18.5” Medical Panel PC with Intel® Core™ i5-7300U/ Celeron® 3965U CPU, 4 GB DDR4 RAM, Wi-Fi 802.11a/b/g/n/ac, PCAP Touchscreen, 2-Megapixel Camera and Microphone

BIS-W19C-ULT4

Quick Installation Guide

Version 1.00

Revision

Date	Version	Changes
March 8, 2018	1.00	Initial release

Intended Use

The BIS-W19C-ULT4 medical panel PC is intended to be used to display general purpose medical images. The device shall not be used for diagnosis purpose or life supporting system.
Equipment connected to analog or digital interfaces must comply with the respective IEC Standards (e.g. IEC 60950 for data processing equipment and IEC 60601-1 for medical equipment). Furthermore all configurations shall comply with the current version of the standard for SYSTEMS IEC 60601-1-1. Everybody who connects additional equipment to the signal input part or signal output part configure a medical system, and is therefore responsible that the system complies with current version of the requirements of the system standard IEC 60601-1-1. If in doubt, consult the technical service department or your local representative.

Manual Conventions

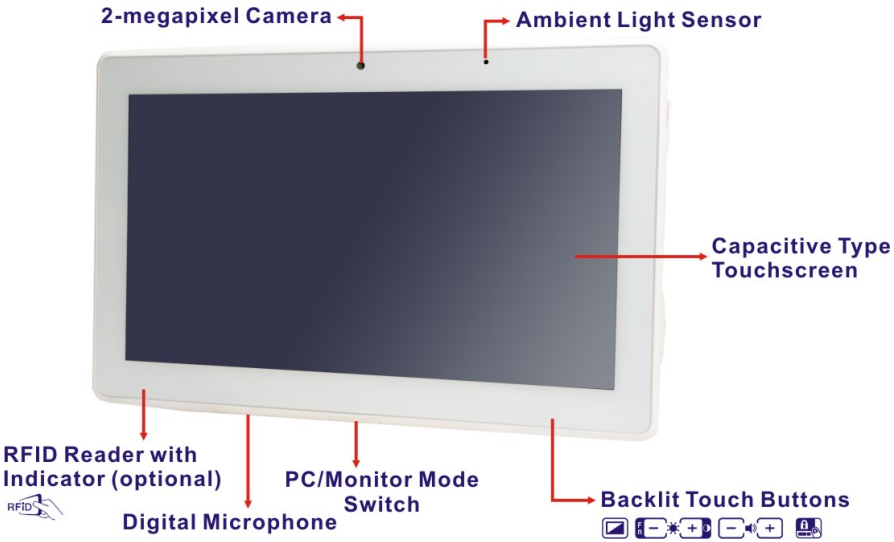
	**WARNING** Warnings appear where overlooked details may cause damage to the equipment or result in personal injury. Warnings should be taken seriously.
	**CAUTION** Cautionary messages should be heeded to help reduce the chance of losing data or damaging the product.
	**NOTE** These messages inform the reader of essential but non-critical information. These messages should be read carefully as any directions or instructions contained therein can help avoid making mistakes.
	**Hot surface** This symbol indicates a hot surface that should not be touched without taking care.
	**OPERATING INSTRUCTION** Follow operating instructions or consult instructions for use.
	**IEC 60417-5009: Stand-by**

Overview

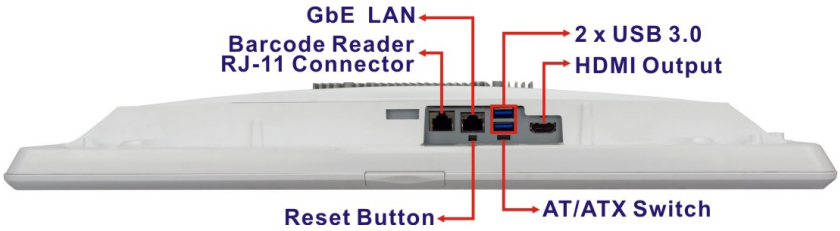
The BIS-W19C(F)-ULT4 is a 7th generation Intel® Core™/Celeron® mobile CPU powered medical-grade panel PC with a rich variety of functions and peripherals. All BIS-W19C(F)-ULT4 models are designed for easy and simplified integration into bedside infotainment applications. The system comes with 4 GB of preinstalled DDR4 memory and supports a maximum of 32 GB ensuring smooth data throughputs with reduced bottlenecks and fast system access.

One isolated RS-232/422/485 serial port, four USB 3.0 ports and two USB 2.0 ports provide simplified connectivity to a variety of external peripheral devices. Wi-Fi 802.11a/b/g/n/ac high speed wireless and two RJ-45 GbE connectors allow for smooth connection of the system to an external LAN. The system also equips with one SATA interface supporting both SATA HDD and SSD.

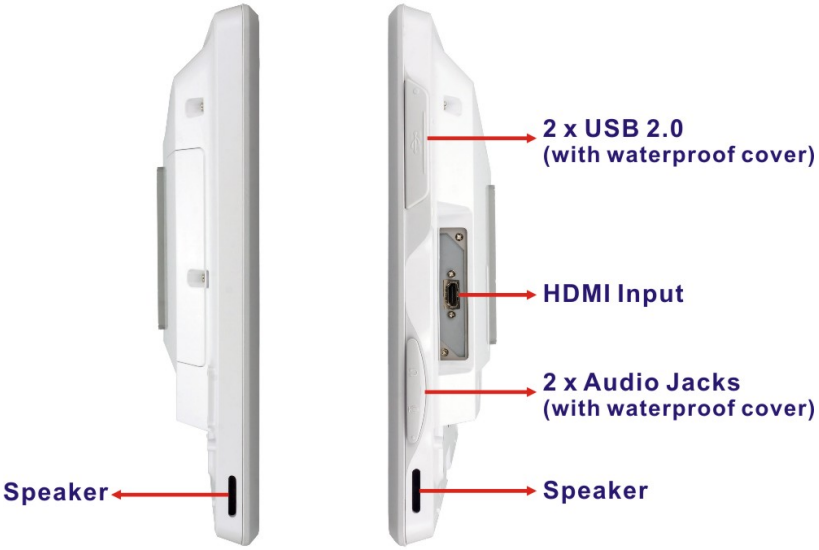
Front Panel



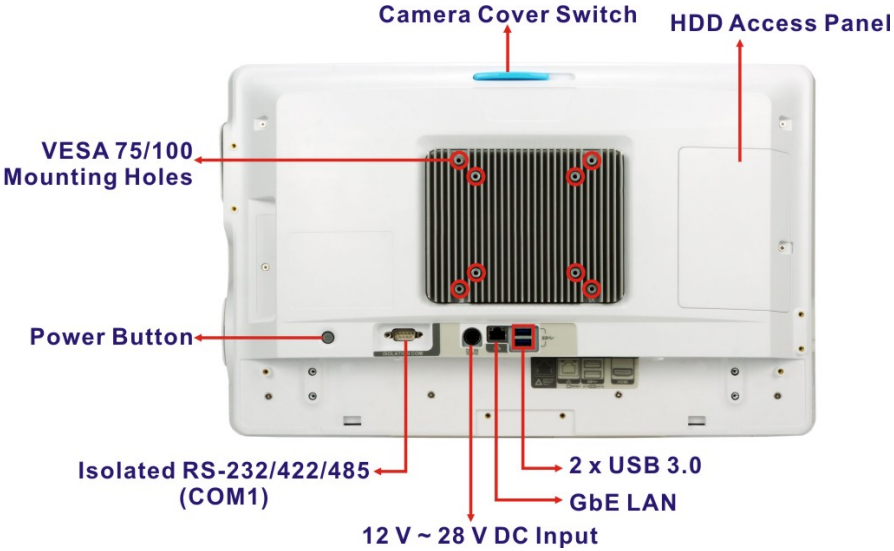
Bottom Panel



Side Panel



Rear Panel



System Specifications

Specifications	BIS-W19CF-ULT4	BIS-W19C-ULT4
LCD and Touchscreen		
LCD Size	18.5" (16:9)	
Max. Resolution	1920 (W) x 1080 (H)	1366 (W) x 768 (H)
Brightness (cd/m2)	350	250
Contrast Ratio	1000:1	1000:1
LCD Color	16.7M (RGB 6-bit)	16.7M (RGB 8-bit)
Pixel Pitch (mm)	0.213 (H) x 0.213 (V)	0.3 (H) x 0.3 (V)
Viewing Angle (H-V)	178°/178°	170°/160°
Backlight MTBF	50,000 hrs (LED)	30,000 hrs (LED)
Touchscreen	Projected capacitive type with USB interface	
Touch Controller	ILITEK	
Surface Hardness	6H	
System		
CPU	Intel® Core™ i5-7300U or Intel® Celeron® 3965U	
Memory	Two 260-pin 2133/1866 MHz dual-channel non-ECC unbuffered DDR4 SO-DIMMs supported (system max. 32 GB) Preinstalled with 4 GB memory	
I/O Port	**Rear:** 1 x 1.5kV isolated COM port (DB-9) 1 x 12 V ~ 28 V DC input jack 1 x GbE LAN port (RJ-45) 2 x USB 3.0 port **Bottom:** 1 x Barcode reader connector (RJ-11) 1 x GbE LAN port (RJ-45) 2 x USB 3.0 port 1 x HDMI output **Side:** 2 x USB 2.0 port 1 x Audio out 1 x Mic in 1 x HDMI input	
Storage	One 2.5” SATA 6Gb/s HDD bay One mSATA (reserved, PCIe Mini interface)	
Audio	Two 2 W speakers	
Webcam & Microphone	2-megapixel CMOS front-facing camera with auto focus and digital microphone	
LED Indicator	RFID LED indicator (optional)	
Other Features		
Mifare RFID	Optional Mifare 13.56 MHz card reader (with LED indicator)	

Function Keys	1 x LCD on/off 1 x Brightness up 1 x Brightness down 1 x Volume up 1 x Volume down 1 x Touch lock for cleaning **Combination:** 1 x Auto dimming on/off	
Light Sensor	Ambient light sensor for panel brightness adjustment	
Cooling Method	Fanless	
Connectivity		
Wi-Fi and Bluetooth	IEEE 802.11a/b/g/n/ac 2T2R module with Bluetooth v4.1 (M.2 2230 A-E key module)	
LAN	Two GbE LAN connectors	
Physical		
Construction Material	PC+ABS plastic with anti-bacterial material	
Mounting	Wall, stand and arm mounting VESA 75 mm x 75 mm or 100 mm x 100 mm	
Net Weight	6.5 kg	
Dimensions	478.6 mm (W) x 317.3 mm (H) x 60.1 mm (D)	
Environment		
Storage/ Transportation	**Temperature**	-20ºC ~ 60ºC
	Humidity	10% ~ 95% (non-condensing)
	Pressure	700 hPa ~ 1060 hPa
Operating	**Temperature**	0ºC ~ 40ºC
	Humidity	10% ~ 95% (non-condensing)
	Pressure	700 hPa ~ 1060 hPa
Vibration	1G	
Shock	Operating: 5G peak acceleration (11ms duration) Non-Operating: 15G peak acceleration (11ms duration)	
IP Level	IP 65 compliant front panel	
Power		
Power Input	12 V ~ 28 V DC	
Power Adapter	120 W DARFON H1120-B0 medical-grade power adapter Input: 100 V AC ~ 240 V AC, 50 Hz ~ 60 Hz, 1.4 A ~ 0.6 A Output: 19 V ⎓ 6.31 A	
	150 W FSP FSP150M-ABA medical-grade power adapter Input: 100 V AC ~ 240 V AC, 50 Hz ~ 60 Hz, 2 A ~ 0.85 A Output: 19 V ⎓ 7.89 A	

Installation Precautions

When installing the medical panel PC, please follow the precautions listed below:

- **Manufacturer authorization**: Do not modify this equipment without authorization of manufacturer.
- **Certified Engineers**: Only certified engineers should install and modify the hardware settings.
- **Power turned off**: When installing the medical panel PC, make sure the power is off. Failing to turn off the power may cause severe injury to the body and/or damage to the system.
- **Anti-static Discharge**: If a user open the rear panel of the medical panel PC, to configure the jumpers or plug in added peripheral devices, ground themselves first and wear an anti-static wristband.

Mounting the System – Wall Mount

 **WARNING:**

Use suitable mounting apparatus and be sure to secure the screws of the mounting apparatus tightly to avoid risk of injury.

To mount the medical panel PC onto the wall, please follow the steps below.

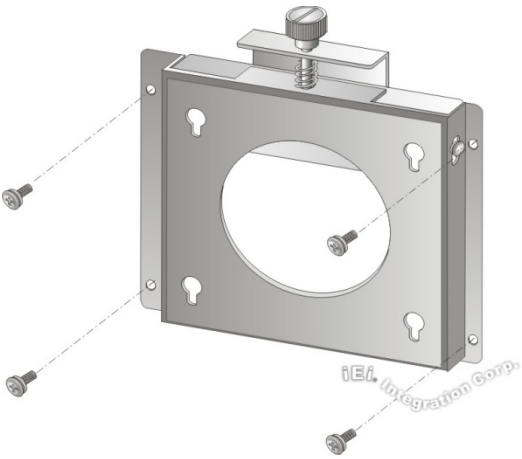
Step 1: Select the location on the wall for the wall-mounting bracket.

Step 2: Carefully mark the locations of the four screw holes in the bracket on the wall.

Step 3: Drill four pilot holes at the marked locations on the wall for the bracket retention screws.

Step 4: Align the wall-mounting bracket screw holes with the pilot holes.

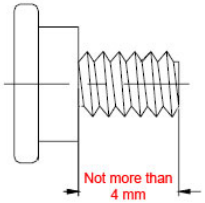
Step 5: Secure the mounting bracket to the wall by inserting the retention screws into the four pilot holes and tightening them.



Step 6: Insert the four monitor mounting screws provided in the wall mount kit into the four screw holes on the real panel of the medical panel PC and tighten until the screw shank is secured against the rear panel.

WARNING:

Please use the M4 screws provided in the wall mount kit for the rear panel. If the screw is missing, the thread depth of the replacement screw should be not more than 4 mm.

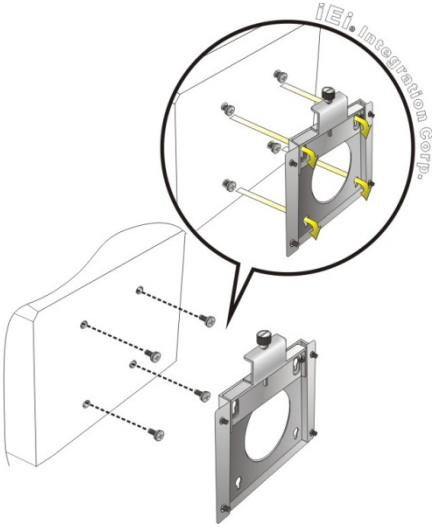


Step 7: Align the mounting screws on the monitor rear panel with the mounting holes on the bracket.

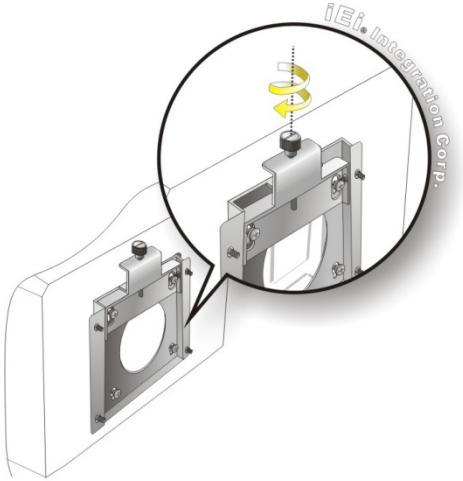
Step 8: Carefully insert the screws through the holes and gently pull the monitor downwards until the monitor rests securely in the slotted holes. Ensure that all four of the mounting screws fit snugly into their respective slotted holes.

NOTE:

In the diagram below the bracket is already installed on the wall.



Step 9: Secure the panel PC by fastening the retention screw of the wall-mounting bracket.



Powering On the System

 **WARNING:**

To avoid risk of electric shock, this equipment must only be connected to supply mains with protective earth.

 **CAUTION:**

The FSP FSP150M-ABA / DARFON H1120-B0 power adapter came with the BIS-W19C-ULT4 is a forming part of the medical device.

Step 1: Connect the power cord to the power adapter. Connect the other end of the power cord to a power source.

Step 2: Connect the power adapter to the power connector of the BIS-W19C-ULT4.

Step 3: Locate the power button on the rear panel.

Step 4: Short press the power button to turn on the BIS-W19C-ULT4.

Shutdown Procedure

Turn off the power and disconnect the power cord.

To prevent the risk of electric shock, make sure power cord is unplugged from wall socket. To fully disengage the power to the unit, please disconnect the power cord from the AC outlet. Refer servicing to qualified service personnel. The AC outlet shall be readily available and accessible.

Troubleshooting

If the following situations happen, contact your distributor, sales representatives or IEI customer service center for technical support.

- The HDD is installed correctly, but the BIS-W19C-ULT4 is unable to boot with AC power input after pressing the power button.
- Unable to shut down the BIS-W19C-ULT4 normally

Please have the following information prepared prior to reporting the abnormal situations:

- Product name and S/N
- OS, BIOS version and applications
- A complete description of the abnormal situation (with photos or video if available)

System Maintenance

If the components of the BIS-W19C-ULT4 fail they must be replaced. Please contact the system reseller or vendor to purchase the replacement parts.

Maintenance and Cleaning

Prior to cleaning any part or component of the BIS-W19C-ULT4, please read the details below.

- To clean the BIS-W19C-ULT4,
  - remove dirt with a lightly moistened cloth. Then wipe the external chassis with a soft dry cloth.
  - use 75% ethanol alcohol to clean the external chassis.
- Cleaning frequency: follow the cleaning method guidelines of the hospital.
- Except for the LCD panel, never spray or squirt liquids directly onto any other components.
- The interior of the BIS-W19C-ULT4 does not require cleaning. Keep fluids away from the BIS-W19C-ULT4 interior.
- Never drop any objects or liquids through the openings of the BIS-W19C-ULT4.

Accessories

The BIS-W19C-ULT4 medical panel PC is shipped with the following components:

Quantity	Item	Image
1	BIS-W19C-ULT4 medical panel PC	
1	120 W/19 V DARFON H1120-B0 medical-grade power adapter (**P/N**: 63040-580120-000-RS) or 150 W/19 V FSP FSP150M-ABA medical-grade power adapter (**P/N**: 63040-010150-400-RS)	 
1	Power cord (**P/N**: 32702-000200-100-RS)	
4	Pan-head screw (M3*5) for HDD installation (**P/N**: 44043-030051-RS)	
1	Quick Installation Guide	
1	Utility CD	
1	One Key Recovery CD	

Optional Items

The following are optional components which may be separately purchased:

Item and Part Number	Image
VESA 100 wall mount kit (four M3*6 screws included) (**P/N**: AFLWK-19B)	
Mifare RFID reader compliant with ISO 14443A, ISO 14443B and ISO 15693 protocols (assemble-to-order) (**P/N**: MEDP-MF-RFID-R10)	

DECLARATION OF CONFORMITY

This equipment is in conformity with the following EU directives:

- EMC Directive (2004/108/EC, 2014/30/EU)
- Low-Voltage Directive (2006/95/EC, 2014/35/EU)
- RoHS II Directive (2011/65/EU, 2015/863/EU)
- Medical Device Directive 93/42/EEC: EN 60601-1

If the user modifies and/or install other devices in the equipment, the CE conformity declaration may no longer apply.
If this equipment has telecommunications functionality, it also complies with the requirements of the Radio Equipment Directive 2014/53/EU.
IEI Integration Corp declares that this equipment is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

FCC WARNING

This equipment complies with part 18 of the FCC Rules.
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

UL CLASSIFIED

Medical general medical equipment with respect to electrical shock, fire and mechanical hazards only in accordance with ANSI/AAMI ES60601-1 (2005 and Amendment 1), CAN/CSA-C22.2 NO. 60601-1 (2014).

ROHS STATEMENT

The label on the product indicates this product conforms to European (EU) Restriction of Hazardous Substances (RoHS) that set maximum concentration limits on hazardous materials used in electrical and electronic equipment.

CHINA ROHS

The label on the product indicates the estimated “Environmentally Friendly Use Period” (EFUP). This is an estimate of the number of years that these substances would “not leak out or undergo abrupt change.” This product may contain replaceable sub-assemblies/components which have a shorter EFUP such as batteries and lamps. These components will be separately marked.

Safety Precautions

 **WARNING:**

The precautions outlined below should be strictly followed. Failure to follow these precautions may result in permanent damage to the BIS-W19C-ULT4.

General Safety Precautions

Please ensure the following safety precautions are adhered to at all times.

- To prevent the risk of electric shock, make sure power cord is unplugged from wall socket. To fully disengage the power to the unit, please disconnect the power cord from the ac outlet. Refer servicing to qualified service personnel. The AC outlet shall be readily available and accessible.
- Users must not allow SIP/SOPs and the patient to come into contact at the same time.
- Grounding reliability can only be achieved when the equipment is connected to an equivalent receptacle marked “Hospital Only” or “Hospital Grade”.
- Follow the electrostatic precautions outlined below whenever the BIS-W19C-ULT4 is opened.
- Make sure the power is turned off and the power cord is disconnected whenever the BIS-W19C-ULT4 is being installed, moved or modified.
- Do not apply voltage levels that exceed the specified voltage range. Doing so may cause fire and/or an electrical shock. Use a power cord that matches the voltage of the power outlet, which has been approved and complies with the safety standard of your particular country.
- Electric shocks can occur if the BIS-W19C-ULT4 chassis is opened when the BIS-W19C-ULT4 is running. To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.
- Do not drop or insert any objects into the ventilation openings of the BIS-W19C-ULT4.
- If considerable amounts of dust, water, or fluids enter the BIS-W19C-ULT4, turn off the power supply immediately, unplug the power cord, and contact the BIS-W19C-ULT4 vendor.
- DO NOT:
  - Drop the BIS-W19C-ULT4 against a hard surface.
  - Strike or exert excessive force onto the LCD panel.
  - Touch any of the LCD panels with a sharp object

- In a site where the ambient temperature exceeds the rated temperature

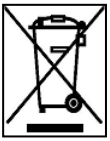
Product Disposal

CAUTION:

Risk of explosion if battery is replaced by an incorrect type. Only certified engineers should replace the on-board battery.

Dispose of used batteries according to instructions and local regulations.

- Outside the European Union - If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority so as to comply with the correct disposal method.
- Within the European Union–The device that produces less waste and is easier to recycle is classified as electronic device in terms of the European Directive 2012/19/EU (WEEE), and must not be disposed of as domestic garbage.



EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your display products, please follow the guidance of your local authority, or ask the shop where you purchased the product. The mark on electrical and electronic products only applies to the current European Union Member States.
Please follow the national guidelines for electrical and electronic product disposal.

Classification

- Power by Class I power supply (IEI, BIS-W19C-ULT4)
- No Applied Part.
- No protection against the ingress of water: IPX0
- Mode of operation: Continuous Operation

The equipment not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide: Not AP or APG Category.

EMC Test Summary

Guidance and manufacturer's declaration – electromagnetic emissions		
The model BIS-W19C-ULT4 is intended for use in the electromagnetic environment specified below. The customer or the user of the model BIS-W19C-ULT4 should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment – guidance
RF emissions CISPR 11		The model BIS-W19C-ULT4 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		The model BIS-W19C-ULT4 is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2		
Voltage fluctuations/ flicker emissions IEC 61000-3-3		

Recommended separation distances between portable and mobile RF communications equipment and the model BIS-W19C-ULT4			
The model BIS-W19C-ULT4 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the model BIS-W19C-ULT4 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the model BIS-W19C-ULT4as 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 $d = 1{,}2\sqrt{P}$	80 MHz to 800 MHz $d = 1{,}2\sqrt{P}$	800 MHz to 2,5 GHz $d = 2{,}3\sqrt{P}$
0,01	0,12	0,12	0,23
0,1	0,38	0,38	0,73
1	1,2	1,2	2,3
10	3,8	3,8	7,3
100	12	12	23

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.

Guidance and manufacturer's declaration – electromagnetic immunity			
The model BIS-W19C-ULT4 is intended for use in the electromagnetic environment specified below. The customer or the user of the model BIS-W19C-ULT4 should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±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 IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV line(s) to line(s) ±2 kV line(s) to earth	±1 kV line(s) to line(s) ±2 kV line(s) to earth	Mains power quality should be that of a typical commercial or hospital environment.
interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5 % *U*T (>95 % dip in *U*T) for 0,5 cycle 40 % *U*T (60 % dip in *U*T) for 5 cycles	<5 % *U*T (>95 % dip in *U*T) for 0,5 cycle 40 % *U*T (60 % dip in *U*T) for 5 cycles	Mains power quality should be that of a typical commercial or hospital environment. If the user of the model BIS-W19C-ULT4 requires continued

	70 % *U*T (30 % dip in *U*T) for 25 cycles <5 % *U*T (>95 % dip in *U*T) for 5 sec	70 % *U*T (30 % dip in *U*T) for 25 cycles <5 % *U*T (>95 % dip in *U*T) for 5 sec	operation during power mains interruptions, it is recommended that the model BIS-W19C-ULT4 be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE: *U*T is the a.c. mains voltage prior to application of the test level.			

Guidance and manufacturer's declaration – electromagnetic immunity			
The model BIS-W19C-ULT4 is intended for use in the electromagnetic environment specified below. The customer or the user of the model BIS-W19C-ULT4 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 Radiated RF IEC 61000-4-3	3 Vrms 150 kHz to 80 MHz 3 V/m 80 MHz to 2,5 GHz	Vrms V/m	Portable and mobile RF communications equipment should be used no closer to any part of the model BIS-W19C-ULT4, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance** $d = 1{,}2\sqrt{P}$ $d = 1{,}2\sqrt{P}$ 80 MHz to 800 MHz $d = 2{,}3\sqrt{P}$ 800 MHz to 2,5 GHz

			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). 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] Interference may occur in the vicinity of equipment marked with the following symbol: 

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.

[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 the model BIS-W19C-ULT4 is used exceeds the applicable RF compliance level above, the model BIS-W19C-ULT4 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the model BIS-W19C-ULT4.

[b] Over the frequency range 150 kHz to 80 MHz, field strengths should be less than V/m.

Contact Information

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