



UMS4335-W

Digital Flat-Panel X-RAY Detector

User Manual for S4335-W

Samsung Electronics Co., Ltd.

This manual is provided for the installation and operation of S4335-W.

Please read this manual before the detector install and use.

© 2013 Samsung Electronics Co., Ltd. All rights reserved.

■ ■ Revision History

Version	Date	Page	Revision
1.0	2013 April	-	1 st Edition
1.1	2013 July	α 37	The main revised item are as below - Table 1 OPERATING TIME TABLE
1.2	2014 May	α 28	The main revised item are as below - Changed Power Supply Box Input
1.3	2014. June	α 51 ~ 58	Add FCC Statement of Conformance Add EMC Declaration

Table of Contents

● About this Manual	7
■ Symbols Used in This Manual	7
■ Intended for use	8
■ User Requirements	8
■ Service Center	8
1. Safety instructions	9
● Safety Instructions	9
■ System Symbols	10
■ System Maintenance Checkpoints	12
■ General Safety	13
■ Electrical Safety	14
■ Mechanical Safety	15
■ Fire Safety	15
■ Safety from Explosion	15
■ EMC (Electromagnetic Compatibility)	Error! Bookmark not defined.
■ Label	16
■ Maintenance, Cleaning and Disposal	16
■ Disclaimer	17
2. System Overview	18
● System Overview	18
■ System Purposes	18
■ Product components	19
■ Examination Room Components	20
■ Control Room Components	21
3. System Components	22
● System Components	22
■ Detector	22
■ Power Supply Box	27
■ Main Cable	28
■ Battery Recharger	29
■ Battery	32

4. Operating the System Hardware	34
● Operating the System Hardware.....	34
■ Checking Connection.....	34
■ Operation.....	35
■ Operating description.....	36
5. Appendices.....	37
■ REQUIRED PUBLIC STATEMENT FOR GPL/LGPL/GPLv2/OpenSSL/CPOL LICENSED SOFTWARE USED IN THIS PRODUCT.....	38
GNU GENERAL PUBLIC LICENSE	39
GNU LESSER GENERAL PUBLIC LICENSE	44
BSD LICENSE	49

Table 1 Special Symbol.....	11
Table 2 System Maintenance Checkpoints.....	12
Table 3 COMPONENTS.....	19
Table 4 LED STATUS.....	23
Table 5 POWER SUPPLY BOX DESCRIPTION.....	27
Table 6 BATTERY RECHARGER INDICATE LED.....	29
Table 7 BATTERY RESIDUAL DISPLAY.....	32
Table 8 BATTERY INDICATE LED.....	33
Table 9 CHECKING THE POWER STATUS OF COMPONENTS (S4335-W)	35
Table 10 POWER OFF STATUS.....	35
Table 11 OPERATING TIME TABLE.....	36




Figure 1 Examination Room Components.....	20
FIGURE 2 RECHARGER.....	21
FIGURE 3 RECHARGER ADAPTER.....	21
FIGURE 4 WIRELESS DETECTOR.....	22
FIGURE 5 INDICATE LED.....	23
FIGURE 6 DO NOT DROP.....	24
FIGURE 7 Be CAREFUL OF DETECTOR LOCATION.....	25
FIGURE 8 KEEP WEIGHT DISTRIBUTED EVENLY.....	25
FIGURE 9 AVOID LOCALIZED WEIGHT.....	25
FIGURE 10 POWER SUPPLY BOX.....	27
FIGURE 11 MAIN CABLE.....	28
FIGURE 12 BATTERY RECHARGER.....	29
FIGURE 13 BATTERY INSERT.....	30
FIGURE 14 BATTERY LOCK.....	30
FIGURE 15 BATTERY.....	32
Figure 16 IP SET UP.....	34
FIGURE 17 POWER APPLIED COMPONENTS (S4335-W).....	35
Figure 18: TIMING CHART.....	36

■ About this Manual

■ Symbols Used in This Manual

The specifications and details of this manual may be changed in order to improve the product or to enhance its performance

The following symbols are used throughout this manual to alert the user to the relevant safety instructions or to any useful information when using this system

Symbol	Name	Description
	Warning	Indicates content which, if you fail to follow the accompanying instructions, may cause death or serious personal injury.
	Caution	Indicates content which, if you fail to follow the accompanying instructions, may cause personal injury or damage to the product.
	Note	Provides users with additional information on the topic for better understanding.

Please note that our company does not take responsibility for any accidents and is not obligated to do free repair service for any damage of the equipment due to the user's negligence which results from failure to follow the contents in this manual. Make sure you are familiar with the safety precautions and usage procedures. Also note that the product features may slightly differ from the contents of this manual depending on the specifications.

■ Intended for use

S4335-W, Digital Flat Panel X-Ray Detector is indicated for digital imaging solution designed for providing general radiographic diagnosis of human anatomy targeting both adult and children. It is intended to replace film based radiographic diagnostic systems and provide more precise case diagnosis and treatment planning on a real time basis for physicians and radiologists. Not to be used for mammography and direct cardiac application.

■ User Requirements



CAUTION

- This equipment should be only operated by users who have received professional medical education and training, such as physicians, radiologists, and other medical specialists.
- Please read the user manual and the safety information carefully before using this equipment. Operating the equipment without reading the safety information may result in personal injury to the patient or to yourself.

■ Service Center

- Korea : Service Center 080-022-9797

Head Quarters

- 129 Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea

1. SAFETY INSTRUCTIONS

■ Safety Instructions












□ In this chapter, information of safety instructions and regulations are provided. It is provided to protect users of the system from unintended safety hazard and prevent property damage, please read thoroughly and keep instructions. If additional training is required, consult your dealer or the service center of the manufacturer.



□ Before using this system, please read safety instructions thoroughly. The manufacturer is not responsible for any damages and accidents caused by violating such safety instructions or regulations.

■ System Symbols

Table 1 shows the symbols related to maintaining the safety of the patient and the user.

	Alternate current
	Direct current
	Protective earth (Ground)
	Off (power : disconnect from the main switch)
	On (power : connect to the main switch)
	Identifies terminals which, when connected together, bring various parts of a piece of equipment or of a system to the same potential.
	Indicates content which, if you fail to follow the accompanying instructions, may cause personal injury or damage to the product.
	Indicates that the dangerous factors can be occurred caused by High Voltage.
	Indicates that the accompanying operating instructions in the manual must be followed to operate the equipment safely.
	TYPE B Applied part
	Marks it contains radio transmitting device.








	Avoid contact with water
	No unauthorized or unlawful modification
	Waste electrical and electronic equipment (WEEE)
	Temperature limitation
	Marks fragile device that requires full attention when handling.
	Manufacturer
	EC Representative

Table 2 SPECIAL SYMBOL

■ System Maintenance Checkpoints

To ensure the system performance and usability along with safety, regular maintenance and checking the condition are required. To secure safety of both patient and operator and to ensure the performance of the system, check the system on a regular interval. For periodic inspection of the system, consult your dealer or the manufacturer's service center.

No.	Item	Category	Checkpoints	Check Interval	Remark
1	Noise / Vibration	In use	Check noise and vibration from each operating parts of the system.	1 year	
2	Power Supply box	While in use	Check the power supply box voltage while the equipment s turned off.	1 year	
3	Appearance	While in use	Run a visual inspection to check if the appearance shows any abnormalities, such as loosened bolts or had grips, transformation, etc. while the equipment is turned off.	1 year	
4	Cables	Before Using	Check cable runs for worn out cables, damage or short circuited, broken wires, etc. while the equipment is turned off.	6 months	
5	Grounding	While in use	Check the earth-grounding is intact, not broken or loosened terminal. (Grounding resistance should be below 0.1Ω.)	1 year	
6	Installation Checkpoints	When Installing	When installing, check that the equipment is leveled and firmly fixed.	1 year	

Table 3 SYSTEM MAINTENANCE CHECKPOINTS



WARNING

- When inspecting on checkpoints requiring no power, please make sure to keep the system turned off.

Classification

- The type of protection against electric shock: Class I equipment
- The degree of protection against electric shock: Type B applied part
- The degree of protection against ingress of water: Ordinary equipment
- The method(s) of sterilization or disinfection: Not applicable
- The degree of safety of application in the presence of a FLAMMABLE ANAESTHETIC MIXTURE WITH AIR or WITH OXYGEN OR NITROUS OXIDE: Not applicable
- Mode of operation: As momentary continuous operation

■ General Safety

- Before using the equipment, the user should check that:
 - All components are connected correctly.
 - All components are operational when the system is powered on.
 - Neither the patient nor the user is present in the examination room when powering the equipment on.



- If any electrical or mechanical fault occurs, stop using the system immediately.
You can identify faults from the display or warnings.



- Please consult the manufacturer before connecting a component from another system to this system. Any auxiliary device connected to the system must be IEC certified (data processing equipment: IEC60950-1, medical electrical equipment: IEC60601-1). Also, if the auxiliary device is connected to a signal I/O port, it should comply with IEC60601-1 and/or IEC60601-1-1.



Do not connect the instrument with anything other than specified. Otherwise, it may result in fire or electric shock.



- Medical equipment requires periodic maintenance and management. For more information, refer to 1. Maintenance, Cleaning and Disposal.



- If an error message appears while the system is in use, it may stop operating. When an error message appears, contact the service center



- The manufacturer will not accept liability for:
 - Fault, damage or personal injury incurred as a result of the user incorrectly performing maintenance on the system
 - Personal injury incurred due to the user's carelessness
 - Fault, damage or personal injury incurred due to use of an ancillary device which is not provided by the manufacturer.



- When Problem Occurs
Should any of the following occur, immediately turn OFF the power of each instruments, unplug the power cable from the AC outlet, and contact SAMSUNG representative or distributor.

- When there is smoke, odd smell or abnormal sound.
- When liquid has been spilled into the instrument or a metal object has entered through an opening.
- When the instrument has been dropped and it is damaged.



- This detector should be used by selected users. If not you fully aware of the factor of exposure, the manual, and the schedule of organization, This could be dangerous for the patients and users.

■ Electrical Safety



□ In compliance with IEC 60601-1, this medical equipment complies with the requirements for Safety class I, type B.



□ This system must be used in an environment complying with the requirements of the IEC.



□ Do not remove the safety cover of this system needlessly. When it is removed, the high voltage current inside the system may cause electric shock.



□ Be careful to ensure that no liquids enter the system.



□ If chemicals are spilled or evaporate, it may result in fire or electric shock through contact with electric parts inside the instruments. Also, some disinfectants are flammable. Be sure to take care when using them.



□ Be sure to turn OFF the power of each instrument before connecting or disconnecting the cables. Also, do not handle them with wet hands. Otherwise, you may get an electric shock that may result in death or serious injury.



□ Do not cut or process the cables. Also, do not place anything heavy, including the instrument on it, step on it, pull it, bend it, or bundle it. Otherwise, the cable may be damaged, which may result in fire or electric shock.



□ Be sure to hold the plug or connector to disconnect the cable. If you pull the cable, the core wire may be damaged, resulting in fire or electric shock.



□ Do not turn ON the system power when condensation is formed on the instrument. Otherwise, it may result in fire or electric shock.



□ Do not spill liquid or chemicals onto the instrument or, in cases where the patient is injured, do not allow it to become wet with blood or other body fluids, as doing so may result in fire or electric shock. In such situation, protect the instrument with disposable covering as necessary.

For safety reasons, be sure to turn OFF the power of each instrument when the inspections indicated in this manual are going to be performed. Otherwise, it may result in electric shock.

When the instrument is going to be cleaned, be sure to turn OFF the power of each instrument, and unplug the power cable from the AC outlet. Otherwise, fire or electric shock may result.



□ Never disassemble or modify the product as it may result in fire or electric shock. Also, since the instrument incorporates parts that may cause electric shocks and other hazardous parts, touching them may cause death or serious injury

■ Mechanical Safety



□ Never remove the cover (Detector, Power Box, Recharger, Battery Pack, and Adapter) or cables unless directed to do so by a professionally trained engineer.



□ When an examination is in progress, auditory and visual communication between the patient and the system user must be possible at all times.



□ Be careful not to pinch any part of your or the patient's body or clothing while using the system.



□ Do not hit or drop the instrument. The instrument may be damaged if it receives a strong jolt, which may result in fire or electric shock if the instrument is used without it being repaired.

■ Fire Safety



□ Do not operate the system in a location where there is a danger of fire.



□ In the event of a fire, stop the entire system immediately and disconnect the power cable. Make sure to extinguish the fire with a carbon dioxide fire extinguisher.

■ Safety from Explosion



□ Do not operate the system in a location where there is a danger of explosion. This system is not designed to be used in a location where there is a danger of explosion, and does not comply with the AP/AGP standard.

■ Label



- For information on the types and attachment locations of the Detector Component labels, refer to Labels.

■ Maintenance, Cleaning and Disposal

➤ Maintenance

- Inspect the equipment periodically for patient and user safety.
- The instrument must be repaired by a qualified engineer only. If it is not repaired properly, it may cause fire, electric shock, or accident.

➤ Cleaning



- Always turn off the equipment completely before cleaning.



- Do not open the cover and insert liquids into the system.



- When cleaning the exterior of the system, use a soft cleaning cloth dampened with tepid Water and soap. Do not use detergents or chemical solutions.



- While a maintenance personnel is cleaning the room, cables connected to the equipment may be lifted or pulled.

When lifting , or pulling cables, the connection with the equipment may be disconnected causing malfunction, electric shock, or danger of fire. Also, water may be absorbed into the equipment if mopped with a damp cloth, which may cause electric shocks or fire.



- If the equipment generates abnormal noises, contact the service center immediately. The user must not arbitrarily disassemble, repair, or modify the equipment. Fire or electric shock may result.



- Always be sure to keep checking the condition of the system and the patient to ensure they are normal during the use of the instrument. If any problem is found, take appropriate measures, such as stopping the operation of the instrument, as required.

➤ Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in countries with separate collection systems)



This marking on the product, accessories or literature indicates that the product and its electronic accessories should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

➤ Environment of Use and Storage



□ Does not use or store the instrument near any flammable chemicals such as alcohol, thinner, benzene, etc. Also, this instrument is not a category AP or APG equipment. If chemicals are spilled or evaporate, it may result in fire or electric shock through contact with electric parts inside the instruments. Also, some disinfectants are flammable. Be sure to take care when using them.



□ Do not install the instrument in a location with the conditions listed below. Otherwise, it may result in failure or malfunction, fall or cause fire or injury.

- Close to facilities where water is used.
- Where it will be exposed to direct sunlight.
- Close to air-conditioner or ventilation equipment.
- Close to heat source such as a heater.
- Prone to vibration.
- Insecure place.
- Dusty environment.
- Saline or sulfurous environment.
- High temperature or humidity.
- Freezing or condensation.

Do not place the storage case in a location with the conditions listed below.

- Where the cable of the sensor unit will be strongly pulled when the sensor unit is put into the case, otherwise, the cable may be damaged, resulting in fire or electric shock.
- Where someone might get their foot caught in the cable of the sensor unit is put in the case. Otherwise they could trip over, resulting in injury.

■ Disclaimer

- The manufacturer assumes no liability for any failure or damage which may occur by using other company's products
- The manufacturer assumes no liability for any failure or damage that may occur from installing, relocating, modifying, maintaining, or repairing the equipment by any personnel other than designated personnel by the manufacturer.
- The manufacturer assumes no liability for any accidents or damage on the equipment which may occur due to operations performed without following the relevant precautions or instructions in this manual..
- The manufacturer assumes no liability for any failure or damage due to natural disasters such as fire, earthquake, flood, and lightning.
- The manufacturer assumes no liability for erroneous diagnostic criteria or results.
- The manufacturer assumes no liability for any failure or damage which may occur due to operations performed for any purposes other than its intended use.
- This equipment should be operated under the specified conditions. The manufacturer assumes no liability for any failure or damage which may occur due to operations performed under conditions other than those specified in this manual. For more information on the operating conditions, refer to Appendices.

2. SYSTEM OVERVIEW

■ System Overview

■ System Purposes

The S4335-W is a portable digital X-ray flat panel wireless detector that can generate Images of any part of the body. This X-ray imaging system consists of a scintillator directly coupled to an a-Si TFT sensor.

S4335-W can be used for radiographic imaging of human body parts such as head, Chest, spinal, abdominal, particular, hand, foot, and other internal organs. However, do not use the system for mammography purposes.

Radiated X-rays through the body is processed to produce radiography by the detector. Converted electric signal is processed by the signal processor to amplify and digitize data And the result is transferred to the workstation.

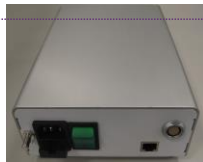
■ Product components

Item	Part Name	Qty	Description
1	Detector	1	Front view of the device
2	Power Supply Box	1	Source of necessary electricity
3	Battery Recharger	1	To recharge an extra battery
4	Battery Pack	2	Source for wireless connection
5	Recharger Adaptor	1	Source of the battery pack recharger
6	Main Cable	1	To connect x-ray detector with Power Supply Box

Table 4 COMPONENTS



Detector



Power Supply Box



Battery pack Recharger



Battery pack



Recharger Adapter



Main Cable

Commented [오전1]: DC 24V 삭제 사진



■ Examination Room Components

The components of S4335-W can be divided into the examination room components and the control room Components in accordance with their installation locations.

The below figure 1 shows S4335-W Examination Components.



Detector



Power box



Main cable

Figure 1 EXAMINATION ROOM COMPONENTS

All examination room components of the system should be used inside a shielded environment.

Commented [오전2]: DC 24V 삭제반영

■ Control Room Components

The control room for S4335-W is configured as shown in Figure.

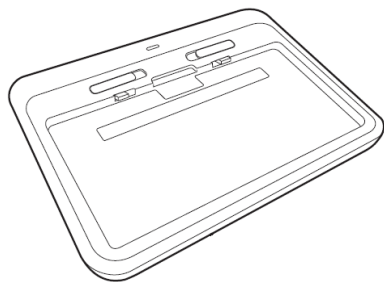


FIGURE 2 RECHARGER



FIGURE 3 RECHARGER ADAPTER

3. SYSTEM COMPONENTS

■ System Components

■ Detector



FIGURE 4 WIRELESS DETECTOR

This Flat-Panel, wireless digital X-ray detector is designed for generating images of any part of the body. It makes high-resolution, high-sensitive digital images.

➤ Overview

The S4335-W is a portable digital x-ray flat panel detector that can generate images of any part of the body. This x-ray imaging system consists of a scintillator directly coupled to an a-Si TFT sensor. It makes high-resolution, high-sensitive digital images.

➤ Product features

- Based on a-Si TFT active matrix
- Compact (15 mm thickness) and light weight (less than 3.2 kg)
- High resolution : ~ 3.57 lp/mm
- 14-bit digital output
- Easy integration

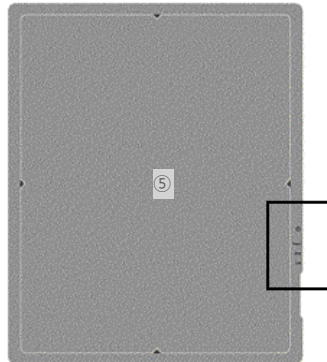
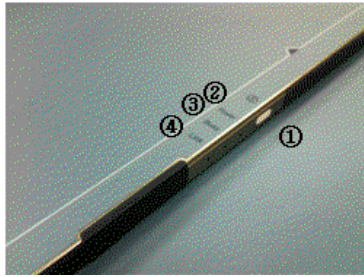


FIGURE 5 INDICATE LED

Item	Description
Detector	① Power ON/OFF Button
	② Power Status Indicator → Blue colored indicator is constant when Power ON
	③ Internal Processing Status Indicator → Green colored indicator flashes during internal processing
	④ Interface Link Indicator → Wired mode : Blinking in Blue while connecting with workstation → Wireless mode : Green colored indicator is constant
	⑤ Active Pixel Area: This is an area which converses X-ray through the patient into the image.

Table 5 LED STATUS

You cannot get the patient body image from the outside of domain.

➤ Notes for Using the Detector

- Handling

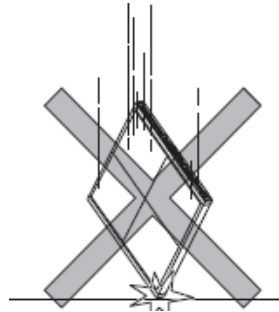


FIGURE 6 DO NOT DROP

Handle the instrument carefully, as it may be damaged if something is hit against it, dropped, or receives a strong jolt.

Embedded Mechanical shock sensor specification is 100G.

- Before Exposure

If the instrument is used with condensation formed on it, problems may occur in the quality of the instrument.

Sudden heating of the room in cold areas will cause condensation to form on the instrument. In this case, wait until condensation disappears before performing exposure.

When an air-conditioner is going to be used, be sure to raise/lower the temperature gradually so that a difference in temperature in the room and in the instrument does not occur, to prevent forming of condensation.

- During Exposure

Do not apply excessive weight to the sensor unit. Otherwise, the sensor may be damaged.

The detector and patient must be taken from a fixed state. Otherwise, the performance may be degraded.

- Limit of Load

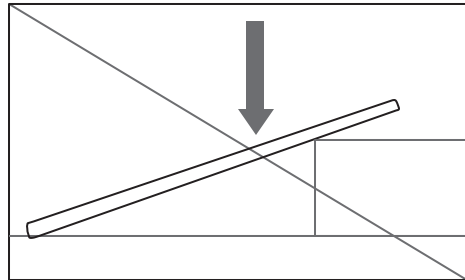


FIGURE 7 Be CAREFUL OF DETECTOR LOCATION

Be sure to use the sensor unit on a flat place so it will not bend.
Otherwise, the sensor may be damaged.

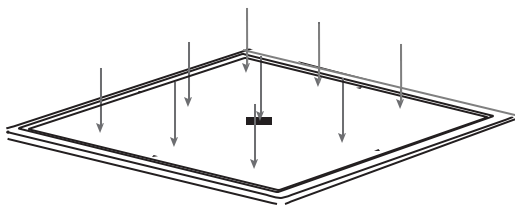


FIGURE 8 KEEP WEIGHT DISTRIBUTED EVENLY

- Uniform load

Supposing the distribution of the detection part on S4335-W, Do not load over 150Kg.

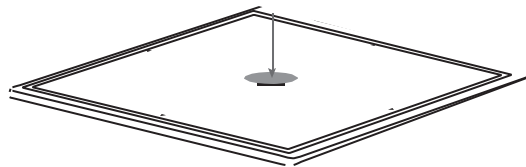


FIGURE 9 AVOID LOCALIZED WEIGHT

- Others



- Be sure to reconnect the cables to the proper connectors. Otherwise, the instrument may malfunction or may be damaged.



- Never use with other power supplies and cables. Use DEPS9601 only

- During Cleaning

- Do not use anything other than neutral detergent for cleaning the cover of the instrument. Otherwise, the coating will be corroded.

- Storage

- Be sure to store the sensor unit a safe place where it will not fall or drop
- When not using the portable detector on the flat place or using the detector on the uneven Place, Be cautious for damage.

■ Power Supply Box

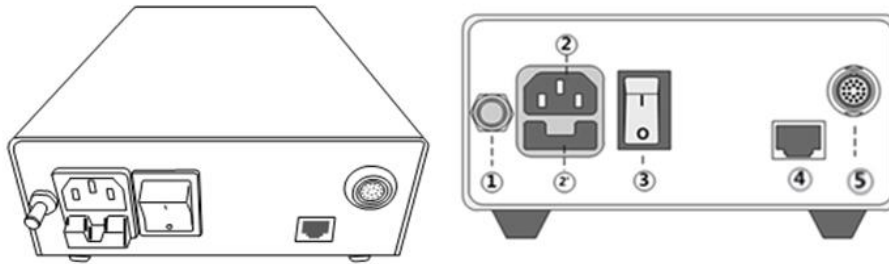


FIGURE 10 POWER SUPPLY BOX

Item	Description
Power Supply Box	① Grounding Jack : Common Ground or Earth
	② AC Inlet: AC Power Plug (2' - Fuse socket) Input AC Socket Type : IEC60320 C14 Type Input AC Socket : 6220(SCHURTER)
	③ Power switch: Power On/Off switch → Green colored indicator is constant when Power ON
	④ LAN port : LAN cable connector
	⑤ Main Cable Connector : connecting power supply with detector

Table 6 POWER SUPPLY BOX DESCRIPTION

■ Main Cable

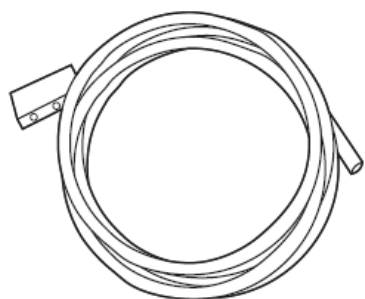


FIGURE 11 MAIN CABLE

This cable connects the detector to the power supply box.



Because the instrument's cable is long, take care so cables do not get tangled during use.

Also, be careful not to get your feet caught in the cable.



Do not pull the cable by force. And If the cable gets tangled, do not pull the main body of portable detector by force. Otherwise, the cable is damaged and causes fire or electric shock.

■ Battery Recharger

The battery recharger is used for S4335-W. You can recharge the battery and check the charge condition.

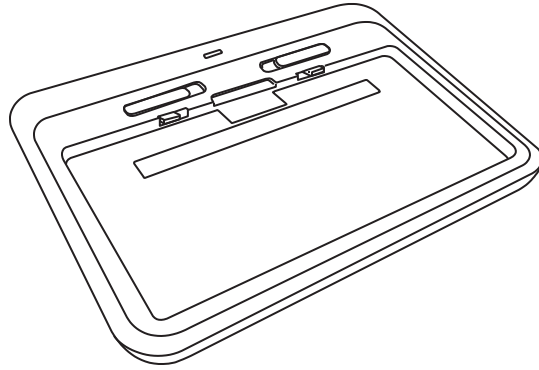


FIGURE 12 BATTERY RECHARGER

1. LED: Indicates the condition of charge. This is turned off when the power is disconnected or is not recharged.
2. The Battery recharger Terminal
3. Knob: It is used to detach a battery from the recharger.

Indicates as follows When the battery recharges, When the battery is recharging, it changes red into green according to the level of charge.

LED	The status of battery Recharger
• Red	• Fast charging mode (Until About 90%)
• Green	• Normal charging mode (About 85% ~ 100 %)
• Blue	• The error of charging

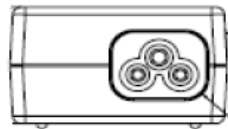
Table 7 BATTERY RECHARGER INDICATE LED



If LED light is blue during recharging the battery, stop recharging the battery immediately and check whether there are Impurities or not in the battery recharger Terminal (②).

Despite taking action on upper step, if LED light is still blue, stop recharging the battery.

Recharger Adapter



Input AC Socket Type : IEC 320 C6 Type.

➤ The use

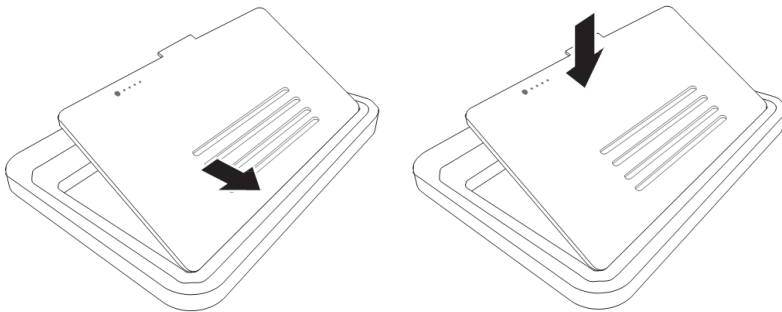


FIGURE 13 BATTERY INSERT

After the Adaptor (AD-9019S) connects to Power cord, be sure to connect it to Adaptor terminal on the back side of Recharger

Be sure to insert the battery to recharger until it sounds clack.

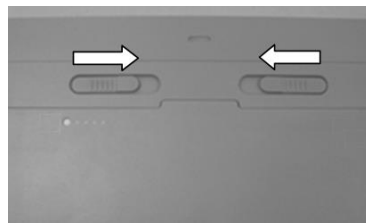


FIGURE 14 BATTERY LOCK

Be sure to push inside two knobs to the end when the battery detached from the recharger.



- When using the S4335-W battery recharger, always use the battery (SDB-3S1PA) provided by Samsung Electronics Co. Ltd..



- When using Battery recharger, Be sure to use Adapter (AD-9019S) Provided by Samsung Electronics Co. Ltd..

- When moving the S4335-W battery recharger, always separate the power and battery pack



- When using the S4335-W battery recharger, Always be cautious about touching liquid, impurities. In case of short trouble.

- Do not disassemble the battery recharger.



- When using the S4335-W battery recharger, be sure to comply with the user environment. The performance of S4335-W battery can be down and the durability can be shorter.



- Be sure to use the S4335-W battery recharger in the Control Room. This battery recharger is not designed to use in the Examination Room.



- When not using the S4335-W battery recharger for a long time. Always do separate the battery recharger from the Power.



- When inserting the battery to the battery recharger, Be careful of being caught clothes or impurities.

■ Battery



FIGURE 15 BATTERY

This is the battery for using the S4335-W (Detector) by wireless communications

This light usually turns off. If you push the circle button, you can check the condition of battery as follows below.

- When using,

LED	Battery residual display
LED 1,2,3,4 light on	76 % ~ 100 %
LED 1,2,3 light on	51 % ~ 75 %
LED 1,2 light on	26 % ~ 50 %
LED 1 light on	11 % ~ 25%
LED 1 Dimming (About 0.5sec interval)	Under 10%

Table 8 BATTERY RESIDUAL DISPLAY

- When recharging,

LED	Battery residual display
LED 1,2,3 light on LED 4 Dimming	76 % ~ 100 %
LED 1,2 light on LED 3 Dimming	51 % ~ 75 %
LED 1 light on LED 2 Dimming	26 % ~ 50 %
LED 1 Dimming	11 % ~ 25%
LED 1 Dimming (About 0.5sec interval)	Under 10%

Table 9 BATTERY INDICATE LED



- Be sure to recharge the battery by using the S4335-W (Detector) or the battery recharger (DEPS-9606) provided by Samsung Electronics Co. Ltd..



- If the battery is needed to be stored for a long period, battery should be removed from the application and stored in a place where humidity and temperature are low.



- While the battery is charged, used and stored, keep it away from object materials with static electric charges.



- If the terminals of the battery become dirty, wipe with a dry cloth before using the battery.



- Be sure to use the battery in the environment designated by Samsung. Otherwise, the life of battery can be short



- Stop using the battery if the battery becomes abnormally hot, disorder, discoloration, deformation, or abnormal conditions is detected during use, charge, or storage.



Don't short circuit (+) and (-) terminals with metallic object intentionally.



- Not be sure to touch liquid on the surface of the battery.



Don't pierce the battery with a sharp object such as a needle, screw drivers.



- Do not hit the battery with heavy objects.



- Don't step on the battery and throw or drop the battery on the hard floor to avoid mechanical shock.



- Don't disassemble the battery or modify the battery design including electric circuit.

4. OPERATING THE SYSTEM HARDWARE

■ Operating the System Hardware

■ IP set up

[My Network Places] → [Properties] → [Local Area Connection] → [Properties] → [Internet Protocol (TCP/IP)]

→ [Use the following IP address]

IP address : 192 . 168 . 197 . 20 (Console PC)

Detector IP address is 192. 168. 197. 80 (default)

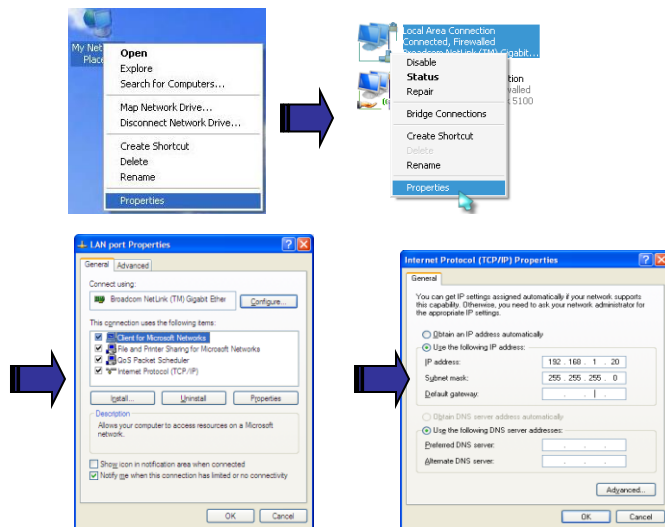


Figure 16 IP SET UP

It is possible to change IP address, but it shouldn't be the same as the detector IP address.

■ Checking Connection

Check LED on the detector & power supply

Ping test: [Start] → [Run] → ping -t 192.168.197.80

■ Operation

➤ Switching power on / off

This equipment is turned on by the Power Button of each component.

Table 9 lists the methods for checking the power on status of the system components.

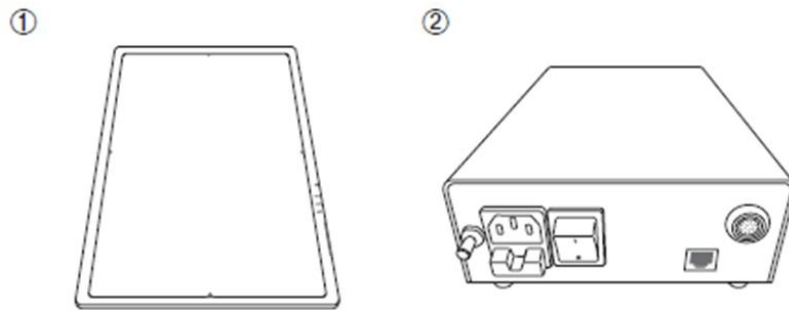


FIGURE 17 POWER APPLIED COMPONENTS (S4335-W)

Component	Power button location	To check the power status
Detector	Power switch on the bottom of the right side	Dimming blue power LED
Power supply Box	The front side of Power supply box	Green power LED

Table 10 CHECKING THE POWER STATUS OF COMPONENTS (S4335-W)

All connection should be done, before turn on the power supply box.

Turn on the power of the detector power supply box, workstation.

The green light of the LED indicator on the detector is on, the detector power is on.

The blue light of the LED indicator on the detector is blinking, the detector is getting prepared to work and initialize.

Turn off the power of the detector power supply box

When Detector is not turned on, be sure to check the Connection, the status of Battery and installation at first.



Below table 10 for turning off each component.

Component	Power Button Location	To check the power status
Detector	On the bottom of the right side	Blue power LED is turned off.
Power supply	The front side of PSU	Green power LED is turned off.

Table 11 POWER OFF STATUS

■ Operating description

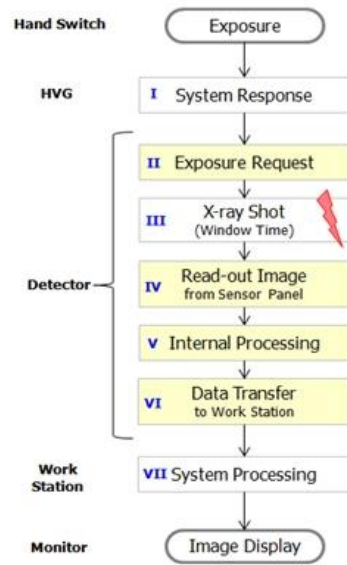


Figure 18: TIMING CHART

Item	min.	typ.	max.	unit	
Exposure request time (II) Before x-ray pulse start	-	-	0.5	sec	
Exposure window	-	0.5	4.0	sec	
Image transmitted after exposure done (IV + V + VI)	Wireless	3.5	4.0	-	sec
	Wired	-	2.05	2.50	sec
Image cycle time for exposure of 0.5sec	8	-	-	sec	
Booting time	-	34	40	sec	

Table 12 OPERATING TIME TABLE

5. APPENDICES

■ REQUIRED PUBLIC STATEMENT FOR GPL/LGPL/GPLv2/OpenSSL/CPOL LICENSED SOFTWARE USED IN THIS PRODUCT

The software included in this product contains copyrighted software that is licensed under the GPL/LGPL. You may obtain the complete Corresponding Source code from us for a period of three years after our last shipment of this product by sending email to:

oss.request@samsung.com

This offer is valid to anyone in receipt of this information.

Source/Lib	License
Kernel 3.2.0	GPLv2
U-boot 2011.09	GPLv2
Busybox 1.19.4	GPLv2
Mtd-util-1.5.0	GPLv2
Glib 2.12.2	LGPL v2.1
Hostap	BSD
Libnl-1	LGPL v2.1
Iw-3.0	-
Wi-fi driver(atherosAR1021x)	GPLv2

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an

Announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or

Collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary

form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author

Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.

This is free software, and you are welcome to redistribute it

under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program

`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- **a)** The modified work must itself be a software library.
- **b)** You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- **c)** You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- **d)** If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- **a)** Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- **b)** Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- **c)** Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- **d)** If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- **e)** Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- **a)** Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- **b)** Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

one line to give the library's name and an idea of what it does.

Copyright (C) *year* *name of author*

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

signature of Ty Coon, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

BSD LICENSE

Copyright (c) 1993 The Regents of the University of California. All rights reserved.

This software was developed by the Computer Systems Engineering group at Lawrence Berkeley Laboratory under DARPA contract BG 91-66 and contributed to Berkeley.

All advertising materials mentioning features or use of this software must display the following acknowledgement: This product includes software developed by the University of California, Lawrence Berkeley Laboratory.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement: This product includes software developed by the University of California, Berkeley and its contributors.
4. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,

EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

FCC Statement of Conformance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

IC Information

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference, and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme avec Industrie Canada RSS standard exempts de licence(s), Son utilisation est soumise à Les deux conditions suivantes:

- (1) cet appareil ne peut pas provoquer d'interférences et
- (2) cet appareil doit accepter Toute interférence, y compris les interférences qui peuvent causer un mauvais fonctionnement du dispositif.

Tests for EMC and RF including wireless EMC were performed according to the standards in the following table below .

Item	Standards
EMC	IEC 60601-1-2
Wireless EMC	EN 301 489-1 EN 301 489-17
RF	47 CFR Part 15C 47 CFR Part 15E EN 300 328 EN 301 893

EMC Declaration

1. Compliance Statement

This equipment complies with IEC 60601-1-2 EMC standards for medical devices.

This equipment needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in the user manual.

Do not use any wireless devices, including cellular phones, near the system. All wireless devices, whether they comply with the EMC standard or not, may emit electromagnetic interferences and cause the system to malfunction when they are used nearby.

This equipment should not be used adjacent to or stacked with other equipment; if adjacent or stacked use is necessary, the equipment should be tested and verified in order to ensure normal operations in the configuration in which it will be used.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

All interconnect cables to peripheral devices must be shielded and properly grounded, except when technologically prohibited. Use of cables not properly shielded and grounded may result in the equipment causing radio frequency interference.

EMC Cable List

Port No.	Name	Type*	Cable Max. > 3 m	Cable Shielded	Comments
Signal					
1	Tether cable	I/O	7.0	Shielded	None
*Note: I/O = Signal Input or Output Port (Not Involved in Process Control)					

The use of cables or accessories other than those specified may result in increased emissions or decreased immunity.

Should any interference (EMC) be detected with other equipment, please position other equipment away from this one.

When using this system on a patient with an implantable pacemaker or an implantable cardioverter defibrillator, the patient must be informed that continuous X-ray exposure in pulse form may cause the pacemaker or cardioverter defibrillator to malfunction.

When using this system, ensure that X-rays are not exposed directly onto the patient's implantable pacemaker or implantable cardioverter defibrillator, and that the exposure time is kept as short as possible.

This equipment may be interfered with by other equipment, even if that other equipment complies with CISPR EMISSION requirements.

This device contains wireless module.
 "FCC ID : A3LWIDT30Q"



Restriction of use of Wi-Fi using 5 GHz bands(5150 - 5350 MHz) "In the EU, the Wi-Fi function in this equipment should not be used outdoors."

⇒ Wired & Wireless Interface

Wired	Standard	IEEE 802.3 compliant
	Physical data rate	10/100/1000 BASE-T
Wireless	Standard	IEEE 802.11 a/b/g/n WI-FI
	Frequency	2.4GHz/5GHz dual
	Modulation	OFDM with BPSK, QPSK, 16 QAM, 64 QAM, DBPSK, CCK
	Security	Open, WEP, WPA/WPA2 PSK, WPA/WPA2 Enterprise
	Physical data rate	<ul style="list-style-type: none"> •IEEE 802.11a : 6-54Mbps •IEEE 802.11b : 1-11Mbps •IEEE 802.11g : 6-54Mbps •IEEE 802.11n : 6.5-300Mbps
Power Output (EIRP)	For 2.4GHz band : 13.80 dBm For 5GHz Lower sub-band : 14.76 dBm For 5GHz Higher sub-band : 12.39 dBm	

Table1

Guidance and manufacturer's declaration- Electromagnetic emissions		
This Wireless Detector is intended for use in the electromagnetic environment specified below. The user of this Wireless Detector should assure that it is used in such an environment		
Emission test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	This Wireless Detector uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class A	This Wireless Detector is suitable for use in all establishments other than domestic, and may be used in domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes, provided the following warning is heeded: Warning: This equipment/system is intended for use by healthcare professionals only. This equipment/system may cause radio interference or may disrupt the operation of nearby equipment. It may be necessary to take mitigation measures, such as re-orienting or relocating the Wireless Detector or shielding the location.
Harmonics emission IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Table2

Guidance and manufacturer's declaration- Electromagnetic immunity			
This Wireless Detector is intended for use in the electromagnetic environment specified below. The customer or the user of this Wireless Detector should assure that it is used in such an environment.			
IMMUNITY test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
Electrostatic discharge (ESD) IEC61000-4-2	±6 kV Contact ±8 kV Air	±6 kV Contact ±8 kV Air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %
Electrical fast Transient / burst IEC61000-4-4	±2kV for power supply lines ±1kV for input/output lines	±2kV for power supply lines ±1kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Power frequency (50/60Hz) Magnetic field IEC61000-4-8	3.0 A/m	3.0 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Voltage dips, short Interruptions and Voltage variations on power supply input lines IEC61000-4-11	<5% U _T (>95% dip in U _T) for 0.5 cycle 40% U _T (60% dip in U _T) for 5 cycle, 6 cycle 70% U _T (30% dip in U _T) for 25 cycle, 30 cycle <5% U _T (>95% dip in U _T) for 5 sec	<5% U _T (>95% dip in U _T) for 0.5 cycle 40% U _T (60% dip in U _T) for 5 cycle, 6 cycle 70% U _T (30% dip in U _T) for 25 cycle, 30 cycle <5% U _T (>95% dip in U _T) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of this Wireless Detector requires continued operation during power mains interruptions, it is recommended that this Wireless Detector be powered from an uninterruptible power supply or a battery
Note: U _T is the a.c. mains voltage prior to application of the test level.			

Table3


Guidance and manufacturer's declaration- Electromagnetic immunity			
This Wireless Detector is intended for use in the electromagnetic environment specified below. The customer or the user of this Wireless Detector should assure that it is used in such an environment.			
IMMUNITY test	IEC 60601 TEST LEVEL	Compliance level	Electromagnetic environment – guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms 150 kHz to 80 MHz	<p>Portable and mobile RF communications equipment should be used no closer to any part of this Wireless Detector, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance</p> $d = \left[\frac{3.5}{V_1} \right] \sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2,5 GHz	3 V/m 80 MHz to 2,5 GHz	$d = \left[\frac{3.5}{E_1} \right] \sqrt{P} \text{ 80 MHz to 800 MHz}$ $d = \left[\frac{2}{E_1} \right] \sqrt{P} \text{ 800 MHz to 2,5 GHz}$ <p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,^a should be less than the compliance level in each frequency range.^b</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 
NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.			
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			
<p>^a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which this Wireless Detector is used exceeds the applicable RF compliance level above, this Wireless Detector should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating this Wireless Detector.</p>			
<p>^b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.</p>			

Table4

Recommended separation distances between portable and mobile RF communications equipment and this Wireless Detector			
This Wireless Detector is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of this Wireless Detector can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and this Wireless Detector as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz $d = \left[\frac{3.5}{V-1}\right]\sqrt{P}$	80 MHz to 800 MHz $d = \left[\frac{3.5}{E-1}\right]\sqrt{P}$	800 MHz to 2.5 GHz $d = \left[\frac{7}{E-1}\right]\sqrt{P}$
0.01	0.12	0.12	0.24
0.1	0.37	0.37	0.74
1	1.17	1.17	2.34
10	3.69	3.69	7.38
100	11.67	11.67	23.34
For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.			
NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.			
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

RF exposure compliance

The available scientific evidence does not show that any health problems are associated with using low power wireless devices. There is no proof, however, that these low power wireless devices are absolutely safe. Low power wireless devices emit low levels radio frequency energy (RF) in the microwave range while being used. Whereas high levels of RF can produce health effects (by heating tissue), exposure of low-level RF that does not produce heating effects causes no known adverse health effects. Many studies of low-level RF exposures have not found any biological effects. Some studies have suggested that some biological effects might occur, but such findings have not been confirmed by additional research. This device has been tested and found to comply with FCC/IC radiation exposure limits set forth for an uncontrolled equipment and meets the FCC radio frequency (RF) Exposure Guidelines in Suppleme