

SIEMENS

MOBILETT XP Digital

SP

Troubleshooting Guide

System

Imaging System

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System overview

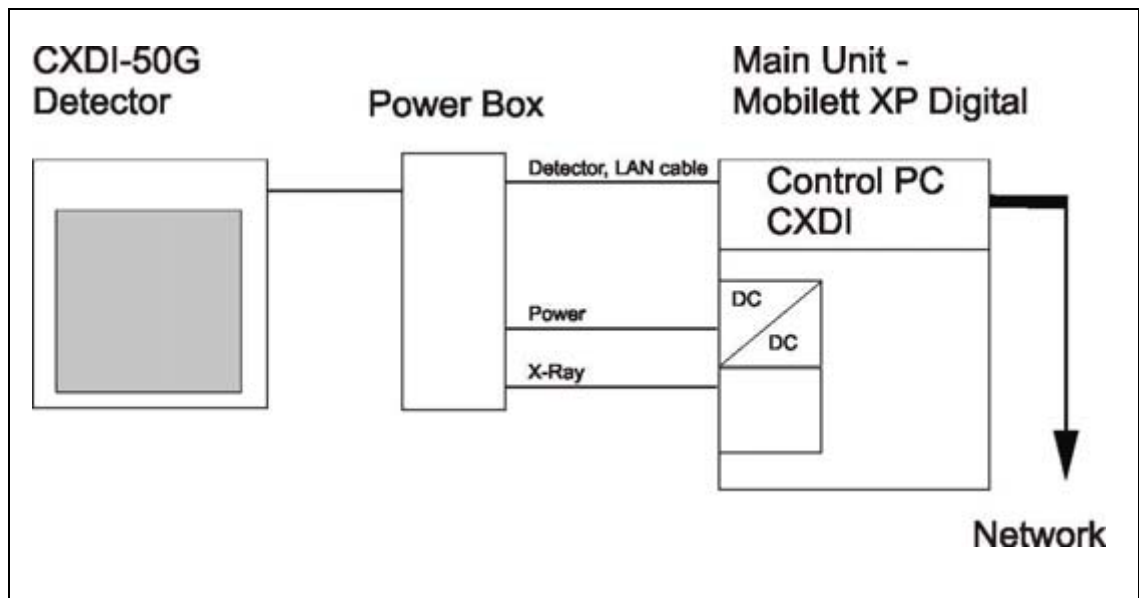


Fig. 1: Imaging system

The image system consist of the following components:

- CXDI PC (Control PC)
- Detector (imaging unit)
- Power box

CXDI PC

The CXDI PC, based on a laptop, contains the CXDI imaging software, the LAN interface board to the powerbox, the interface board to the MOBILETT XP Digital and the touch screen display located on the top of the MOBILETT XP Digital.

CXDI PC is the exclusive control PC for the detector.

Therefore, even if the CXDI PC does not meet the medical equipment safety regulations, it meets the regulations with respect to the MOBILETT XP Digital as a whole and fulfills electrical safety requirements for the sensor unit in the event that a patient is present.

Function of CXDI PC

- Driving control of the detector (imaging unit).
- Control of the operation unit.
- Interface with the X-ray generator.
- Correction processing for the image data. Offset correction, logarithmic conversion and gain correction are performed for the raw image obtained by LANMIT to form an original image.
- Image processing. Feature extraction, edge enhancement, DEP, gradation processing, MTF improvement and other image processing operations are performed.
- Displaying the image on the imaging monitor.
- Temporarily storing the image data.
- Transferring the image data to the network.

Hardware description of the CXDI PC

Motherboard

VGA interface, serial interface, LAN I/F to network, LAN interface to detector (1000BASE-T).

Touch screen

ELO Touch Screen Display

Detector (imaging unit)

The detector's (imaging unit's) function is listed below:

- It converts the acquired X-ray image to a light signal using the fluorescent screen and stores.
- After reading the stored electric signal (image) from the sensor, it performs the A/D conversion and temporarily stores it on the frame memory.
- It reduces the electric signal during storing and transfers it to the CXDI PC through the power box.

PCB-50Di board of the detector

The PCB-50Di board has the following functions:

- The sensor driving control. Reading the digital image signals output from the AD converter (PCB-50AD)
- Communication, X-ray image transferring with the CXDI PC via the power box on the Ethernet.
- Synchronization of X-ray generation and image acquisition via the power box.
- Control of the LED display.
- Detection of the grid using the grid detecting sensor.
- Relaying of the power supplied by the power box to the PCB-50AD.
- Detection of an unusual temperature, error reporting and stopping of sensor driving.
- Detection of the X-ray emission status.
- Holding of the factory data set.

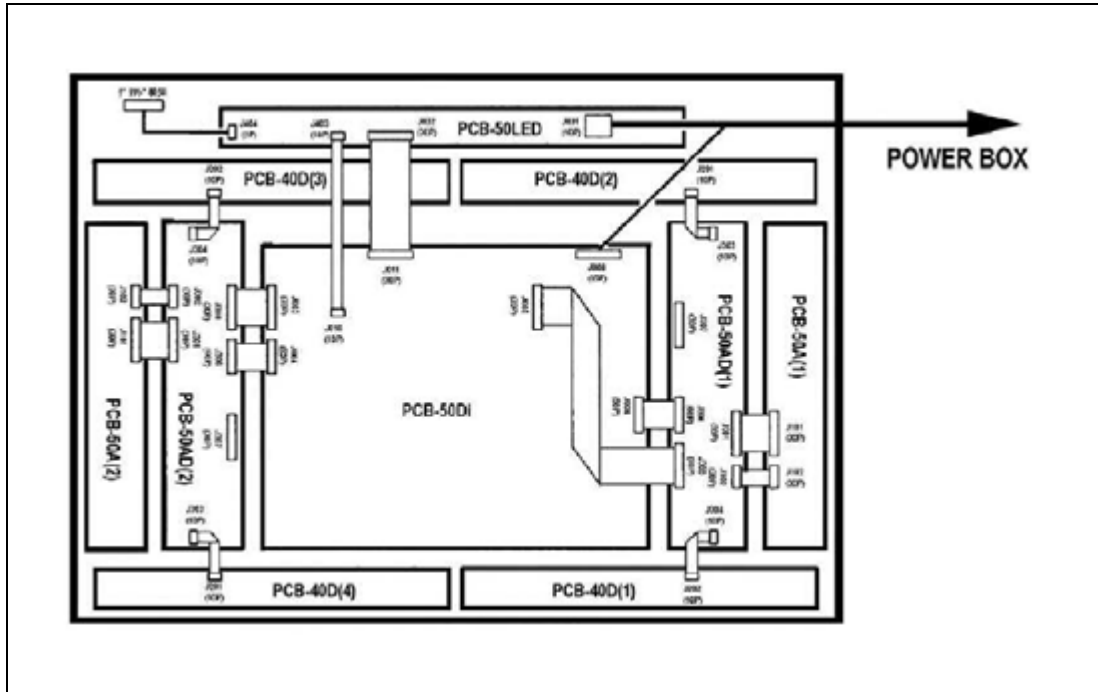


Fig. 2: PCB 50Di board of the detector

PCB-50 LED board of the detector

The PCB-50 LED board has the following functions:

- Power supply relay (5.5V/3.3V/24V/-10V)
- LED control (POWER/READY/BUSY)
- Grid sensor connection detection.
- Case grounding around the power supply.

(Each power supply cable must be attached to the case grounding point with screws.)

Power box

The power box that connects to CXDI PC has basic insulation against the 230V AC and also has an electric separation device.

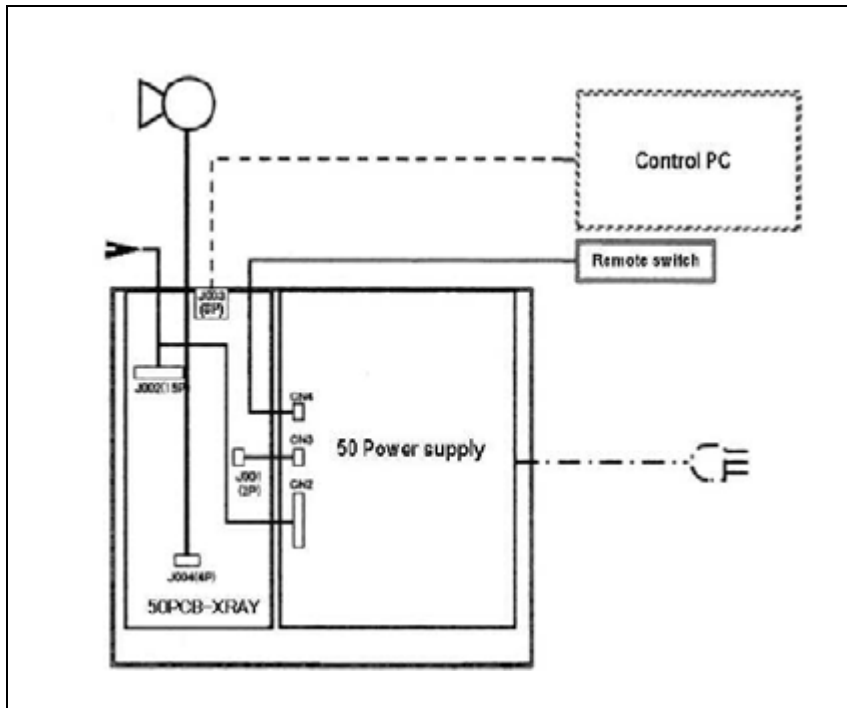


Fig. 3: Power box

The power box consists of the following parts:

- 50PCB-XRAY board (X-ray interface board),
- Power supply,
- Remote power switch.

Function of the power box:

The power box controls signal transition with the detector (imaging unit), power supply, signal transition with the X-ray generator. The power box can be connected to only one detector (imaging unit).

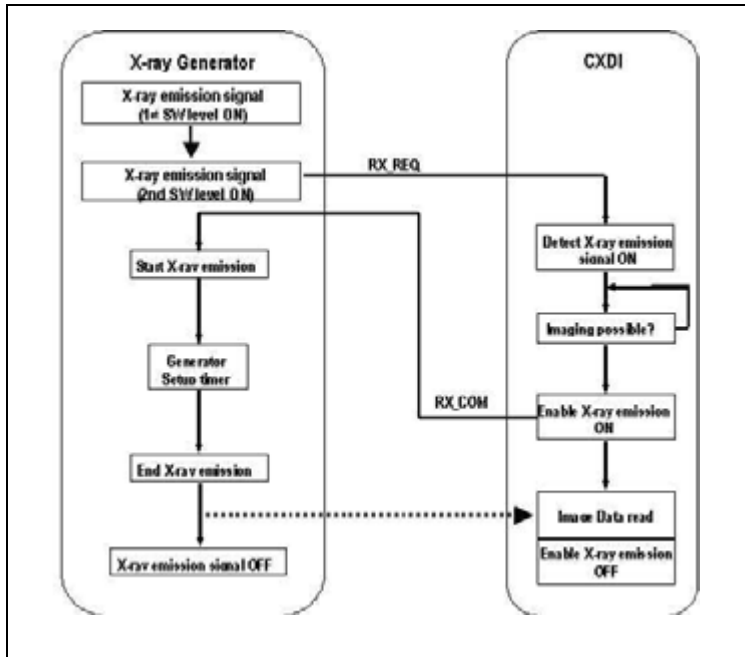


Fig. 4: Connection with power box and X-ray generator 1

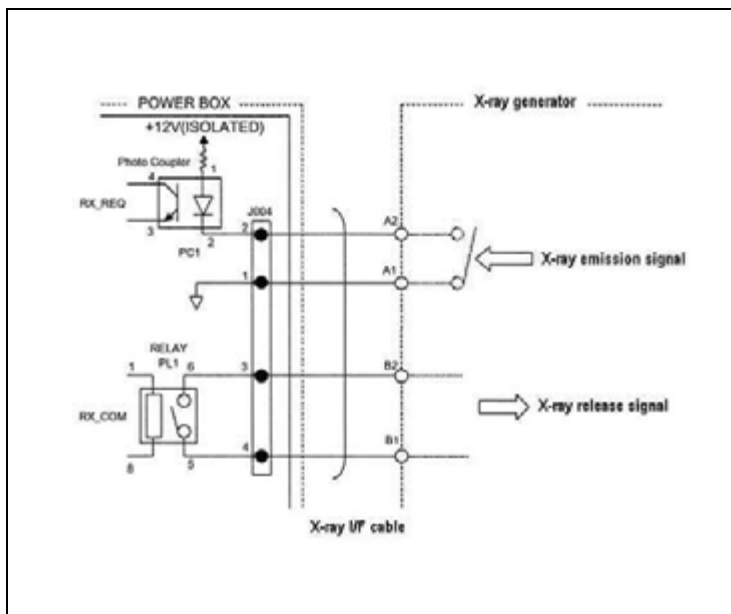


Fig. 5: Connection with power box and X-ray generator 2

PCB-50 X-ray board of the power box

The PCB-50 X-ray board has the following functions:

- Interfacing with the X-ray generator.
- Relaying the signals while insulating the Internet transition. (AC230V basic insulation)

- Setting the cable length (3/7m) in the 50 power supply capacity.
- Installing the firm initializing code on the imaging unit boot switch.

Remote switch

Output control of the 2nd side on the 50 power supply (7m) or 50 power supply (3m)

Power supply of the power box

Imaging unit with AC/ DC power supply mainly used

- Rated power supply (input) : AC 100 to 120V/AC 200 to 240V
- Rated power supply (output) : DC CH1 9.5V, CH2 9.5V, CH3 6.8V, CH4 -11.5V, CH5 27V

Additional functions:

1. Overcurrent protection:

Upon detection of an overcurrent, a shutdown and reset operation is performed automatically.

CH1, 2: Automatic current limiting over 105% of the PEAK current (3.5A)

CH3: Shutdown over 200% of the NOMINAL current (2.5A)

CH4: Automatic current limiting over 105% of the NOMINAL current (0.2A)

CH5: Automatic current limiting at the load current (500mA)

* When the CH3 is shutdown, CH4 and CH5 are shutdown at the same time.

2. Overvoltage protection:

Upon detection of an overvoltage, the output is shutdown.

Over 115% of the rated voltage

3. The 2nd side output voltage can be switched (ON/OFF) via the remote ON/OFF controller.

2nd side output display: LED (green)

Power box initialization switch

The LAN can be started with the factory settings when you turn on the power (the main power of the power box and remote switch) by holding down the initialization switch (see figure below) of the power box.

The 50G firmware contains the initialization and normal codes. (They are stored in the PCB-50Di flash ROM).

Normally, the normal code runs on a steady basis, and only normal code is updated when upgrading the firmware.

Use the initialization code when the normal code is unable to start for some reason or when you have lost the Ethernet settings. Using the initialization code sets the Ethernet-related settings to the default settings and allows you to perform the start-up operation for the initialization code.

In this case, the connection can be made by setting the Ethernet settings in the control PC to the 50G default (*2).

This default connection allows you to upgrade the firmware again and also to check and set the Ethernet settings again in order to recover the system.



Fig. 6: Power box installation switch

Initialization switch: Switch 1 mounted on PCB-50 XRY

Default settings: IP Address=192.168.100.11 (factory setting)

Available imaging time (normal imaging/long-term imaging)

Overview

There are two available imaging times:

1. Normal imaging (0 - 1000 msec)
2. Long-term imaging (1001 - 3000 msec)

From version 6.0, the maximum imaging time is now 3 seconds for the detector, which can be set on the GUI.

General

Service messages and messages from the operator's manual (customer messages) are included.

The following table shows the alert code window.

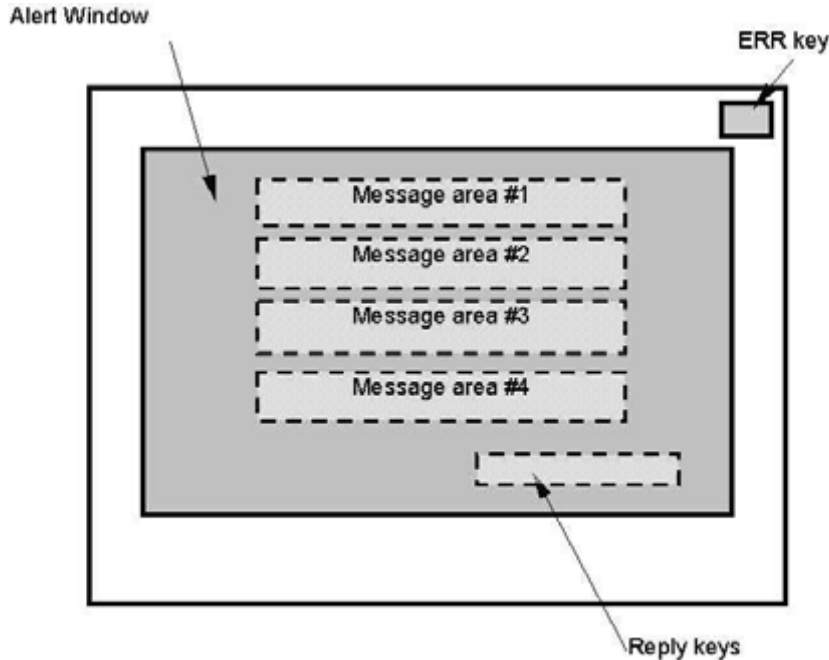


Fig. 7: Alert window

Area #	Severity	Auto-matic display	Blinking of "ERR"	Meaning
1	Fatal error	Yes	Yes	The whole screen blinks red and the alert window appears automatically. The system cannot be recovered. A service person must be called.
2	Alert	Yes	Yes	A red ERR key blinks and the alert window appears automatically. The exposure cannot be continued without a user operation.
3	Error	Yes	No	A red ERR key is displayed and the alert window appears automatically. The ERR key does not blink. The chances of the user being able to recover the system is better than for an alert.

Area #	Severity	Auto-matic display	Blinking of "ERR"	Meaning
4	Warning	No	Yes	An yellow ERR key blinks. The alert window does not appear unless the ERR key is pressed.
5	Attention	No	No	An yellow ERR key is displayed. It does not blink. The alert window does not appear unless the ERR key is pressed.

Fatal error

Tab. 1 Service Fatal Error Table

Code	Reply keys	Message
-100	OK,	<p>#1:Fatal error #2:Sensor unit: Self-check error #3:Detected an error.#4:ER(n) (xxxx) xxxx: Error code</p> <p>[Cause] An undefined error has been found in the sensor A/D board.</p> <p>[Operation after the reply key is pressed] Nothing</p>
-102	-14, -15, -95, -98	<p>-14 Error in starting the task in DLL (failed to begin thread.)</p> <p>-15 Error in DLL resource (driver does not start.)</p> <p>-95 Number of sensor units is incorrect (no sensor unit is connected.)</p> <p>-98Capture device cannot be found.</p>
-103	Shut down	<p>#1:Fatal error #2:READ timeout error #3:Failed to transmit the data.</p> <p>[Cause] Image transferring from Ethernet has failed.</p> <p>[Operation after the reply key is pressed] For the reply cannot be done, the system must be shutdown.</p>

Code	Reply keys	Message
-105	OK/ -97	<p>#1:Fatal error #2:CXDCAP.INI Open error #3:Install CXDCAP.INI file.</p> <p>[Cause] The cxdcap.ini file has not been installed.</p> <p>[Operation after the reply key is pressed] The system enters a fatal condition. All the sensor units will therefore be disconnected. A service person needs to be called in. However, you can transfer the image and use the study list.</p> <p>-97 Cxdcap.ini file not found.</p>
-522	OK	<p>#1:Fatal error #2:File Open Error:filename #3:File is not found.</p> <p>[Cause] For some reason, XXXX.BIN and XXXX.DCM files do not exist. Or, they cannot be read.</p> <p>[Operation after the reply key is pressed] Shutdown starts. Although this problem can be solved using the service tool, users must not use the service tool on their own. Take necessary actions in accordance with the service person"s instruction.</p>

Tab. 2 Customer Fatal Error Table

Error Code	Error Message	Remedy
-100	Detector Unit: Self Check Error: Detected an Error.	<ul style="list-style-type: none"> • Touch OK and shut down the system • If Shutdown is displayed, touch it. The system will automatically shut down. • If these errors occur, contact a Siemens representative or distributor.
-101	Capture Board Self Check Error: Detected Capture Board Error.	
-102	Capture Device Open Error: Failed to open capture device.	
-103	READ Timeout Error: Failed to transmit data.	
-104	Requested I/O pending error: Failed to access the device.	
-105	CXDCAP.INI Open Error: Install CXDCAP.INI file.	
-106	Capture Board SelfCheck Error: Detected Capture Board Error.	
-107	Power Supply Error: Shuts down after 10 seconds.	
-522	File Open Error: <(File name)>File not found.	

Alert

Tab. 3 Service Alert Table

Code	Reply keys	Message
-6	OK	<p>#1:Alert #2:System info error #3:A/D board info is updated.</p> <p>[Cause] The A/D board information is different from the former information. This problem occurs when the version of the A/D board has been updated or when the connected units have been changed. If this error occurs when no such changes have been made, it is attributed to another problem. In this case, a service person needs to be called in.</p> <p>[Operation after the reply key is touched] The A/D board information is renewed.</p>
-8	OK	<p>#1:Alert #2:System self-check error #3:Call a service person and let him/her know the error code.</p> <p>[Cause] An error has been found by a self-check.</p> <p>[Operation after the reply key is pressed] Although imaging is possible, image may be degraded. Therefore, a service person needs to be called in.</p>

Code	Reply keys	Message
-116	OK	<p>#1:Alert #2:Sensor unit:Self-check error #3:Detected an error. #4:ER(n) (xxxx) n: Sensor index (1 to 4) xxxx: Error code</p> <p>[Cause] An undefined error has been found in the sensor A/D board.</p> <p>[Operation after the reply key is pressed] Nothing</p>
-5002	OK	<p>#1:Alert #2:OPU-CCR RPC Error #3:OPU-CCR RPC Error</p> <p>[Cause] For some reason, the CCR software has shut down.</p> <p>[Operation after the reply key is pressed]</p>

Tab. 4 Customer Alert Table

Error Code	Error Message	Remedy
-4	System Info Error: Driver info is updated.	<ul style="list-style-type: none"> • Touch OK and shut down the system. • If these errors occur, contact a Siemens representative or distributor.
-5	System Info Error: Capture Board info is updated.	
-6	System Info Error: A/D board info is updated.	
-7	System Info Error: LANMIT info is updated.	
-8	System SelfCheck Error: Call a service person and inform him/her of the error code.	
-115	Capture Board Error: Detected Capture Board Error.	
-116	Detector Unit: Self Check Error: Detected an Error.	
-5002	OPU-CCR RPC Error: OPU-CCR RPC Error.	
-6001	OPU-CCR RPC Error: Operation has been canceled.	

Error

Tab. 5 Service Error Table

Code	Reply keys	Message
---	OK	<p>#1:Error #2:File Open Error:filename #3:File is not found.</p> <p>[Cause] The file may have been damaged.</p> <p>[Operation after the reply key is pressed]</p>
-1	OK	<p>#1:Error #2:Error #3:</p> <p>[Cause] Undefined error. This error indicates that it is not defined by the CCR manager. The CCR manager controls various tasks. If an error not defined in tasks occurs, error code "-1" is assigned to the error and displayed. This error rarely appears because most errors have been defined. Take the necessary action while referring to the system log for the CCR. Local undefined errors output by the OPU can be identified since they are displayed in the message box of the OS.</p> <p>[Operation after the reply key is pressed] After you confirm it, press OK.</p>
-2	OK	<p>#1:Error #2:Insufficient tmp disk space. Output the saved data or erase the backed up data. #3:</p> <p>[Cause] The remaining space in the temporary storage directory dttmp is less than the specified MB.</p> <p>[Operation after the reply key is pressed] Press OK after confirmation.</p>

Code	Reply keys	Message
-3	OK	<p>#1:Error</p> <p>#2:Insufficient queue disk space. Output the saved data or erase the backed up data.</p> <p>#3:</p> <p>[Cause]</p> <p>The remaining space in the queue storage directory dtque is less than the specified amount. Usually, this error does not occur because the "Insufficient tmp disk space" error occurs first.</p> <p>[Operation after the reply key is pressed]</p> <p>Press OK after confirmation.</p>
-120	OK	<p>#1:Error</p> <p>#2:Sensor unit: Self-check error</p> <p>#3:Detected an error.#4:ER(n) (xxxx) n: Sensor index (1 to 4) xxxx: Error code</p> <p>[Cause]</p> <p>An undefined error has been found in the sensor A/D board.</p> <p>[Operation after the reply key is pressed]</p> <p>Nothing</p>

Code	Reply keys	Message
-122	OK, 0xeff3, 0xeff4	<p>#1:Error #2:Sensor unit:Control error #3:Detected control error. Call a service person.</p> <p>[Cause] An error in the control line has been detected in the sensor A/D board.</p> <p>[Operation after the reply key is pressed] When the OK key is pressed, the sensor will be disconnected. (Access will not be allowed, as the system is in an "abnormal" state.) A service person needs to be called in.</p> <p>0xeff3, 0xeff4 "Sensor unit - power box(n)(eff3 or eff4)" 0xeff3: There might be problems the cable length setting (sensor power box and X-ray board cable). 0xeff4: The sensor power cable may be broken. n: Sensor index (1 to 4)</p>
-123	OK, cancel, 0xeff8, 0xeff7	<p>#1:Error #2: Sensor unit: PLD error #3: Detected PLD error. Call a service person.</p> <p>[Cause] A PLD error has been found in the sensor A/D board.</p> <p>[Operation after the reply key is pressed] When the OK key is pressed, the sensor will be disconnected. (Access will not be allowed, since the system is in an "abnormal" state.) If this error persists even after the system is rebooted, a service person needs to be called in.</p> <p>0xeff8, 0xeff "PLD err (n)(eff8)""PLD Config err (n)(eff7)" n: Sensor index (1 to 4)</p>

Code	Reply keys	Message
-125	OK, 0xeffb	<p>#1:Error #2:Sensor unit:Grid error #3:Because of the grid error, this image may have a quality problem.</p> <p>[Cause] Although a grid warning had been detected in the sensor A/D board, imaging was continued. Thus, the image may have been degraded.</p> <p>[Operation after the reply key is pressed] When the OK key is pressed, the screen returns to the normal display without any further action.</p> <p>0xeffb "Grid was changed during exposure (n)(effb)" n: Sensor index (1 to 4)</p>
-126	OK	<p>#1:Error #2:Sensor unit:Temperature error #3:The internal temperature of the sensor unit exceeded the temperature limit. Cannot capture images until the temperature goes below the limit.#4:TEMP OVER (n)(effa) n: Sensor index (1 to 4)</p> <p>[Cause] The sensor temperature has exceeded 49°C. Thus, the error for aborting the operation has been detected. The system cannot be used until the temperature decreases, which will take several tens of minutes.</p> <p>[Operation after the reply key is pressed] The sensors automatically enter the sleep mode. The host computer does nothing. If you try to make the system ready, the same error will occur again. Press [OK] to close the window, a few minutes later operate again. Note: The error might be able to be avoided by reducing the ambient temperature.</p>

Code	Reply keys	Message
-129	OK, 0xEFF00 xEFEF	<p>#1:Error #2:Sensor unit: Data transmit error #3:Failed to transmit the data.</p> <p>[Cause] Internal DMA has exceeded the time limit while reading the reduced image. Full image data transferring has been interrupted.</p> <p>[Operation after the reply key is pressed] No action required. (Usual operation)</p> <p>0xEFF00xEFEF n.a.</p>
-143	OK	<p>#1:Error #2:Calibration table error #3:Perform calibration.</p> <p>[Cause] No gain calibration table has been prepared. Or the serial number of the connected sensor unit is different.</p> <p>[Operation after the reply key is pressed] Perform calibration to make a gain calibration table.</p>
-144	OK	<p>#1:Error #2:Sensor unit configuration #3:Incorrect sensor unit configuration. Call a service person. #4:Invalid serial no.(n)(eff5 or eff6)n: Sensor index (1 to 4)</p> <p>[Cause] 0xeff5: Caused by the difference in serial number and DP number. 0xeff6: Caused by a false serial number being written.</p> <p>[Operation after the reply key is pressed] When the OK button is pressed, the sensor is disconnected. A service person needs to be called in. (Maintain unusual state, and do not access.)</p>

Code	Reply keys	Message
-302	OK	<p>#1:Error #2:Calibration error #3:Too much dose. Or collimator is used.</p> <p>[Cause] Excessive dose of radiation was used in exposure of image for white correction.</p> <p>[Operation after the reply key is pressed] Perform imaging again.</p>
-303	OK	<p>#1:Error #2:Calibration error #3:Too little dose. Or collimator is used.</p> <p>[Cause] Insufficient radiation dose was used in exposure of image for white correction.</p> <p>[Operation after the reply key is pressed] Perform imaging again.</p>
-304	OK	<p>#1:Error #2:Calibration error #3:Invalid data. Or collimator is used.</p> <p>[Cause] Too much difference in dose acquired by the panels.</p> <p>[Operation after the reply key is pressed] Perform imaging again.</p>

Code	Reply keys	Message
-305	OK	<p>#1:Error #2:Calibration error #3:Collimator may be used.</p> <p>[Cause] This error is not currently used.</p> <p>[Operation after the reply key is pressed] Perform imaging again.</p>
-306	OK	<p>#1:Error #2:QA process error #3:Image analysis error. Adjust image process parameter manually.</p> <p>[Cause] Feature extraction may have failed.</p> <p>[Operation after the reply key is pressed] The user must process the image manually.</p>
-310	OK	<p>#1:Error #2:REX value warning #3:REX is 999.</p> <p>It is under the minimum limitation value 9999. Please reconfirm the generator setting or exposure condition. If the condition is correct, adjust the image processing.</p> <p>[Cause] This error occurs when the REX value acquired by image processing after the imaging is less than the limit value.</p> <p>[Operation after the reply key is pressed] Nothing</p> <p>[Note] 999: REX value obtained by image processing 9999: Lower limit value</p>

Code	Reply keys	Message
-311	OK	<p>#1:Error</p> <p>#2:REX value warning</p> <p>#3:REX is 9999. It is under the maximum limitation value 999. Please reconfirm the generator setting or exposure condition. If the condition is correct, adjust the image processing.</p> <p>[Cause]</p> <p>This error occurs when the REX value acquired by image processing after imaging is more than the limit value.</p> <p>[Operation after the reply key is pressed]</p> <p>Nothing</p> <p>[Note]</p> <p>9999: REX value obtained by image processing 999: Upper limit value</p>
-402	OK	<p>#1:Error</p> <p>#2:Incomplete end error</p> <p>#3:The last image in the last study was not saved completely.</p> <p>[Cause]</p> <p>Failed to write the last image of the previous imaging operation.</p> <p>[Operation after the reply key is pressed]</p> <p>If previous images remain, they will be recovered.</p>

Code	Reply keys	Message
-403	OK	<p>#1:Error</p> <p>#2:Incomplete end error</p> <p>#3:Do you want to store captured images in the internal storage in order to recover them later? (Name of the patient) (Number of images)</p> <p>[Cause]</p> <p>The last image(s) was/were not queued due to an incomplete previous imaging operation.</p> <p>[Operation after the reply key is pressed]</p> <p>When OK is selected, the recovery process will start. When Cancel is selected, the last images will be deleted. In this case, normal exposure for imaging will start without recovering the last images. When CANCEL is selected, a confirmation message will appear before the image is deleted.</p>
-509	OK	<p>#1:Error</p> <p>#2:External storage error:</p> <p>#3:Selected directory or disk for storage can only be read.</p> <p>[Cause]</p> <p>The external storage medium for the stored data is read-only.</p> <p>[Operation after the reply key is pressed]</p> <p>The system returns to the state before the occurrence of the error.</p>
-512	OK	<p>#1:Error</p> <p>#2:External storage error:</p> <p>#3:Cannot recognize the removable disk. Set the disk properly and retry.</p> <p>[Cause]</p> <p>No medium is found on the removable disk.</p> <p>[Operation after the reply key is pressed]</p> <p>The system returns to the state before the occurrence of the error.</p>

Code	Reply keys	Message
-513	OK	<p>#1:Error</p> <p>#2:Media control error</p> <p>#3:Operation has been canceled because the external storage or directory is busy.</p> <p>[Cause]</p> <p>The external medium is busy deleting or writing data. This error occurs for example when you try to eject the disk while the external medium is busy.</p> <p>[Operation after the reply key is pressed]</p> <p>After confirmation, press OK.</p>
-514	OK	<p>#1:Error</p> <p>#2:External storage error:</p> <p>#3:The exposed images cannot be stored because the size of the folder partition is smaller than the exposed images. Use a new disk, erase the folder contents or enlarge the folder size and retry.</p> <p>[Cause]</p> <p>An image cannot be stored in a folder on the external storage medium when the size of the folder is smaller than the image. Enlarge the folder size in the system setting.</p> <p>[Operation after the reply key is pressed]</p> <p>Selecting RETRY, stores the image again, while selecting CANCEL cancels storage of the image to the external storage medium. When CANCEL is selected, a confirmation message appears before the image is deleted.</p>

Code	Reply keys	Message
-517	OK	<p>#1:Error</p> <p>#2:Internal storage error:</p> <p>#3:Processed image cannot be stored, because the internal storage memory capacity is insufficient.</p> <p>[Cause]</p> <p>The remaining space on the internal disk is insufficient.</p> <p>[Operation after the reply key is pressed]</p> <p>The system returns to the state before the occurrence of the error.</p>
-518	OK	<p>#1:Error</p> <p>#2:Internal storage error:</p> <p>#3:DICOM image cannot be stored, because the internal storage memory capacity is insufficient.</p> <p>[Cause]</p> <p>There is not enough space for storing the DICOM image.</p> <p>[Operation after the reply key is pressed]</p> <p>The system returns to the state before the occurrence of the error.</p>
-519	OK	<p>#1:Error</p> <p>#2:External storage error:</p> <p>#3: The external storage memory capacity is insufficient. Retry after making space on the disk.</p> <p>[Cause]</p> <p>The space on the external storage medium is insufficient.</p> <p>[Operation after the reply key is pressed]</p> <p>The system returns to the state before the occurrence of the error.</p>

Code	Reply keys	Message
-520	OK	<p>#1:Error #2:Internal storage error: #3:Exposed image cannot be stored, because the internal storage memory capacity is insufficient.</p> <p>[Cause] The remaining space on the internal disk is insufficient.</p> <p>[Operation after the reply key is pressed] The system returns to the state before the occurrence of the error.</p>
-521	OK	<p>#1:Error #2:Queue file open error: #3:Queue file is not found.</p> <p>[Cause] Failed to open the queue file. This error occurs when no queue file exists.</p> <p>[Operation after the reply key is pressed] *With the current system, this error is unlikely to occur.</p>
-599	OK	<p>#1:Error #2:File open error: #3:File is not found.</p> <p>[Cause] This error occurs when the system has failed to open the file during RESEND.</p> <p>[Operation after the reply key is pressed] Simply press OK. The system returns to the state before the occurrence of the error.</p>

Code	Reply keys	Message
-601	OK	<p>#1:Error #2:Resend error #3:File may have been automatically deleted.</p> <p>[Cause] The image cannot be resent because it was deleted for some reason during retrieval.</p> <p>[Operation after the reply key is pressed] The image being displayed on the re-print screen is made invalid and the image can no longer be resent.</p>
-5100	OK	<p>#1:Error #2:Sensor unit:Detect error #3:Check the sensor power unit or cable connection. To recover the system, shut it down.</p> <p>[Cause] The power of the imaging unit is OFF, or the cable is disconnected or damaged.</p> <p>[Operation after the reply key is pressed] The system only requires confirmation. Press OK. Only the problematic sensor is disabled.</p>
-5001	OK	<p>#1:Error #2:Sensor unit:Detect error #3:Check the sensor unit cable connection. To recover the system, shut it down.</p> <p>[Cause] The cable is not connected although it is set for the sensor.</p> <p>[Operation after the reply key is pressed] The system only requires confirmation. Press OK. Only the problematic sensor is disabled.</p>

Code	Reply keys	Message
-5002	OK	<p>#1:Error #2:Grid error #3:Remove grid for this exposure.</p> <p>[Cause] This error occurs when grids are detected in the buck/cassette setting where imaging is expected to be performed without grids.</p> <p>[Operation after the reply key is pressed] Press OK after the check.</p>

Tab. 6 Customer Error Table

Error Code	Error Message	Remedy
-2	Insufficient tmp disk space. Output the saved data or erase the backed-up data.	<ul style="list-style-type: none"> • Touch OK and delete images. • Touch OK and shut down the system. • If these errors occur, contact a Siemens representative or distributor.
-3	Insufficient tmp disk space. Output the saved data or erase the backed-up data.	
-120	Detector Unit: Self Check Error: Detected an Error.	
-121	Detector Unit: Sequence Error. Call a service person.	
-122	Detector Unit: Control Error: Detected Control Error. Call a service person.	
-123	Detector Unit: PLD Error: Detected PLD Error. Call a service person.	
-125	Detector Unit: Grid Error: Indicates that this image may have a quality problem.	
-126	Detector Unit: Temperature Error: The internal temperature of the detector unit has exceeded the temperature limit.	<ul style="list-style-type: none"> • Touch OK and try again after a while.

Error Code	Error Message	Remedy
-128	Detector Unit: Signal Line Error: Problem has occurred between detector unit and EO box. Call a service person.	<ul style="list-style-type: none"> • Touch OK and shut down the system. • If this error occurs, contact a Siemens representative or distributor.
-129	Capture Board: Data Transmit Error: Failed to transmit the data. Call a service person.	<ul style="list-style-type: none"> • Touch OK to close the window. As image quality cannot be guaranteed, take another exposure.
-130	Capture Board Error: Detected capture board error.	<ul style="list-style-type: none"> • Touch OK and shut down the system.
-131	Capture Board Control Error: Detected capture board control error. Call a service person.	<ul style="list-style-type: none"> • If these errors occur, contact a Siemens representative or distributor.
-132	Capture Board Error: Detected capture board error. Call a service person.	
-133	Capture Board Access Error: Detected Communication Error.	
-134	Capture Board: Sequence Error: Failed to synchronize with the detector unit. Call a service person.	
-135	Capture Board: Sequence Error: X-ray monitor in detector unit failed to detect start of radiation.	
-136	Capture Board: Data Transmit Error: Failed to transmit data. Call a service person.	
-137	Capture Board: Control Line Error: Control line error has occurred in capture board. Call a service person.	
-140	Acquisition Parameter Error: Detected illegal parameter error.	
-141	LUT Write Error: Quit the exam and perform calibration.	<ul style="list-style-type: none"> • Touch OK and calibrate the unit.
-143	Calibration Table Error: Perform calibration.	

Error Code	Error Message	Remedy
-144	Detector Unit Configuration Error: Incorrect detector unit configuration. Call a service person.	<ul style="list-style-type: none"> • Touch OK and shut down the system. • If these errors occur, contact a Siemens representative or distributor.
-302	Calibration Error: Dose too high or collimator in use.	<ul style="list-style-type: none"> • Touch OK. Adjust the exposure dose (mAs) or focal distance and repeat the exposure.
-303	Calibration Error: Dose too low or collimator in use.	
-304	Calibration Error: Invalid data or collimator in use.	<ul style="list-style-type: none"> • Touch OK and repeat the exposure. • Contact a Siemens representative or distributor if the collimator was used.
-305	Calibration Error: Collimator possibly in use.	
-306	QA Process Error: Image Analysis Error. Adjust image process parameter manually.	<ul style="list-style-type: none"> • Touch OK and process the image manually.
-310	REX Warning: REX is xxx. It is below lower limit xxx. Check generator setting and exposure conditions. If exposure conditions were correct, adjust IP parameters.	<ul style="list-style-type: none"> • Touch OK and adjust the dose.
-311	REX Warning: REX is xxx. It exceeds maximum limit. Check generator setting and exposure conditions. If exposure conditions were correct, adjust IP parameters.	
-402	Incomplete End Error: The last image in the last study was not saved completely.	<ul style="list-style-type: none"> • Touch OK and repeat the exposure.
-403	Incomplete End Error: Do you want to store captured images into internal storage in order to restore them later?	<ul style="list-style-type: none"> • Select OK to restore, or Cancel to delete the image.
-509	External Storage Error: Selected directory or disk for storage is read-only.	<ul style="list-style-type: none"> • Touch OK. Change the attribute of the storage medium and try again.
-512	External Storage Error: Cannot recognize the external storage. Check disk settings and retry.	<ul style="list-style-type: none"> • Touch OK and check the settings of the external storage medium.

Error Code	Error Message	Remedy
-513	Media Control Error: Operation has been canceled because the external storage or directory is busy.	<ul style="list-style-type: none"> • Touch OK and try again after a while.
-514	External Storage Error: Exposed images cannot be stored because capacity of folder partition is smaller than size of exposed images. Use a new disk, erase the folder contents, or increase the folder size and retry.	<ul style="list-style-type: none"> • Touch OK and set the Max Size of Disk.
-517	Internal Storage Error: Processed image cannot be stored because capacity of internal storage memory is insufficient.	<ul style="list-style-type: none"> • Touch OK and shut down the system . • If these errors occur, contact a Siemens representative or distributor.
-518	Internal Storage Error: DICOM image cannot be stored because capacity of internal storage memory is insufficient.	
-519	External Storage Error: Capacity of external storage memory is insufficient. Retry after making space on the disk.	<ul style="list-style-type: none"> • Touch OK. Replace the external disk and try again.
-520	Internal Storage Error: Exposed image cannot be stored because capacity of internal storage memory is insufficient.	<ul style="list-style-type: none"> • Touch OK and shut down the system. • If these errors occur, contact a Siemens representative or distributor.
-521	Queue File Open Error: Queue file not found.	
-599	File Open Error: File not found.	
-601	Resend Error: File may have been automatically deleted.	<ul style="list-style-type: none"> • Touch OK.
-5100	Detector Unit: Detect Error: Check the detector power unit or cable connection. If system recovery is desired, shut down system.	<ul style="list-style-type: none"> • Touch OK and shut down the system. • Check cable connections. • If the cause cannot be found, contact a Siemens representative or distributor.
-5101	Detector Unit: Detect Error: Check the detector power unit or cable connection. If system recovery is desired, shut down system.	

Error Code	Error Message	Remedy
-5102	Grid Error: Remove grid for this exposure.	<ul style="list-style-type: none"> • Touch OK and remove the grid from the detector unit.
-5202	Grid ID Error: Replace with the recommended grid (name of grid). Installed grid: (name of grid).	<ul style="list-style-type: none"> • Touch OK and check the grid in the detector unit.
-5203	Grid ID Error: This is a non-grid mode. Remove the grid.	<ul style="list-style-type: none"> • Touch OK and remove the grid from the detector unit.
-5206	Grid ID Error: This is a fixed-grid mode. Attach the grid.	<ul style="list-style-type: none"> • Touch OK and install the grid on the detector unit.

Warning

Tab. 7 Service Warning Table

Code	Reply keys	Message
-150	OK	<p>#1:Warning</p> <p>#2:Sensor unit:Self-check error</p> <p>#3:Detected an error.</p> <p>#4:ER(n) (xxxx)</p> <p>#4:"Firm PLD err(n) (eff1 or eff2)</p> <p>0xeff1: Failure has been detected in the received Hex format file while the Firm/PLD/DP files are downloading.</p> <p>0xeff2: Failure has been detected in the received Hex format file while the Firm/PLD are downloading. n: Sensor index (1 to 4) xxxx: Error code</p> <p>[Cause] An undefined error has been found in the sensor A/D board.</p> <p>[Operation after the reply key is pressed] Nothing.</p>
-151	OK 0xeffe 0xeffd 0xeffc	<p>#1:Warning</p> <p>#2:Sensor unit:Flash ROM error</p> <p>#3:Detected flash ROM error. Call a service person.</p> <p>[Cause] A warning on the flash ROM has been detected in the sensor A/D board.</p> <p>[Operation after the reply key is pressed] When the OK key is pressed, the screen returns to the normal display. Imaging can be performed by touching the exposure mode key again. Although imaging can be performed, a service person needs to be called in.</p>

Code	Reply keys	Message
-153	OK	<p>#1:Warning</p> <p>#2:Sensor unit:Temperature warning</p> <p>#3:The internal temperature of the sensor unit is approaching the temperature limit. Do not leave the sensor unit in the READY condition.</p> <p>#4:TEMP OVER (n)(eff9) n: Sensor index (1 to 4)</p> <p>[Cause]</p> <p>The warning sign is detected because the internal temperature of the imaging unit has approached the upper limit value.</p> <p>[Operation after the reply key is pressed]</p> <p>The sensor automatically enters the state of sleep. No operation is necessary on the host side. The same error occurs when the user tries to put this sensor into the READY state. In this case, press [OK] to close the window and continue to operate. This error might be able to be avoided by reducing the internal temperature or shortening the managing unit READY STATE TIME.</p>
-502	RETRY CANCEL	<p>#1:Warning</p> <p>#2:DICOM connect error</p> <p>#3:Cannot connect to target. Check network or port number setting.</p> <p>[Cause] Cannot be connected to the destination.</p> <p>[Operation after the reply key is pressed] When RETRY is selected, the image will be transferred again. When CANCEL is selected, transfer will be canceled after a confirmation message is displayed. Re-transfer is possible by sending the image from the study list.</p>

Code	Reply keys	Message
-503	RETRY CANCEL	<p>#1:Warning #2:DICOM transfer error #3:Error has occurred during association.</p> <p>[Cause] Network was cut off during communication.</p> <p>[Operation after the reply key is pressed] When RETRY is selected, the image will be transferred again. When CANCEL is selected, transfer will be cancelled after a confirmation message is displayed. Re-transfer is possible by transferring the image from the study list.</p>
-504	RETRY CANCEL	<p>#1:Warning #2:DICOM parameter error #3:DICOM transfer parameter is wrong.</p> <p>[Cause] DICOM transfer parameters are not correct.</p> <p>[Operation after the reply key is pressed] When RETRY is selected, the image will be transferred again. When CANCEL is selected, transfer will be cancelled after a confirmation message is displayed. Enter the correct parameters and transfer the image from the study list again.</p>
-505	RETRY CANCEL	<p>#1:Warning #2:DICOM response error #3:Receiving device reported an error in DICOM response. Check receiving device.</p> <p>[Cause] DICOM response was received properly. However, the target reported an error as a response.</p> <p>[Operation after the reply key is pressed] When RETRY is selected, the image will be transferred again. When CANCEL is selected, transfer will be canceled after a confirmation message is displayed. Re-transfer is possible by sending an image from the study list.</p>

Code	Reply keys	Message
-507	RETRY CANCEL	<p>#1:Warning #2:DICOM printer status error #3:CXDI has aborted DICOM transmission because of a FAILURE in the DICOM printer status. Check receiving device.</p> <p>[Cause] DICOM printer status was received properly. However, the target reported a FAILURE as the printer status, and image transfer was consequently cancelled.</p> <p>[Operation after the reply key is pressed] When RETRY is selected, the image will be transferred again. When CANCEL is selected, the transfer will be cancelled after a confirmation message is displayed. Re-transfer is possible by sending the image from the study list.</p>
-509	RETRY CANCEL	<p>#1:Warning #2:External storage error: #3:Selected directory or disk for storage can only be read.</p> <p>[Cause] The external storage medium is read-only.</p> <p>[Operation after the reply key is pressed] When RETRY is selected, the image will be stored. When CANCEL is selected, the storage of the image to an external storage medium will be cancelled after a confirmation message is displayed. Re-transfer is possible by sending the image from the study list again.</p>

Code	Reply keys	Message
-510	RETRY CANCEL	<p>#1:Warning</p> <p>#2:External storage error:</p> <p>#3:Selected directory or disk for storage does not exist. Or an image cannot be saved on external storage, because the external storage or directory is not properly set.</p> <p>[Cause]</p> <p>There is no directory or disk in the destination. Or recording cannot be performed due to system function error.</p> <p>[Operation after the reply key is pressed]</p> <p>When RETRY is selected, the image will be stored again. When CANCEL is selected, the storing of the image onto an external storage medium will be cancelled after a confirmation message is displayed. Re-transfer is possible by sending the image from the study list again.</p>
-512	RETRY CANCEL	<p>#1:Warning</p> <p>#2:External storage error:</p> <p>#3: Cannot recognize the removable disk. Set the disk properly and retry.</p> <p>[Cause]</p> <p>Disk is not inserted.</p> <p>[Operation after the reply key is pressed]</p> <p>When RETRY is selected, the image will be stored. When CANCEL is selected, the storing of the image will be cancelled after a confirmation message is displayed. Re-transfer is possible by sending the image from the study list.</p>

Code	Reply keys	Message
-514	RETRY CANCEL	<p>#1:Warning #2:External storage error: #3:The exposed images cannot be stored because the size of the folder partition is smaller than the exposed images. Use a new disk, erase the folder contents or enlarge the folder size and retry. The size of the folder partition: xxxxMB) (The size of the exposed images: xxxxMB)</p> <p>[Cause] Images cannot be stored in the folder when the folder size of the external storage medium is smaller than a study.</p> <p>[Operation after the reply key is pressed] When RETRY is selected, the image will be stored. When CANCEL is selected, the storing of the image will be cancelled after a confirmation message is displayed. Re-transfer is possible by transferring the image from the study list.</p>
-515	RETRY CANCEL	<p>#1:Warning #2:Internal storage error: #3:Selected directory for storage is read-only.</p> <p>[Cause] The external storage medium is read-only. Use a writable external storage medium.</p> <p>[Operation after the reply key is pressed] When RETRY is selected, the image will be stored on the internal disk. When CANCEL is selected, the storing of the image will be cancelled after a confirmation message is displayed. Re-transfer is possible by sending the image from the study list.</p>

Code	Reply keys	Message
-516	RETRY CANCEL	<p>#1:Warning</p> <p>#2:Internal storage error:</p> <p>#3:Selected directory for storage does not exist, or the path is incorrect.</p> <p>[Cause]</p> <p>There is no directory in the destination, or recording cannot be performed due to a system function error.</p> <p>[Operation after the reply key is pressed]</p> <p>When RETRY is selected, the image will be stored on the internal disk. When CANCEL is selected, the storing of the image will be cancelled after a confirmation message is displayed. Re-transfer is possible by sending the image from the study list.</p>
-517	RETRY CANCEL	<p>#1:Warning</p> <p>#2:Internal storage error:</p> <p>#3:Processed image cannot be stored, because the internal storage memory capacity is insufficient.</p> <p>[Cause]</p> <p>The space on the internal disk is insufficient.</p> <p>[Operation after the reply key is pressed]</p> <p>The QA process will be performed again.</p>
-518	RETRY CANCEL	<p>#1:Warning</p> <p>#2:Internal storage error:</p> <p>#3:DICOM image cannot be stored, because the internal storage memory capacity is insufficient.</p> <p>[Cause] There is not enough space to store the DICOM image.</p> <p>[Operation after the reply key is pressed] When RETRY is selected, image will be stored on the internal disk. When CANCEL is selected, the storing of the image will be cancelled after a confirmation message is displayed.</p>

Code	Reply keys	Message
-519	RETRY CANCEL	<p>#1:Warning #2:External storage error: #3: The external storage memory capacity is insufficient. Retry after making space on the disk.</p> <p>[Cause] There is not enough space on the external storage medium.</p> <p>[Operation after the reply key is pressed] When RETRY is selected, the image will be stored on the external storage medium. When CANCEL is selected, the storing of the image will be cancelled after a confirmation message is displayed.</p>
-520	RETRY CANCEL	<p>#1:Warning #2:Internal storage error: #3:Exposed image cannot be stored, because the internal storage memory capacity is insufficient.</p> <p>[Cause] Space on the internal disk is insufficient.</p> <p>[Operation after the reply key is pressed] When RETRY is selected, the image will be stored on the internal disk. When CANCEL is selected, the storing of the image will be cancelled after a confirmation message is displayed.</p>
-6000	OK	<p>#1:Warning #2:Calibration error #3:STAND(SENSOR-ID:XXX) Time has elapsed since the last calibration. Calibrate now.</p> <p>[Cause] This error occurs when calibration has not been performed within the set time.</p> <p>[Operation after the reply key is pressed] The calibration screen appears to prompt you to perform calibration.</p>

Tab. 8 Customer Warning Table

Error Code	Error Message	Remedy
-150	Detector Unit: Self Check Error: Detected an error.	<ul style="list-style-type: none"> • Touch OK and shut down the system. • If these errors occur, contact a Siemens representative or distributor.
-151	Detector Unit: Flash ROM Error: Detected Flash ROM Error. Call a service person.	
-152	Detector Unit: Sequence Error: This image may have a problem.	<ul style="list-style-type: none"> • Touch OK and repeat the exposure, since the image quality may be degraded.
-153	Detector Unit: Temperature Warning: The internal temperature of the detector unit is too high! Do not leave the detector unit in READY condition.	<ul style="list-style-type: none"> • Touch OK to close the dialog window. <p>Lower the temperature of the room where the detector unit is installed, or wait until the temperature in the detector unit drops.</p>
-160	Capture Board Error: Detected capture board error.	<ul style="list-style-type: none"> • Touch OK and shut down the system. • If these errors occur, contact a Siemens representative or distributor.
-161	Capture Board Error: Detected capture board error. Call a service person.	
-162	Capture Board: Sequence Error: X-ray monitor in detector unit failed to detect start of radiation.	
-163	Capture Board: Sequence Error: X-ray monitor in detector unit failed to detect end of radiation.	
-164	Image Quality attention: FD has stopped radiation. Check image.	<ul style="list-style-type: none"> • Touch OK and repeat the exposure, since the image quality may be degraded.
-502	DICOM Connect Error: Cannot connect to target. Check network or port number setting.	<ul style="list-style-type: none"> • After confirming that the network is OK, touch RETRY. Or touch Cancel and check the settings.
-503	DICOM Transfer Error: Error has occurred during association.	
-504	DICOM Parameter Error: DICOM transfer parameter is wrong.	<ul style="list-style-type: none"> • Touch RETRY. Or touch Cancel and check parameter settings.
-505	DICOM Response Error: Receiving device reported an error in DICOM response. Check receiving device.	<ul style="list-style-type: none"> • Check that the printer or storage medium is OK. Then touch RETRY. • Or touch Cancel and check the DICOM settings.

Error Code	Error Message	Remedy
-507	DICOM Printer Status Error: FD has aborted DICOM transmission because of a FAILURE in DICOM printer status. Check receiving device.	<ul style="list-style-type: none"> • After eliminating the printer error, touch RETRY. • Or touch Cancel and cancel the transfer.
-509	External Storage Error: Selected directory or disk for storage is read-only.	<ul style="list-style-type: none"> • Replace the disk with a writable disk and select RETRY. • Or select Cancel. Or contact the network administrator.
-510	External Storage Error: Selected directory or disk for storage does not exist. Or image cannot be saved on external storage, because the external storage or directory is not properly set.	
-512	External Storage Error: Cannot recognize the external storage. Check disk settings and retry.	
-514	External Storage Error: Exposed images cannot be stored because capacity of folder partition is smaller than size of exposed images. Use a new disk, erase folder contents, or increase folder size and retry.	
-515	Internal Storage Error: Selected directory for storage is read-only.	<ul style="list-style-type: none"> • Touch OK and shut down the system. • If these errors occur, contact a Siemens representative or distributor.
-516	Internal Storage Error: Selected directory for storage does not exist, or attribution is incorrect.	
-517	Internal Storage Error: Processed image cannot be stored because capacity of internal storage memory is insufficient.	<ul style="list-style-type: none"> • Touch RETRY after the green mark has disappeared from the message area of the exposure screen.
-518	Internal Storage Error: DICOM image cannot be stored because capacity of internal storage memory is insufficient.	<ul style="list-style-type: none"> • Select RETRY to save the image to the disk again. Or select Cancel.
-519	External Storage Error: Capacity of external storage memory is insufficient. Retry after compressing data.	<ul style="list-style-type: none"> • Replace the disk with a writable disk and select RETRY. • Or select Cancel. Or contact the network administrator.

Error Code	Error Message	Remedy
-520	Internal Storage Error: Exposed image cannot be stored because capacity of internal storage memory is insufficient.	<ul style="list-style-type: none">• Select RETRY to save the image to the disk again.• Or select Cancel.
-6000	Calibration Error: *** have passed since the last calibration. Perform calibration.	<ul style="list-style-type: none">• Touch OK and calibrate the unit.

Attention

Tab. 9 Service Attention Table

Code	Reply keys	Message
-506	OK	<p>#1:Attention</p> <p>#2:DICOM response warning</p> <p>#3:Although transfer finished properly, the receiving device reported a warning in the DICOM response. Check receiving device.</p> <p>[Cause]</p> <p>DICOM response was received properly. However, the target reported a warning as a response.</p> <p>[Operation after the reply key is pressed]</p> <p>Checks only if the system is OK because the system is normal.</p>
-508	OK	<p>#1:Attention</p> <p>#2:DICOM printer status warning</p> <p>#3:Although transfer finished normally, the receiving device reported a WARNING in the DICOM printer status. Check receiving device.</p> <p>[Cause]</p> <p>DICOM printer status was received properly. However, the target reported a WARNING as the printer status.</p> <p>[Operation after the reply key is pressed]</p> <p>Only checks if the system is OK.</p>
-511	OK	

Tab. 10 Customer Attention Table

Error Code	Error Message	Remedy
-506	DICOM Response Warning: Although transfer finished properly, receiving device reported a warning in DICOM response. Check receiving device.	<ul style="list-style-type: none"> • Touch OK and check the settings of the output destination.
-508	DICOM Printer Status Warning: Although transfer finished normally, receiving device reported a WARNING in DICOM printer status. Check receiving device.	<ul style="list-style-type: none"> • Touch OK and replace the external disk before the capacity becomes insufficient. ** is the value you have set.
-511	External Storage Attention: Remaining space in external storage is less than **% .	

Hardcopy messages

Error return values for DICOM print services

Tab. 11 DICOM Print Service messages

Sample error	Return value	CXDI description/ log output
Success	0x00	There is no log output in this case.
Invalid parameter	0x00000001	<p>CXDI description: DICOM connection error (CCRTRANS_ERR_DICOMPARAM)</p> <p>-----</p> <ul style="list-style-type: none"> • The log output in this case is shown below. - -s Silent mode; do not print results of all print commands - -t) Set called AE title to title in Association RQ - -v Use verbose mode for DUL and SRV facilities - -x Canon Hidden Special Mode - node The host name that is running a print server - port TCP/IP port number of print server - file One or more files that contain preformatted images for printing - image) A list of one or more images to send
The server has not started up. Server fails to start.	0x00180012	<p>CXDI description: DICOM connection error (CCRTRANS_ERR_NOT_CONNECT)</p> <p>The log output in this case is shown below.</p> <p>-----</p> <p>-18-135933[d2]ERR: d0012 Attempt to connect to unknown host: test</p> <p>18-135933[d2]ERR: 130012 Peer aborted Association(or never connected)</p> <p>18-135933[d2]ERR:180012 Failed to establish association</p> <p>18-132600[127]ERR:60012 TCP Initialization error: Invalid argument</p> <p>18-132600[127]ERR:130012 Peer aborted Association (or never connected)</p> <p>18-132600[127]ERR:180012 Failed to establish association</p>

Sample error	Return value	CXDI description/ log output
After a command request was sent to the server, an error was returned in response.	0x10	CXDI description: DICOM response error (CCRTRANS_ERR_RESP) The log output in this case is shown below. ----- -(Not determined)
After a command request was sent to the server, a warning was returned in response.	0x18	CXDI description: DICOM response warning (CCRTRANS_WRN_RESP) The transfer process was successful, but a warning was returned from the server. The log output in this case is shown below. ----- -(Not determined)
The printer status has returned an error.	0x20	CXDI description: DICOM printer status error (CCRTRANS_ERR_PRN_STATUS) The log output in this case is shown below. ----- -(Not determined)
The printer status has returned a warning.	0x28	CXDI description: DICOM printer status warning (CCRTRANS_WRN_PRN_STATUS) The transfer process was successful, but a warning was returned as the printer status. The log output in this case is shown below. ----- -(Not determined)
Other errors	Values other than those above	CXDI description: DICOM communication error(CCRTRANS_ERR_DICOM_TRANSE) The log output in this case depends on the specific error. A typical example is shown below. ----- -18-140933[d2]ERR : c0082 SRV Send (DATA SET) failed in SRV_SendDataSet 18-140933[d2]ERR : 190082 SRV Request failed in SRV_NCreateRequest 18-140933[d2]ERR : 70012 NULL_key passed to routineDUL_ReleaseAssociation

Calibration of the detector

General:

The detector is to be calibrated:

- every 26 weeks.
- In the event of an excessive amount of pixel dropouts on images displayed in the image preview window.

During the calibration procedure 4 images must be exposed.

Prerequisite

- Remove the grid if applicable
- Center the tube unit above the detector.
- Set an SID of 150cm
- Use the most common X-ray parameter used by the customer, e.g. 70 kV, 1.8 mAs at the MOBILETT XP Digital.

Procedure

- Select "SYSTEM/CALIBRATION" from the application UI.
- Enter, e.g., the following parameters in the exposure data boxes = 4 exposure; 70KV; 1.8 mAs, SID 150cm
- Be sure the detector is centered with respect to the tube without any objects between them.
- Click on "Start" to begin calibration.
 - ⇒ Wait until the system is ready for calibration
- Follow the instructions given by the system.



4 exposures are used to calibrate the system. No error messages should appear. After the calibration procedure, the successful calibration is announced.

If the calibration error message "Too much/little dose" or "Collimator is used" is displayed, perform calibration again after adjusting the X-ray exposure condition, for example by increasing or reducing the mAs or KV settings.

If calibration fails again, try the self-test procedure described in this document or contact the Uptime Support Center.

- Exit the program via "Exit".
- Restart the MOBILETT XP Digital

Self-test

General

The self-test is for checking the image data transfer route and performance of the detector in case of a problem.

In the self-test one X-ray test is performed.

Notes

Exposure conditions for the test should be the same as during calibration.

No grid is used.

Align the system as for an ordinary exposure, such as when the whole imaging area of the detector is to be exposed.

An error may occur when the detector is only partially exposed.

Be sure there is no object between the the detector and the X-ray tube. Otherwise, the test may fail.

Prerequisite

- Remove the grid if applicable.
- Center the tube unit above the detector.
- Set an SID of 150cm

Procedure

- Select "SYSTEM/SELF-TEST" from the application user interface.
- Enter, e.g., the following parameters in the exposure data boxes = 4 exposure; 70KV; 1.8 mAs, SID 150cm
- Be sure the detector is centered with respect to the tube without any objects between them.
- Click on "START" to begin the self-test.

⇒ Wait until the system is ready for self-test.



- Follow the instructions given by the system

If the calibration error message "Too much/little dose" or "Collimator is used" is displayed, perform calibration again after adjusting the X-ray exposure condition, for example by increasing or reducing the mAs/ KV settings.

1 exposure is used for the self-test of the system. The self-test runs 5 tests (table below) after release of the X-ray. This requires some time. No error messages should appear.

Test 1	Calibration test	ca. 20 sec
Test 2	Transmission test 1	ca. 6 sec
Test 3	Transmission test 2	ca. 6 sec

Test 4	Offset test	ca. 30 sec
Test 5	Detector unit check	ca. 30 sec

If the self-test fails, check the error message or check the conditions for self-test again. Use a higher dose (mAs), or repeat the self-test. If the self-test fails again, contact the Uptime Support Center.

- Exit the program via “Exit”.
- Restart the MOBILETT XP Digital

Backup of drive partitions

This section describes how to back up all drive partitions (C:\ and D:\) of the CXDI PC with "GHOST."

After the startup procedure is complete, one GHOST backup of all drive partitions has to be created without patient data images.

Preliminary step:

- MOBILETT XP Digital system DVD required.
- min. 2 empty recordable CDs (2 items are included in the shipment).
- Delete all test and patient images (local storage and extended storage) from the CXDI PC!

Procedure

- Switch off the MOBILETT XP Digital.
- Open the top cover of the MOBILETT XP Digital, lay it sideways on a table or the like and access the PC interior. Do not disconnect any cables.
- Open the PC so that it is possible to use the PC keyboard.
- Switch on the MOBILETT XP Digital and press "F2" on the keyboard during boot.
 - ⇒ Access the BIOS mode of the computer.
- Enter the BIOS password "99999".
- In the menu, verify that the first boot device is set to DVD ROM; change it if necessary. Save changes and exit the menu.
- Insert the system DVD into the CD RW drive to boot from DVD.
 - ⇒ The following menu opens:
 - 1 - Back up the complete hard drive (c: + d:)
 - 2 - Restore the complete hard drive (c: + d:)
 - 3 - Back up the complete hard drive (c:
 - 4 - Restore the complete hard drive (c:
 - 5 - Use GHOST interactive
 - E - Exit
 - ⇒ Drive c: contains the operating system, drive d: contains the application software.
- Label the empty backup CD with the date, "Install" and number it.
- Enter "1" and confirm with "Return"; wait for a message to appear.
- Following the message window,
 - ⇒ A DOS window will open on completion of the backup. This concludes the system backup of the image system.
- Enter "E" to exit
- Switch off the MOBILETT XP Digital.
- Save all backup CDs in a secure place within the MOBILETT XP Digital.
- Reinstall the PC and the top cover.

Restore of a drive partition

Restore is required only if the imaging system is not working properly.

Restore c: + d: is performed when problems occur in the Win XP operating system or imaging system application software.

After restoring a drive partition, the current organ programs and current customer adaptations must be reinstalled using the last imaging system backup CD of the configuration (refer to the "Backup/Restore of the Configuration" chapter).

Preliminary step:

- The MOBILETT XP Digital system DVD is required.
- The last MOBILETT XP Digital backup CD "Install#" is required.

Procedure

- Switch off the MOBILETT XP Digital.
- Open the top cover of the MOBILETT XP Digital, lay it sideways on a table or the like and access the PC interior. Do not disconnect any cables.
- Open the PC so that it is possible to use the PC keyboard.
- Switch on the MOBILETT XP Digital and press "F2" on the keyboard during boot.
 - ⇒ Access the BIOS mode of the computer.
- Enter the BIOS password "99999".
- In the menu, verify that the first boot device is set to DVD ROM; change it if necessary. Save changes and exit the menu.
- Insert the CD MOBILETT XP Digital system DVD into the CD RW drive and boot from the DVD.
 - ⇒ The following menu opens:
 - 1 - Back up the complete hard drive (c: + d:)
 - 2 - Restore the complete hard drive (c: + d:)
 - 3 - Back up the complete hard drive (c:
 - 4 - Restore the complete hard drive (c:
 - 5 - Use GHOST interactive
 - E - Exit
 - ⇒ Drive c: contains the operating system, drive d: contains the application software.
- Enter "2" and confirm with "Enter"; wait for a message to appear.
- Following the message window,
 - ⇒ A DOS window opens at the end of the restore operation. This concludes the system restore of the image system.
- Enter "E" to exit.
- The configuration data must now be restored to reinstall all organ program and customer adaptations. Refer to the "Backup/Restore of the Configuration" chapter.
- Switch off the MOBILETT XP Digital.

Backup/restore of the configuration

The imaging system configuration should be backed up following every service call to ensure quick system restore.

Advantage:

- current customer organ programs
- current configuration files.

Included in this backup are images in extended storage, organ programs, configuration data of the imaging system.

The local network data from the operating system is not stored (e.g. IP address, subnet mask, gateway IP address).

From the service tool of the imaging system, all backup data is stored in the d:/_Siemens_ folder. Save data to CD in Windows XP by selecting "Write these files to CD" in Internet Explorer.

Backup of the configuration

Preparation:

Prior to every backup, perform a check to determine whether the images in extended storage have been deleted or made anonymous.

Procedure

- Switch off the MOBILETT XP Digital.
- Open the top cover of the MOBILETT XP Digital, lay it sideways on a table or the like and access the PC interior. Do not disconnect any cables.
- Open the PC so that it is possible to use the PC keyboard.
- Switch on the Mobilett XP Digital.

From the user interface of the MOBILETT XP Digital:

- Select "SYSTEM > CONFIGURATION".
- Select "ADMINISTRATOR SETUP > SERVICE TOOL".
- Click on the password box
 - ⇒ - Enter the administrator password and confirm with "OK" (refer to the password list).
- Select "SERVICE TOOL > Copy files to _Siemens_" in the menu.
- Start via "START".
 - ⇒ Enter the Siemens service password and confirm with "OK" (refer to the password list).
- Close the window via "OK".
 - ⇒ All required files are now copied to the D:_Siemens_ directory.

Burn data to CD

To save data to CD, Windows XP "Write data to CD" from Windows Explorer has to be used.

- Select "SERVICE TOOL > Explorer" in the menu.
- Label an empty backup CD with the date and "Backup of the Configuration" and number it.
- Insert the labeled "Backup of the Configuration" CD into the CD drive.
- In Explorer, copy folder "D:_Siemens_\Configuration" onto drive e:.
- Right-click on drive e: folder and select "Write these files to CD"
- Following the messages,
 - ⇒ All configuration data from _Siemens_ saved to CD.
- Wait until the burning process is ready.
- Close Explorer.
- Exit the service tool window via "Exit".
- Exit administrator setup via "OK".
- Switch off the MOBILETT XP Digital
- Save all backup CDs to a secure place within the MOBILETT XP Digital
- Reinstall the PC and the top cover.

Restore of the configuration

The most current complete "Backup of the Configuration" CD has to be used to restore the configuration data. Use Internet Explorer to copy the configuration data previously copied to the backup CD to the D:\TEMP folder. All configuration data and organ programs are restored with the imaging system "SERVICE TOOL/restore configuration to ccr-folder".

Preparation:

- The last MOBILETT XP Digital "Backup of the Configuration" CD is required.

Procedure

- Switch off the MOBILETT XP Digital.
- Open the top cover of the MOBILETT XP Digital, lay it sideways on a table or the like and access the PC interior. Do not disconnect any cables.
- Open the PC so that it is possible to use the keyboard of the PC.
- Switch on the Mobilett XP Digital.

From the user interface of the MOBILETT XP Digital:

- Select "SYSTEM > CONFIGURATION".
- Select "ADMINISTRATOR SETUP > SERVICE TOOL".
- Click on the password box
 - ⇒ - Enter the administrator password and confirm with "OK" (refer to the password list).

- Select “SERVICE TOOL > Explorer” in the menu.
- Start via “START”.
 - ⇒ Enter the Siemens service password and confirm with “OK” (refer to the password list).
- Insert the most recent labeled "Backup of the CONFIGURATION" CD into the CD drive.
- Use Windows Explorer to copy the "e:\Configuration" folder to drive d:\TEMP.
- Close Windows Explorer.

Restore of configuration files

- Select “SYSTEM > CONFIGURATION”.
- Select “ADMINISTRATOR SETUP > SERVICE TOOL”.
- Click on the password box
 - ⇒ - Enter the administrator password and confirm with “OK” (refer to the password list).
- Select “SERVICE TOOL > restore configuration to ccr-folder” in the menu.
- Start via “START”.
 - ⇒ Enter the Siemens service password and confirm with “OK” (refer to the password list).
 - ⇒ All required files are copied to the D:\CCR directory.
- Close the window via “OK”.
- Exit the “SERVICE TOOL” window via “Exit”.
- Exit “ADMINISTRATOR SETUP” via “OK”.
- Switch off the MOBILETT XP Digital
- Reinstall the PC and the top cover.
- Restart the system.

Password list

BIOS (supervisor)	99999
User cxdi (Siemens - configuration)	()Siemens()
User admin_siemens (Siemens - configuration)	mxdpi
User cxdi (delivery condition Canon)	ccrdeburg
Ccrsetup	99999
Administrator user interface (user-defined)	""
Administrator user interface (master password)	99999
Siemens Service	()Siemens()

Generator module configuration

The MOBILETT XP Digital is delivered with preconfigured generator module cgbbig3.dll for communication between the imaging system and generator. Do not change these values.

Procedure for checking the generator module:

- Select SYSTEM/CONFIGURATION/ADMINISTRATOR SETUP/MODULE/GENERATOR.
- Enter the administrator password.
 - ⇒ See password list.
- Check CXDI GEN value: cgbig3 (Fig. 8 / p. 64).
- Check the generator communication module: valid (Fig. 8 / p. 64).
- Click "OK".



Fig. 8: Generator setup

SMPTE test image

Find the SMPTE image for test uses under the organ program “Test/ SMPTE”.

- The MOBILETT XP Digital is switched on.
- Create a patient “IQ Test” and call up the organ program “Test/ SMPTE”.
- Wait until “READY” appears on the display and press the exposure switch.
- Wait until the image is transferred to the display.
- On the exposure screen, select test, then the exposure mode “SMPTE” and wait until “READY” appears.

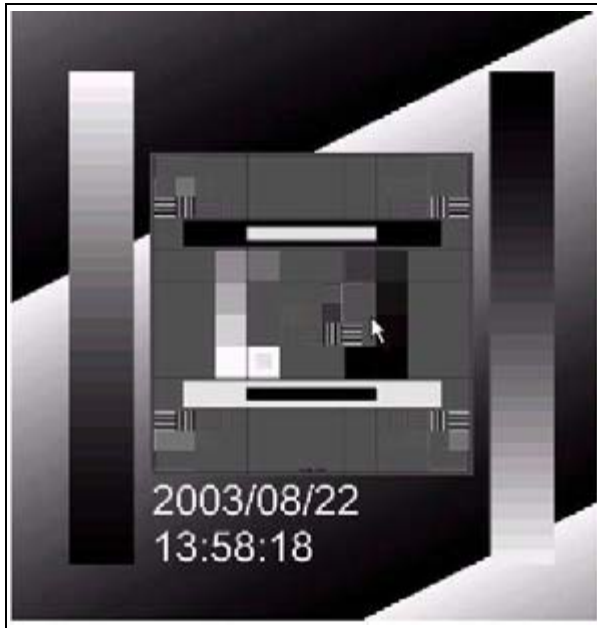


Fig. 9: Imaging system

How to access the OS

This is the procedure for shutting down the application software and accessing Windows.

NOTE

Never perform the following operation when the CXDI host program is operating, such as during the QA process, image transfer, communication with RIS or generator, etc.

Access to the OS is allowed only for the service engineer. Since important settings and files are saved there, never allow the user access to the OS because the CXDI system will not operate properly if the operation is not performed properly.

Procedures

- Switch off the MOBILETT XP Digital.
- Open the top cover of the MOBILETT XP Digital, lay it sideways on a table or the like and access the PC interior. Do not disconnect any cables.
- Open the PC so that it is possible to use the keyboard of the PC.
- Switch the MOBILETT XP Digital on.
- Select SYSTEM/CONFIGURATION/ADMINISTRATOR SETUP/SERVICE TOOL.
- Click on the password box.
 - ⇒ Enter the administrator password and confirm with “OK” (refer to the password list).
- Select “exit to OS” in the menu.
- Start via “START”.
 - ⇒ Enter the Siemens service password and confirm with “OK” (refer to the password list).
 - ⇒ The application software closes.

Checking the firmware of the imaging system

- Start up the MOBILETT XP Digital.
- Select “SYSTEM > SETUP MENU > VERSION INFORMATION”

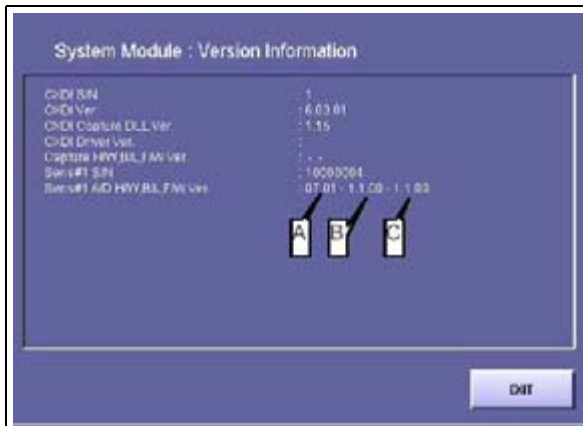


Fig. 10: CXDI firmware

- A. Hardware version
This is the version of the detector hardware. It changes according to the setting of the dipswitch on the PCB-50Di board in the detector.
- B. Firmware initialization code version
This is the version of the initialization code written on the 50Di PCB board of the detector. The initialization code will be downloaded and the settings will be reset to the default (factory) settings by turning ON the power while pressing the initialization switch on the power box. Display “1.1.0” on the screen indicates version 1.01.00.
- C. Firmware normal code version
This is the version of the normal code installed on the 50Di PCB of the detector. Usually the system operates with this code. It must be updated as required. Display “1.1.00” on the screen indicates version 1.01.00.

Chapter	Page	Change
All	n.a.	Editorial changes
Firmware of imaging system	n.a.	The content of the “Firmware of Imaging System” chapter has been transferred to the Miscellaneous chapter.