection.
- Remote Camera Control
The camera on other terminals can be controlled. The input source on other terminals can be switched.
- Video Codec Mode MPEG4
Video codec mode MPEG4 on a SIP point-to-point conference is supported.
- Encrypted Connection
An encrypted connection is supported through a SIP connection.
- Simultaneous Transmission
Simultaneous transmission is now supported in a SIP multipoint conference.

3-1-6. Known Issues

- Video and audio may not be sent or received correctly when both SIP and ISDN connections are used by the On-the-Fly function simultaneously.

An ISDN terminal participates in a SIP-facing connection, and the connection switches to a multipoint conference.

A SIP terminal participates in the ISDN-facing connection, and the connection switches to a multipoint conference.

When using a multipoint conference that includes a SIP connection, set MCU mode to ON.

- When a SIP connection is attempted for the second time on a terminal that is connected by ISDN, the error process does not function correctly, resulting in an error at the ISDN terminal.

NOTE: The same symptom occurs when an ISDN connection is attempted on a terminal connected by SIP.

- The terminal may reset while transmitting to a terminal on a SIP connection.

3-2. How to Use a Customized Logo on the Startup Screen

1. Prepare a jpeg file of the logo as follows:
 - a. Change the resolution of the jpeg file to VGA (640 × 480).
 - b. Change the file name to **pcs_logo.jpg**.
2. Send the jpeg file to the unit via FTP as follows:
 - a. Connect the unit to FTP:
 - FTP xxx.xxx.xxx.xxx (use the IP address of the unit)
 - Username: **sonypcs**
 - Password: (use the admin password)
 - b. Type the command: **put pcs_logo.jpg**
 - c. Type the command: **exit**
3. Change the setting via telnet as follows:
 - a. Connect the unit to telnet:
 - Telnet xxx.xxx.xxx.xxx (IP address of PCS-1/11)
 - Username: **sonypcs**
 - Password: (use the admin password)
 - b. Type the command: **set logo,on**
 - c. Type the command: **logout**
4. Power the unit OFF and ON.

The jpeg file of the logo appears on the startup screen.

NOTE: To change back to the Sony logo, type the command: **set logo,off** via telnet.

3-3. Service Commands

3-3-1. How to Use Service Commands

1. Access the Setup menu as follows:
Press and hold the MENU button on the remote commander.
2. Select **Dial** using the → button on the remote commander.
3. Access the Service menu as follows:
Press **7** then **2** on the remote commander (without pressing the PUSH ENTER button).

The Service menu appears. (See Figure 1.)

NOTE: To cancel Service mode and return to the Setup menu, select **Cancel** using the arrow buttons, and press RETURN.

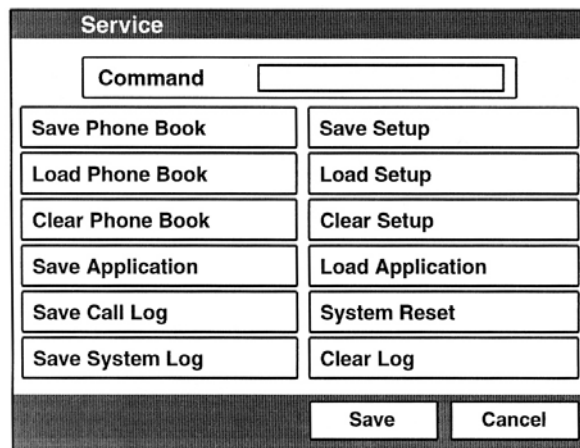


Figure 1

4. Select **Command** using the arrow buttons, and press PUSH ENTER.
A list of the commands is displayed.
5. Enter the command(s) from the command list using the remote commander.
NOTE:
 - To set two or more commands, type a space between the commands, then enter them simultaneously.
 - Set only one type of LAN interface. Otherwise, the LAN interface does not operate normally.
 - The validated command can always be confirmed from the command list.
 - Use only commands from the command list. If any other character string is entered, internal operation may be incorrect.
6. Select **Save** using the arrow buttons, and press PUSH ENTER.
The Setup menu is displayed.
7. When the LAN interface is set (including when the setting is returned to its initial value), restart the system using the power switch on the communication terminal.

3-3-2. Service Command List

Table 6. Service Command List

Command	Description	PCS Models Supported				
		1	11	TL50	G70	G50
SMS	Validates SMS function.	Yes	Yes	Yes	Yes	Yes
KV66	Sets KV-29FX66E video input to 3 after power-on using IR repeater. IR output is changed so command is sent properly during power-off. NOTE: Used only with KV-29FX66E monitors. This command invalidates setting for IR repeater mode.	Yes	Yes	No	Yes	Yes
WBxxxXyyy	Sets size (height ×width) of whiteboard used.	Yes	No	No	Yes	Yes
YCLP**	Clips luminance value in menu to specified value. ** = 80, 90, A0, B0, C0, D0, E0	Yes	Yes	Yes	Yes	Yes
YLVL**	Shifts luminance value in menu proportionally down to specified value. ** = 0 < ** < 80	Yes	Yes	Yes	Yes	Yes
D2B	Sets ISDN (2B) to default value using dial menu.	Yes	Yes	Yes	Yes	Yes
PWD1	Administrator password invalidates phone book password when super-user password is left blank.	Yes	Yes	Yes	No	No
SMFF	Sets sub-monitor to remote video.	Yes	Yes	No	No	No
BMRO	Sets bonding mode to Revision 0, which supports AVAYA MCU connection.	Yes	Yes	Yes	Yes	Yes
SMSTEST	Displays SAB without connecting to SMS server.	Yes	Yes	Yes	Yes	Yes
PROJ	Sends remote control code for projector used.	Yes	Yes	No	Yes	Yes
POFF	Turns off display for packet loss indicator.	Yes	Yes	Yes	Yes	Yes
E1PRI	E1 mode is selected.	No	No	No	Yes	Yes
T1PRI	T1 mode is selected.	No	No	No	Yes	Yes
PDx(x)	Parallel dial every xB. (x = 1–29, default = 5)	No	No	No	Yes	Yes
GKDISP	Displays E.164 number (user number) or H.323 alias (user name) on launcher menu when user number and/or name are registered to gatekeeper.	Yes	Yes	Yes	Yes	Yes
ECAGC*	Reduces excessive background noise. * = any number from 6 to 12 NOTE: Higher value for * reduces AGC gain level, which suppresses more noise. With higher values, users should speak closer to microphone.	Yes	Yes	No	No	No

Table 6. Service Command List (Continued)

Command	Description	PCS Models Supported				
		1	11	TL50	G70	G50
#1236987#	Version upgrade of LCD controller software is supported.	No	No	Yes	No	No
#7896321#	Version upgrade feature of LCD controller software.	No	No	Yes	No	No
HMx	Changes Hold sound for SIP phone. x = 1:Canon; 2:Gymnopedie	Yes	No	No	No	No
NATDISP	Displays NAT address on Launcher menu.	Yes	Yes	No	No	No
PKS****	Defines video packet size. **** = 0000 to 9999	Yes	Yes	Yes	Yes	Yes
TCB	In Presenter mode of PCSA-CTG70, displays a frame on screen when a moving object is detected.	No	No	No	Yes	Yes
NOICIPN	Does not include Calling Party Number (sender number information) in SETUP message during transmission.	Yes	Yes	Yes	No	No
SNDCMP	Adds Sending Complete to SETUP message during transmission.	Yes	Yes	Yes	No	No
NOSC	Does not add Sending Complete to SETUP message during transmission.	Yes	Yes	Yes	No	No
NLG	Allows output of system logs.	Yes	Yes	No	No	No

3-4. Keyboard Shortcuts

Table 7. Keyboard Shortcuts

Command	Function	Comments
00	Communication state display	Effective only while communicating.
1~6	Camera preset movement	
1~6 (long push)	Camera preset registration	
71	Main camera	
72	Object	
73	AUX1	
74	AUX2	
77	Toggle from 71 to 74	
81	Main camera for remote site	
82	Object for remote site	
83	AUX1 for remote site	
84	AUX2 for remote site	
88	Toggle from 81 to 84	
99	Long push menu	Effective only in the menu.
#	Address book	
*	DTMF	
PnP	Full screen	Effective only while not communicating.
Far/Near (long push)	Camera control changes to remote site.	Correspondence schedule from: PCS-1/11 V3.12 PCS-G70 V2.1 PCS-TL50 V2.2

4. H.264 COMPATIBILITY

To ensure that firmware is compatible with H.264, and to guarantee compatibility with terminals from other manufacturers, the data format of H.264 is revised in V2.20 and higher.

Therefore, when PCS-1 V2.20 or higher is connected to PCS-1 V2.01/2.03, video codec of H.264 is not supported, and H.263 or H.261 is selected instead. Video codec of H.264 is supported when PCS-1 V2.2 or higher is connected to PCS-1 V2.2 or higher, or to PCS-11 V2.13 or higher. (See Table 8.)

Table 8. H.264 Compatibility

Model	Version	↔	Model	Version
PCS-1	2.0x	H.264	PCS-1	2.0x
		H.261 H.263	PCS-1	2.2 and higher
PCS-1	2.2 and higher	H.264	PCS-1	2.2 and higher
PCS-11	2.13 2.2 and higher			

5. INTEROPERABILITY

PCS-1 and PCS-11 have been tested with the equipment listed in Tables 9 through 11.

5-1. H.320 Endpoint

Table 9. H.320 Endpoint Interoperability

Equipment	Software Version
Aethra VegaSTAR GOLD	6.00.22
Polycom iPower 970	5.1
Polycom iPower 9000	6.2.0.1208
Polycom View Station 512MP	7.5.4
Polycom View Station EX	6.0.3
Polycom View Station FX	6.0.3
Polycom VSX3000	8.0.0
Polycom VSX7000	8.0.0
Sony PCS-1	3.22
Sony PCS-11	3.22
Sony PCS-1600	3.33
Sony PCS-6000	5.02
Sony PCS-G50	2.21
Sony PCS-G70	2.21
Sony PCS-TL50	2.21
Tandberg 500 (Classic)	B9.2
Tandberg 550 (Classic)	E4.2
Tandberg 550MXP	F2.6
Tandberg 770 (Classic)	E4.2
Tandberg 770MXP	F2.6
Tandberg 800 (Classic)	B9.2
Tandberg 880 (Classic)	E4.2
Tandberg 880MXP	F2.6
Tandberg 990 (Classic)	E4.2
Tandberg 990MXP	F2.6
Tandberg 1000 (Classic)	E4.2
Tandberg 1000MXP	F2.6
Tandberg 1500MXP	F2.6
Tandberg 2000MXP	F2.6
Tandberg 2500 (Classic)	E4.2
Tandberg 3000MXP	F2.6
Tandberg 6000 (Classic)	E4.2

Table 9. H.320 Endpoint Interoperability (Continued)

Equipment	Software Version
Tandberg 6000MXP	F2.6
Tandberg 7000 (Classic)	E4.2
Tandberg 7000MXP	F2.6
Tandberg 8000 (Classic)	E4.2
Tandberg 8000MXP	F2.6

5-2. H.323 Endpoint

Table 10. H.323 Endpoint Interoperability

Equipment	Software Version
Aethra VegaSTAR Gold	6.00.22
Polycom iPower 9000	6.2.0.1208
Polycom iPower 970	5.1
Polycom Via Video	5.1.1.1009
Polycom View Station 512MP	7.5.4
Polycom View Station EX	6.0.3
Polycom View Station FX	6.0, 6.0.3
Polycom VSX3000	6.0.3
Polycom VSX7000	7.5.2
Polycom VSX8400	7.5.2
Sony PCS-1	3.22
Sony PCS-11	3.22
Sony PCS-1600	3.33
Sony PCS-6000	5.02
Sony PCS-G50	2.21
Sony PCS-G70	2.21
Sony PCS-TL30	1.13
Sony PCS-TL50	2.21
Tandberg 1000 (Classic)	E4.2
Tandberg 1000MXP	F2.6
Tandberg 1500MXP	F2.6
Tandberg 150MXP	L3.1
Tandberg 2000MXP	F2.6
Tandberg 2500 (Classic)	E4.2
Tandberg 3000MXP	F2.6
Tandberg 500	B9.2
Tandberg 550	E4.2
Tandberg 550MXP	F2.6

Table 10. H.323 Endpoint Interoperability (Continued)

Equipment	Software Version
Tandberg 6000 (Classic)	E4.2
Tandberg 6000MXP	F2.6
Tandberg 7000 (Classic)	E4.2
Tandberg 7000MXP	F2.6
Tandberg 770	E4.2
Tandberg 770MXP	F2.6
Tandberg 800 (Classic)	B9.2
Tandberg 8000 (Classic)	E4.2
Tandberg 8000MXP	F2.6
Tandberg 880	E4.2
Tandberg 880MXP	F2.6
Tandberg 990 (Classic)	E4.2
Tandberg 990MXP	F2.6

5-3. Miscellaneous Terminals

Table 11. Miscellaneous Interoperability

Terminal	Equipment	Software Version
H.320 MCU	Polycom MGC100	7.0.2
	Tandberg MCU	D3.1
H.323 MCU	RadVision viaIP400	4.0.31
	Polycom MGC100	7.0.2
	Tandberg MCU	D3.1
Gateway/ Gatekeeper	RadVision viaIP GW	4.0.0.38
	RadVision viaIP GK	3.6.0.5
SIP Server	NEC SV 7000	—
SIP Endpoint	Aethra VegaSTAR Gold	6.00.22
	Sony PCS-1	3.22
	Sony PCS-11	3.22
	Sony PCS-G50	2.21
	Sony PCS-G70	2.21
	Sony PCS-TL30	1.13
	Sony PCS-TL50	2.21
	Tandberg 8000MXP	F2.6
	Tandberg 7000MXP	F2.6
	Tandberg 6000MXP	F2.6
	Tandberg 3000MXP	F2.6
	Tandberg 2000MXP	F2.6
	Tandberg 1500MXP	F2.6
	Tandberg 1000MXP	F2.6
	Tandberg 990MXP	F2.6
	Tandberg 880MXP	F2.6
Tandberg 770MXP	F2.6	
Tandberg 150MXP	L3.1	

6. VERSION HISTORY

Table 12. Version History

Version	Date Released	Major Features and Improvements
2.00	11/06/2003	<ul style="list-style-type: none"> • AES encryption • Mixed MCU • Dual stream • Private phonebook • Interlaced SIF • H.264 • PPPoE • Portuguese language
2.01	11/21/2003	DSB transmission problems fixed.
2.03	01/19/2004	Black or green picture problem fixed.
2.20	03/25/2004	<ul style="list-style-type: none"> • ITU-T standard-based H.239 supported. • Traditional Chinese added.
2.30	05/18/2004	<ul style="list-style-type: none"> • Audio quality improved. • Korean language added. • H.239 ON/OFF function supported.
2.31	05/24/2004	Echo canceller improved.
2.40	07/30/2004	<ul style="list-style-type: none"> • MPEG4 AAC codec supported over ISDN. • Six additional languages added. • DSB input can be switched via menu. • Customized logos supported. • "ECAGC*" command reduces background noise. • "GKDISP" command displays E.164 number and/or H.323 alias.
2.43	09/01/2004	<ul style="list-style-type: none"> • Audio/video problems in MCU mode fixed. • Voice repetition problem fixed.
2.44	10/14/2004	<ul style="list-style-type: none"> • Stripe noise fixed. • DSB data transmission problems fixed. • FECC problems fixed.
3.00	11/12/2004	<ul style="list-style-type: none"> • Echo canceller improved. • Noise suppression improved. • Audio distortion from double-talk reduced. • Support for: <ul style="list-style-type: none"> MCU On-the-Fly SIP SNMP Private MIB Arabic language
3.01	01/28/2005	<ul style="list-style-type: none"> • Video and audio transmitted correctly in mixed connections. • Terminal transmitting a signal is no longer reset. • Other terminals connected correctly with H.239 multipoint connections.

Table 12. Version History (Continued)

Version	Date Released	Major Features and Improvements
3.02	03/14/2005	<ul style="list-style-type: none"> • New service commands: NOCIPN NOSC SNDCMP • Miscellaneous improvements
3.03	04/13/2005	<ul style="list-style-type: none"> • MCU mode ON in ISDN cascade connection. • Host and terminal name limited to 30 characters. • Terminal name displayed correctly. • Audio and video problems with NEC MediaPoint terminal fixed.
3.11	06/06/2005	<ul style="list-style-type: none"> • UPnP supported. • Multipoint circuit categories standardized. • Terminal information displayed. • H.239 status displayed. • MCU split screen mode switched to full screen with one terminal. • TOS set by data type. • Camera position changed quickly. • Web interface improved. • PKS**** service command added to define video packet size.
3.12	06/29/2005	<ul style="list-style-type: none"> • Transmitted PC images displayed correctly through data solutions box after upgrade from V3.01 or earlier.
3.14	07/29/2005	<ul style="list-style-type: none"> • Camera control target changes quickly by pressing and holding (FAR/NEAR) button on remote commander. • Following functions corrected: Audio mode in MCU Forward function NAT function Voice Only display
3.21	12/15/2005	<ul style="list-style-type: none"> • Standard encryption supported. • Audio muted during DTMF tone. • Choices displayed for number of lines to set according to ISDN interface box. • Miscellaneous improvements added.
3.22	01/31/2006	<ul style="list-style-type: none"> • NLG service command added. • Error message changed when calling disconnected endpoint. • Encoding process in intra mode with H.264 CIF video corrected.