BayPort™

6-Bay Charger
Operating Manual

BFW™
www.bfwinc.com

Long Island
Technology
Group

Table of Content

Symbol Description

These important symbols may appear on your Long Island Technology Group™ BayPort™ 6-Bay Charger. Please note their meaning.

CE marking of conformity indicates this device complies with Regulation (EU) 2017/745 on medical devices and Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

The UL mark indicates this product has been tested to, and conforms to applicable standards.

More information for this product can be found in this operating manual.

AS TO ELECTRICAL SHOCK, FIRE AND MECHANICAL HAZARDS ONLY
IEC 60601-1 Edition 3.1, IEC 60601-1-2 Edition 4,
ANSI/AAMI E-S60601-1 (2005), CAN/CSA-C22.2 No. 60601-1 (2008)

Warnings and Cautions

Users of this product should be thoroughly trained in the appropriate medical procedures. Also they should read and understand this owner's manual for this product and all equipment used with it. No other training is required to use this device.


Read and understand the Operating Manual before using the unit.


Use BayPort™ 6-Bay Charger only with BFW™/Long Island Technology Group™ batteries.


DO NOT subject the BayPort™ 6-Bay Charger to strong shocks, which include but are not limited to dropping the unit on the floor.


DO NOT use this unit for anything other than its intended use.


DO NOT modify this equipment.


DO NOT open unit**.** No serviceable components are inside device.


DO NOT submerge this device or any of its components in liquid.


WARNING Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.


USE ONLY components and accessories listed on page 5 and 17 of this manual. Failure to do so may decrease system performance, may lead to unsafe operation, may negatively affect EMC performance and could result in non-compliance and could void the warranty


DO NOT use if packaging is damaged.


WARNING Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the BayPort™ 6-Bay Charger, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.


Medical Electrical Equipment needs special precautions regarding EMC and needs to be installed and put in service according to the EMC information in the Electromagnetic Capability of this manual.


WARNING Falling Hazard: avoid sitting or standing under the unit when it is mounted.

Warnings and Cautions

DO NOT use non-VESA mounts.

Follow local disposal rules for electronic equipment.

WARNING: To avoid the risk of electric shock, this equipment must only be connected to a supply main with protective earth

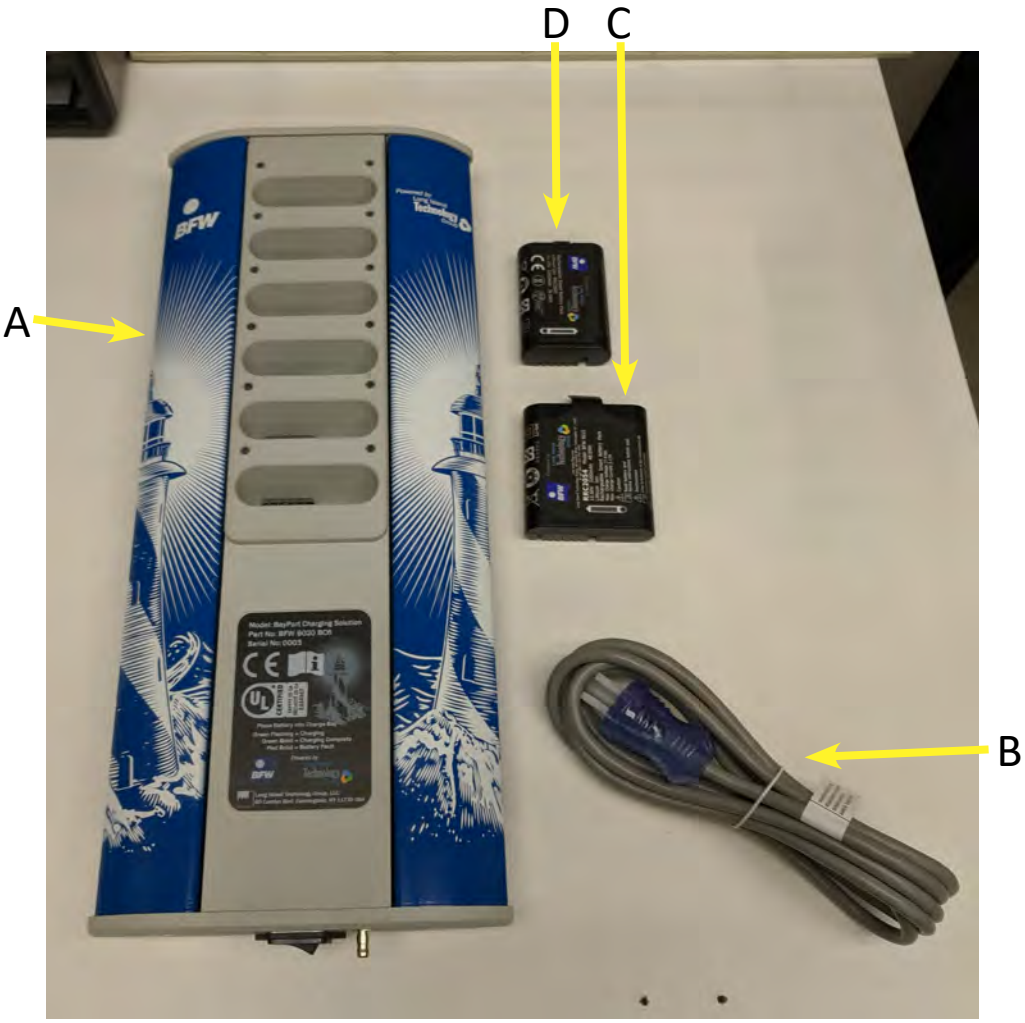
Intended Use

The BFW™ BayPort™ 6-Bay Charger is intended to only charge BFW™/LITG™ batteries used in BFW™/LITG™ products. The charger is intended to be VESA compatible. The product is intended to be used by medical professionals.

Overview

System Description

The BFW™ BayPort™ 6-Bay Charger is constructed of a durable metal housing. Six charging slots allow up to six BFW™/LITG™ 3 or 4 cell batteries to be charged simultaneously and stored easily. LEDs indicate the charging status of each battery. The principle of operation is charging smart batteries.
The intended environment for use is for Professional Health Care except for near active HF Surgical Equipment and the RF shielded room of an ME System for magnetic resonance imaging.

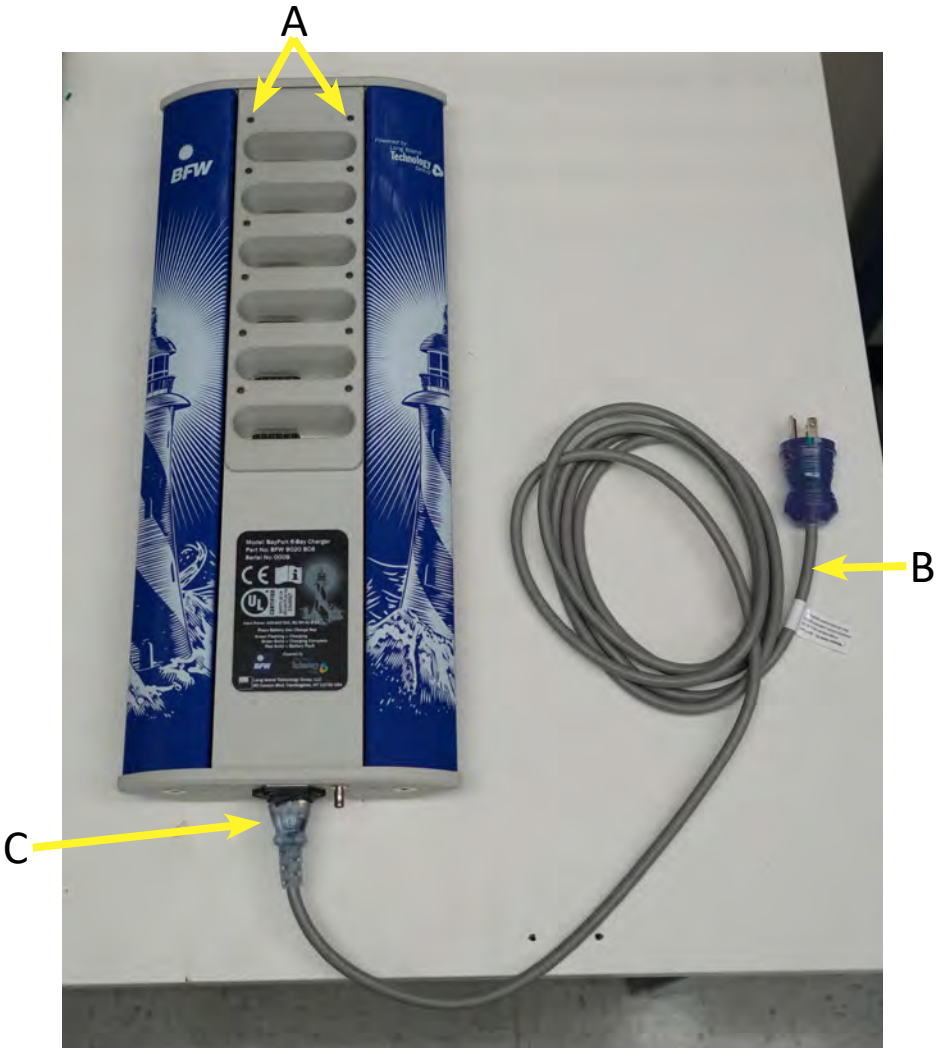


A. BFW™ BayPort™ 6-Bay Charger
B. AC Cable
C. 4-Cell Battery
D. 3-Cell Battery

Operation

Charging Batteries

1. Plug the female end of the AC Cable (B) into the AC Power Receptacle (C) on the bottom of the unit.
2. Plug the male end of the AC Cable (B) in an AC Outlet.
3. Flip the main power switch into the On position on the AC Power Receptacle (C).
4. Fully charging the Battery before use, will ensure the longest Battery life.



A. Charging Indicators (See Table Below)*
B. AC Cable
C. AC Power Receptacle

Charging Indicator*	
Green Blinking	Battery is currently being charged
Green Solid	Battery is fully charged
Red Blinking	An error has occurred during charing

5. Flip the main power switch into the OFF position on the AC Power Receptacle (C) to turn the unit off.

⚠ The appliance inlet shall not be blocked during operation. This will make it difficult to disconnect the device

Cleaning and Maintenance

Charging Unit

1. Clean the BayPort™ 6-Bay Charger components with an alcohol wipe.
2. Use a can of compressed air to clean out any dust accumulations.

DO NOT pour cleaning solution directly on the surface of the BayPort™ 6-Bay Charger

DO NOT use any sterilization process or cleaning process using excessive heat or humidity as it will damage the device

NEVER immerse the unit in any type of liquid

Note: Damaging any part of the system with the use of an improper cleaning agent or cleaning process will void all warranties.

Specifications

Classification	
Classification & Type	None

Environment	
Operation	60 Degrees F (15 C) to 80 Degrees F (26.7 C)
Storage	23 Degrees F (0 C) to 104 Degrees F (40 C)
Relative Humidity	45% - 75%
Pressure/Altitude	860 - 1,060 hPa/2,000m

Performance	
Charge Time from Empty	~3 hours

Mechanical	
LxWxH	19.25” x 8.125” x 2.5”
Weight	11.7 lbs

Electrical	
Input Voltage	100-240 VAC 50/60 Hz
Input Current	1.0 A Max
Line Cord (IEC 60320)	Maximum Length 10ft

Electromagnetic Compatibility

Portable and mobile RF communications equipment can affect medical electrical equipment

Guidance and manufacturer's declaration-electromagnetic emissions			
The BayPort™ 6-Bay Charger is intended for use in the electromagnetic environment specified below. The customer or the user of the BayPort™ 6-Bay Charger 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 150kHz - 80 MHz 3V/meter 80 MHz - 2.5 GHz	3 Vrms 3V/m from 30MHz to 1GHz, 3V/m for 1 GHz to 25GHz; (1000 Hz 80% Modulated Test Signal)	Portable and mobile RF communications equipment should be used no closer to any part of the BayPort™ 6-Bay Charger, including cables, than the recommended separation distance calculated from the equation application to the frequency of the transmitter. Recommended Separation Distance: Battery Operated Device $d = 1.17\sqrt{P}$ $d = 1.17\sqrt{P}$ 80 MHz to 800 MHz $d = 2.23\sqrt{P}$ 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 meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey (1), should be less than the compliance level in each frequency range (2). Interference may occur in the vicinity of equipment marked with the following symbol: 

Electromagnetic Compatibility

NOTE 1: At 80 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 surfaces, objects, and people.

(1) 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 asses 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 BayPort™ 6-Bay Charger is used exceeds the applicable RF compliance level above, the BayPort™ 6-Bay Charger should be observed to verify normal operation. IF abnormal performance is observed, additional measure may be necessary, such as re-orienting or relocating the BayPort™ 6-Bay Charger.
(2) Over the frequency range 150kHz to 80MHz, field strengths should be less than 3 V/m.

Recommended separation distances between portable and mobile RF communications equipment and the BayPort™ 6-Bay Charger

The BayPort™ 6-Bay Charger is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or user of the BayPort™ 6-Bay Charger can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the BayPort™ 6-Bay Charger as recommended below, according to the maximum output power of the communications equipment.

Rate maximum output power of transmitter	Separation distance according to frequency of transmitter in meters		
W	150 kHz to 80 MHz d = 1.17 P	80 MHz to 800 MHz d = 1.17 P	800 MHz to 2.5 GHz d = 2.23 P
.01	0.12	0.12	0.23
.1	0.37	0.37	0.737
1	1.17	1.17	2.33
10	3.70	3.70	7.37
100	11.70	11.70	23.30

For transmitters rated at a maximum output power not listed above, the recommended separate distance d in meters (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: The ISM (industrial, scientific and medical) bands between 150 kHz and 80 MHz are 6.765 MHz to 6.795 MHz; 13.553 MHz to 13.567 MHz; 26.957 MHz to 27.283 MHz; and 40.66 MHz to 40.70 MHz.
NOTE 3: An additional factor of 10/3 has been incorporated into the formulae used in calculated the recommended separation distance for transmitters in the ISM frequency bands between 150 kHz and 80 MHz and in the frequency range 80 MHz to 2.5 GHz to decrease the likelihood that mobile/portable communications equipment could cause interference if it is inadvertently brought into patient areas.
NOTE 4: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from surfaces, objects, and people.

Electromagnetic Compatibility

Guidance and manufacturer's declaration - electromagnetic immunity			
The BayPort™ 6-Bay Charger is intended for use in the electromagnetic environment specified below. The customer or the end user of the BayPort™ 6-Bay Charger 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 ± 8 kV contact ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV air	IEC 61000-4-2 ± 8 kV contact ± 2 kV, ± 4 kV, ± 8 kV, ± 15 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 %. The user of the (BayPort™ 6-Bay Charger) should avoid situations that could result in excess electrostatic discharge.
Radiated RF electromagnetic field	IEC 61000-4-3 3 V/m 80 % AM at 1 kHz	IEC 61000-4-3 3 V/m 80 % AM at 1 kHz	Radiated RF levels should be that of a typical commercial or hospital environment
Proximity fields from RF wireless communications equipment	IEC 61000-4-3 See Table 9 on page 22.	IEC 61000-4-3 See Table 9 on page 22.	RF wireless communications equipment should be used no closer than 30 cm to the BayPort™ 6-Bay Charger.
Electrical Fast Transient/burst	IEC 61000-4-4 ± 2 kV for power supply lines 100kHz repetition frequency	IEC 61000-4-4 ± 2 kV for power supply lines 100kHz repetition frequency	Mains power quality should be that of a typical commercial or hospital environment.
Surge	IEC 61000-4-5 ± 0,5 kV, ± 1 kV line(s) to line(s) ± 0,5 kV, ± 1 kV, ± 2 kV line(s) to earth	IEC 61000-4-5 ± 0,5 kV, ± 1 kV line(s) to line(s) ± 0,5 kV, ± 1 kV, ± 2 kV line(s) to earth	Mains power quality should be that of a typical commercial or hospital environment.
Conducted Disturbances induced by RF fields	IEC 61000-4-6 3 V 0,15 MHz - 80MHz 6 V in ISM bands between 0,15 MHz and 80 MHz 80% AM at 1 kHz	IEC 61000-4-6 3 V 0,15 MHz - 80MHz 6 V in ISM bands between 0,15 MHz and 80 MHz 80% AM at 1 kHz	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines	IEC 61000-4-11 0 % UT; 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % UT; 1 cycle and 70 % UT; 25/30 cycles Single phase: at 0° 0 % UT; 250/300 cycle	IEC 61000-4-11 0 % UT; 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % UT; 1 cycle and 70 % UT; 25/30 cycles Single phase: at 0° 0 % UT; 250/300 cycle	Mains power quality should be that of a typical commercial or hospital environment. If the user of the BayPort™ 6-Bay Charger requires continued operation during power mains interruptions, it is recommended that the BayPort™ 6-Bay Charger be powered from an uninterruptible power supply or a battery.
NOTE UT is the a.c. mains voltage prior to application of the test level.			

Electromagnetic Compatibility

Guidance and manufacturer's declaration - Electromagnetic Emissions			
The BayPort™ 6-Bay Charger is intended for use in the electromagnetic environment specified below. The customer or the end user of the BayPort™ 6-Bay Charger should assure that it is used in such an environment.			
Emissions Test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	Group 1	The BayPort™ 6-Bay Charger 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	Class A	The BayPort™ 6-Bay Charger is suitable for use in all establishments other than domestic 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	Class A	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	Complies	

NOTE The EMISSIONS characteristics of this equipment make it suitable for use in industrial areas and hospitals (CISPR 11 class A). If it is used in a residential environment (for which CISPR 11 class B is normally required) this equipment might not offer adequate protection to radio-frequency communication services. The user might need to take mitigation measures, such as relocating or re-orienting the equipment.

Table 9 - Test specifications for Enclosure Port Immunity to RF wireless communications equipment

Test frequency (MHz)	Band (MHz)	Service	Modulation	Maximum power (W)	Distance (m)	Immunity Test Level (V/m)
385	380 - 390	TETRA 400	Pulse modulation 18Hz	1,8	0,3	27
450	430 - 470	GMRS 460, FRS 460	FM ± 5Hz deviation 1 kHz sine	2	0,3	28
710	704 - 787	LTE Band 13, 17	Pulse modulation 217 Hz	0,2	0,3	9
745						
780						
810	800 - 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation 18Hz	2	0,3	28
870						
930						
1720	1700 - 1990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	Pulse modulation 217 Hz	2	0,3	28
1845						
1970						
2450	2400 - 2570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation 217 Hz	2	0,3	28
5240	5100 - 5800	WLAN 802.11 a/n	Pulse modulation 217 Hz	0,2	0,3	9
5500						
5785						

Troubleshooting and Service

Symptom	Possible Issue	Solution
Battery(ies) not charging	Main power cord not plugged in	Plug in cord
	Main power switch is not fully engaged	Toggle ON/OFF switch
	Bad battery(ies)	Replace battery(ies)
	Internal component failure	Return unit to manufacturer for service

Warranty and Service

Warranty against manufacturer's defects applies to the BayPort™ 6-Bay Charger under normal use for one (1) year from the date of sale from Long Island Technology Group (includes parts and labor).

The warranty does not cover products damaged by the following:

- Accident, misuse, abuse, or alteration
- Servicing by unauthorized persons
- Use with unauthorized accessories

In all cases Long Island Technology Group, reserves the right to determine the cause of all malfunctions and at its sole discretion will determine the damage and/or repairs that are covered under this warranty.

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Contents are fragile.
Handle with care.

Conforms to:
IEC 60601-1 Edition 3.1, IEC 60601-1-2 Edition 4
AAMI ES60601-1 Edition 1, CSA C22.2 NO 60601-1:08 Edition 2

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