



TechBook

in.stream 2

audio station for spas



Awesome sound quality

All in one audio system and power supply

Full control of your audio from spa side





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Safety instructions



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE SCREWS ON THE BACK OF THE ENCLOSURE. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with the arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the service literature accompanying this appliance.



IMPORTANT SAFETY INSTRUCTIONS:

For your own safety please read the following important safety instructions carefully before attempting to connect this unit to the mains power supply. They will also enable you to get the best performance from and prolong the life of the unit:

- * READ THESE INSTRUCTIONS.
- * KEEP THESE INSTRUCTIONS.
- * HEED ALL WARNINGS.
- * FOLLOW ALL INSTRUCTIONS.
- * CLEAN ONLY WITH DRY CLOTH. BEWARE THE APPLICATION OF SOME PRODUCTS COMMONLY USED AGAINST CORROSION (SUCH AS WD-40 FAMILY PRODUCTS) AS THEY COULD DAMAGE THE ENCLOSURE, DUE TO A NEGATIVE CHEMICAL REACTION BETWEEN SOME INDUSTRIAL OILS AND ITS PLASTIC ENCLOSURE. ANY OTHER MATERIALS WHICH MAY COME IN CONTACT WITH THE ENCLOSURE MUST BE CAREFULLY EVALUATED UNDER END USE CONDITIONS FOR COMPATIBILITY.
- * DO NOT BLOCK ANY VENTILATION OPENINGS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- * DO NOT INSTALL NEAR ANY HEAT SOURCES. CLEARANCE AND MINIMUM DISTANCE BETWEEN THE VARIOUS PARTS OF THE APPLIANCE AND THE SURROUNDING STRUCTURE ARE NOT SPECIFIED AS LONG AS THEY ARE SUFFICIENT SO THAT THE AMBIENT TEMPERATURE AROUND THE APPARATUS DOES NOT EXCEED 140°F (60°C).
- * DO NOT DEFEAT THE SAFETY PURPOSE OF THE POLARIZED OR GROUNDING-TYPE PLUG. A POLARIZED PLUG HAS TWO BLADES WITH ONE WIDER THAN THE OTHER. A GROUNDING TYPE PLUG HAS TWO BLADES AND A THIRD GROUNDING PRONG. THE WIDE BLADE OR THE THIRD PRONG ARE PROVIDED FOR YOUR SAFETY. IF THE PROVIDED PLUG DOES NOT FIT INTO YOUR OUTLET, CONSULT AN ELECTRICIAN FOR REPLACEMENT OF THE OBSOLETE OUTLET.
- * PROTECT THE POWER CORD FROM BEING WALKED ON OR PINCHED PARTICULARLY AT PLUGS, CONVENIENCE RECEPTACLES, AND THE POINT WHERE THEY EXIT FROM THE APPARATUS.
- * ONLY USE ATTACHMENTS/ACCESSORIES SPECIFIED BY THE MANUFACTURER.
- * UNPLUG THIS APPARATUS DURING LIGHTNING STORMS OR WHEN UNUSED FOR LONG PERIODS OF TIME.
- * REFER ALL SERVICING TO QUALIFIED SERVICE PERSONNEL. SERVICING IS REQUIRED WHEN THE APPARATUS HAS BEEN DAMAGED IN ANY WAY, SUCH AS POWER-SUPPLY CORD OR PLUG IS DAMAGED, LIQUID HAS BEEN SPILLED OR OBJECTS HAVE FALLEN INTO THE APPARATUS, THE APPARATUS HAS BEEN EXPOSED TO RAIN OR MOISTURE, DOES NOT OPERATE NORMALLY, OR HAS BEEN DROPPED.

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Warnings



WARNINGS:

Before installing or connecting the unit, please read the following.

- * DO NOT DISASSEMBLE OR ALTER THE APPARATUS.
- * DO NOT USE FOAM TO ISOLATE THE UNIT.
- * TURN POWER OFF BEFORE SERVICING OR MODIFYING ANY CABLE CONNECTIONS IN THIS UNIT.
- * TO PREVENT ELECTRIC SHOCK HAZARD AND/OR WATER DAMAGE TO THIS APPARATUS, ALL CONDUITS MUST BE PLUGGED WITH THE ATTACHED GASKET.
- * AUDIO/VIDEO COMPONENTS SHALL BE LOCATED ABOVE THE FLOOD ZONE WHERE THEY ARE UNLIKELY TO BE SUBMERGED IN THE EVENT THE SPA IS OVERFILLED (OR SIMILAR ABNORMAL CONDITION OCCURENCE).
- * PRODUCT MUST BE DISPOSED OF SEPARATELY IN ACCORDANCE WITH LOCAL WASTE DISPOSAL LEGISLATION.



WARNINGS:

When this equipment is provided as an audio/video components for spas, U1563 - 6th edition requires that the following instructions (or equivalent) be provided as part of the instruction manual for the spa equipment.

- * "CAUTION – RISK OF ELECTRIC SHOCK. DO NOT LEAVE COMPARTMENT DOOR OPEN";
- * "CAUTION – RISK OF ELECTRIC SHOCK. REPLACE COMPONENTS ONLY WITH IDENTICAL COMPONENTS";
- * "DO NOT OPERATE THE AUDIO/VIDEO CONTROLS WHILE INSIDE IN THE SPA".
- * "WARNING – PREVENT ELECTROCUTION. DO NOT CONNECT ANY AUXILIARY COMPONENTS (FOR EXAMPLE CABLE, ADDITIONAL SPEAKERS, HEADPHONES, ADDITIONAL AUDIO/VIDEO COMPONENTS, ETC.) TO THE SYSTEM".
- * THESE UNITS ARE NOT PROVIDED WITH AN OUTDOOR ANTENNAE; WHEN PROVIDED, IT SHOULD BE INSTALLED IN ACCORDANCE WITH ARTICLE 810 OF THE NATIONAL ELECTRICAL CODE, ANSI/NFPA 70.
- * DO NOT SERVICE THIS PRODUCT YOURSELF AS OPENING OR REMOVING COVERS MAY EXPOSE YOU TO DANGEROUS VOLTAGE OR OTHER RISK OF INJURY. REFER ALL SERVICING TO QUALIFIED SERVICE PERSONNEL.
- * WHEN THE POWER SUPPLY CONNECTIONS OR POWER SUPPLY CORD(S) ARE DAMAGED; IF WATER IS ENTERING THE AUDIO/VIDEO COMPARTMENT OR ANY ELECTRICAL EQUIPMENT COMPARTMENT AREA; IF THE PROTECTIVE SHIELDS OR BARRIERS ARE SHOWING SIGNS OF DETERIORATION; OR IF THERE ARE SIGNS OF OTHER POTENTIAL DAMAGE TO THE UNIT, TURN OFF THE UNIT AND REFER SERVICING TO A QUALIFIED SERVICE PERSONNEL.
- * THIS UNIT SHOULD BE SUBJECTED TO PERIODIC ROUTINE MAINTENANCE (FOR EXAMPLE, ONCE EVERY 3 MONTHS) TO MAKE SURE THAT THE UNIT IS OPERATING PROPERLY.
- * PRODUCT MUST BE DISPOSED OF SEPARATELY IN ACCORDANCE WITH LOCAL WASTE DISPOSAL LEGISLATION.





Introduction



in.stream 2 audio station for spas

In.stream 2 audio system offers you the perfect means to bring music into your spa. The in.stream 2 is simple to install and compatible with numerous audio sources. For example, you may connect the in.stream 2 to an iPod using the auxiliary audio input or play music wirelessly using a Bluetooth mobile device. Listen to music in MP3 format saved on a USB flash disk or tune in to an FM station of your choice using the in.stream 2 integrated FM receiver. Depending on the configuration used, the in.stream 2 can handle up to 4 speakers and one subwoofer.

The audio station can be used to charge most mobile devices on the market with its onboard USB charger controller.

Powered with its own internal universal power supply, the in.stream 2 can be used in any place in the world. All the electronics circuits are contained in a innovatively designed and splashproof plastic enclosure.

The in.stream 2 is equipped with state of the art class D audio amplifiers. This type of amplifier is very power efficient and dissipates much less heat than any comparable audio system for use in spa.

Depending on the selected configuration, the in.stream 2 conveniently lets you control music from the main keypad or may be used as a stand-alone.

Main characteristics

- Fully splashproof (IPx5)
- Integrated universal power supply
- 1 auxiliary input
- Compatible USB port
- Integrated FM receiver with external antenna
- Bluetooth receiver
- Mobile device USB charger controller
- Up to 4 speakers and one subwoofer



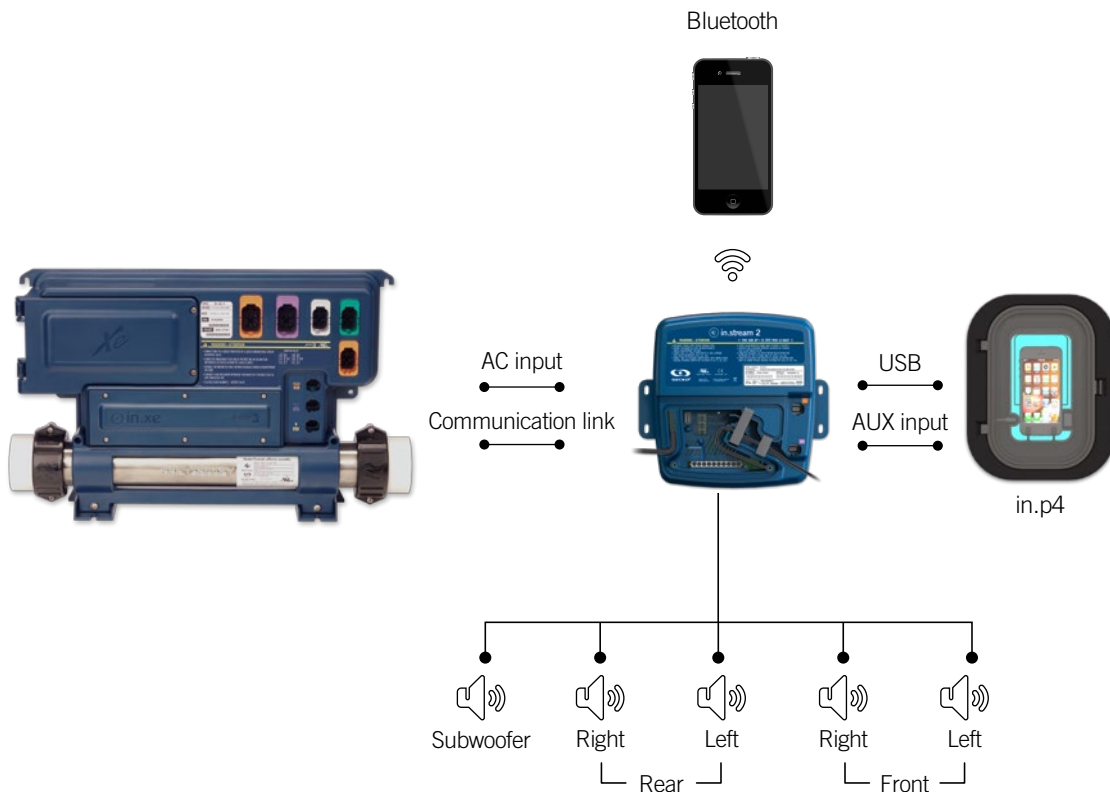
Overview



Depending on the chosen configuration, the in.stream 2 can support up to 4 speakers, 1 subwoofer, an auxiliary input, a USB connection with 1A charging capability, FM radio receiver and Bluetooth streaming.

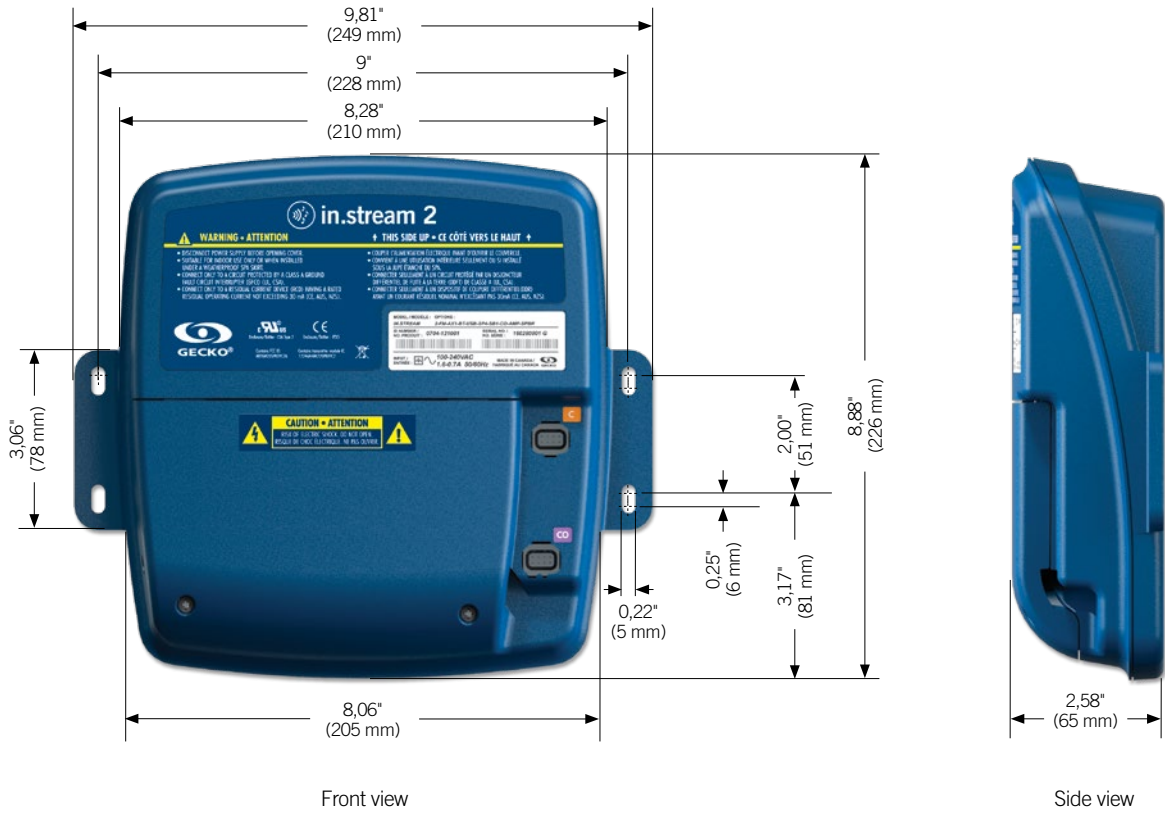
The in.p4 waterproof enclosure, which provides protection to your iPod or smart phone, is available as an option.

With a compatible keypad, you will have full control over the in.stream 2 features from inside of your spa.





Dimensions





Installation

To prevent water from getting inside the device, the in.stream 2 should be installed on a vertical surface as shown below:



Note: The in.stream 2 must be installed at least 4" (100mm) above potential flood level. A clearance of at least 0.75" (19 mm) is required to have a free heat circulation at the back of the unit.

Secure the in.stream 2 onto two wall studs.

Firmly attach upper mounting holes one at a time on each side of the apparatus.

Repeat the process for lower mounting holes.

The following materials are recommended:

4 - # 10 screws of appropriate length with round, truss or pan head.

4 - washers 0.5" OD x .0625" thickness
(12 mm OD x 1.5 mm)

Note:

- Do not use foil insulation in front of the unit.
- Place the unit far from any radio noise source such as variable speed control and motor.
- If present, install the FM antenna in a vertical orientation and fully deployed.
- This unit is equipped with an automatic audio volume control that is active when temperature inside the enclosure is very high.



Connections

Preparation



To prevent electric shock hazard, do not connect to main power supply while the cover is removed.



Remove the cover screws from the front of the apparatus with a Phillips screw driver.

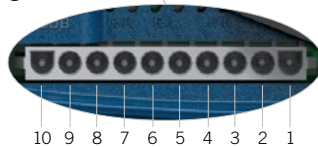


Remove cover and put aside the foam gaskets located in the wire channel.

Connecting the speakers and subwoofer



Class 2 Wiring



Connector pins	Identification
1	Front Left speaker (+)
2	Front Left speaker (-)
3	Front Right speaker (-)
4	Front Right speaker (+)
5	Rear Left speaker (+)
6	Rear Left speaker (-)
7	Rear Right speaker (-)
8	Rear Right speaker (+)
9	Subwoofer (+)
10	Subwoofer (-)

The speakers and the subwoofer output terminals are located on the 10-pin MATE-N-LOK connector marked "SUB R-R R-L F-R F-L"



Caution: The in.stream 2 does not come with speakers and associated wiring. The interconnection between the audio system and the speakers must be "Class 2 Wiring" and be done by qualified personnel.



To connect your own speaker cable or to connect the optional adaptor, insert the 10-pin connector into the appropriate connector. Route the wires through the molded strain relief channel as illustrated.



Connections

Speaker cables

Customer made cable

For customer that want to build their own cable, the following parts can be used.



The required housing connector is a 10 position Universal MATE-N-LOK.
TE CONNECTIVITY: Part number 926302-3

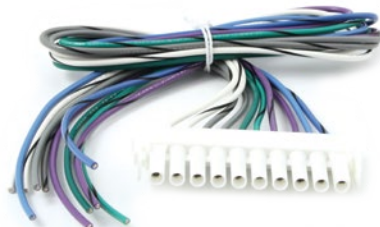
The suggested crimping contact are for AWG 14-20 TE CONNECTIVITY:
Part number 350550-3

Optional adapter cables

An optional adapter cable allows you to connect the 10-pin connector from the in.stream 2 to the 3x4-pin connector commonly used in spa audio systems. With this adaptor, the subwoofer output is on a separate 1x2-pin connector.



Part number: 9920-401425



Part number: 9920-401428

3x4-pin

Connector pins	Identification	Wire Color
1	NC	NC
2	NC	NC
3	Rear Left speaker (+)	Green
4	Rear Left speaker (-)	Green-Black
5	Front Right speaker (+)	Gray
6	Front Right speaker (-)	Gray-Black
7	Rear Right speaker (+)	Purple
8	Rear Right speaker (-)	Purple-Black
9	NC	NC
10	Front Left speaker (+)	White
11	Front Left speaker (-)	White-Black
12	NC	NC

10-pin

Connector pins	Identification	Wire Color
1	Front Left speaker (+)	White
2	Front Left speaker (-)	White-Black
3	Front Right speaker (-)	Gray-Black
4	Front Right speaker (+)	Gray
5	Rear Left speaker (+)	Green
6	Rear Left speaker (-)	Green-Black
7	Rear Right speaker (-)	Purple-Black
8	Rear Right speaker (+)	Purple
9	Subwoofer (+)	Blue
10	Subwoofer (-)	Blue-Black

1x2-pin

Connector pins	Identification	Wire Color
1	Subwoofer (+)	Blue
2	Subwoofer (-)	Blue-Black



Connections

Connecting the docking station in.p4 to the in.stream 2

The in.p4 docking station features a USB and an 1/8" (3,5 mm) audio input mini jack connector.



To connect the docking station into the in.stream 2, simply insert the USB cable into the USB receptacle and the 1/8" (3,5 mm) mini jack into the AUX receptacle as illustrated.

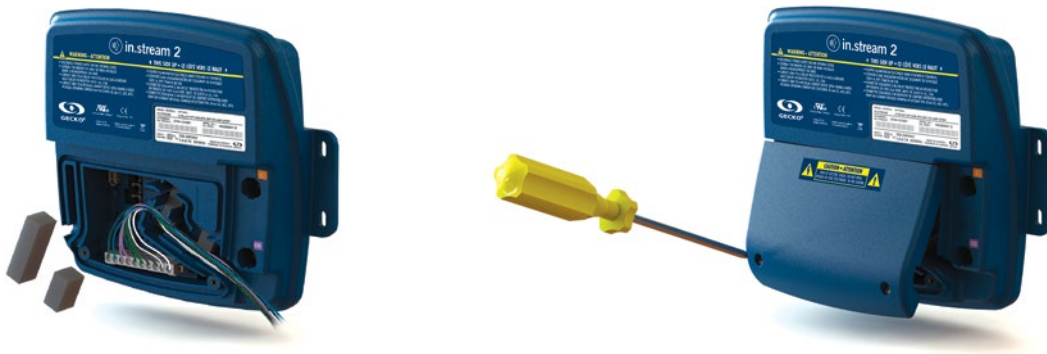
Route both cables through the molded strain relief channel as illustrated.



Connections

Completing the cabling

When all the audio cables are connected, put back the foam gaskets and the cover. Tighten the cover screws with the Phillips screw driver ensuring you do not overtighten them.



Complete the cabling as follow:



Connect the AC power cable of the in.stream 2 to a direct output of the spa pack. See the documentation related to your specific pack model for more details on this connection.

Connect the CO cable of the in.stream 2 to the CO connector of the spa pack. See the documentation related to your specific pack model for more details on this connection.



Bluetooth overview

Pairing with a Bluetooth enabled device

The in.stream 2 can play music from any device equipped with Bluetooth wireless technologies, however, you must pair your mobile device to the audio receiver in order to do so.

The system is ready to pair when it is not already connected to another device. To pair your device, make sure that you are close enough to the in.stream 2, that it is turned on and that it is set in Bluetooth mode.

Note: In basic configuration (not connected to a keypad or controller), the in.stream 2 is set in Bluetooth mode. Otherwise, please refer to your specific keypad operating manual for details on the in.stream 2 functions.

Follow these steps to pair your device

1. Open the Bluetooth settings on your device.
The location of the settings will depend on the device you are using.
2. Make sure Bluetooth is on.
5. Once the pairing is done select in.stream 2 and when connected is displayed the in.stream 2 will be ready to start playing the selected audio.



3. Select "in.stream 2" in the list of discoverable Bluetooth devices detected nearby.
4. When prompted, enter 5555 as the PIN Code.

Note: If the device moves out of range and loses connection, it should reconnect automatically as soon as it is close enough. This should happen without having to go through the menu again.

The in.stream 2 will keep up to 8 devices in its memory. If one of the last three connected devices is in range and has its Bluetooth turned on, it will automatically connect with in.stream 2.

If multiple devices are within range and have already been paired with the in.stream 2, priority will be given to the device that was first detected in the in.stream 2 memory.





Firmware update

The in.stream 2 firmware can be updated in the field. This is done using a USB flash disk inserted in the in.stream 2 USB connector. The USB connector is accessible by removing the in.stream 2 cover. See the [Connection](#) section of the user manual for details on removing the cover. See the following picture for the location of the USB connector.

The flash disk used for the firmware update can be any size and type but should be formatted in FAT32 for correct operation. See the help on formatting a disk in Microsoft Windows system for details on how to format a flash disk in FAT32.

Copy all the files received for the update on the flash disk. The files must be located in a folder named "instream2". Insert the USB flash disk in the in.stream 2 USB connector and the process should start by itself. The status led should be checked to see what happens during the update. See the following picture for the location of the status led.



Warning: Do not disconnect power to the in.stream 2 or remove the flash disk during firmware update since this can make the in.stream 2 unbootable and it will be necessary to send it back in for repair.



Warning: At anytime, if a flash disk containing software update files is inserted into the USB connector, always remove it while the power is ON, wait 5 seconds and then power off the system.

Attention: If the update process does not start or does not end, make sure to disconnect the flash disk prior to power off the system and reboot to try the process again.

During all the software update process, the status led should be flashing, stop flashing and restart flashing several times. Consider the update over when the status led stays solid ON for at least 20 seconds.

The process should take about 3 minutes to complete. After the update is finished, the in.stream 2 should operate using the new firmware. Normally, a power on reset is not needed to reboot the system following the software update.

If the system does not start by itself, make sure to disconnect the flash disk and then just power off the system and reboot it.





Compatible keypads

List of compatible keypads for the in.stream 2

For more information on the compatible keypads for your in.stream 2 refer to the corresponding Techbook.



[in.k500 main keypad](#)
Color LCD display, 7 keys



[in.k800 main keypad](#)
Color LCD display, 10 keys



[in.k1000 main keypad](#)
Color LCD capacitive
touchscreen display



Regulatory statement

FCC Compliance Statement

Contains Transmitter Module FCC ID: A8TBM23SPKXYC2A

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.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

FCC RF Exposure Statement

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

IC Compliance Statement

Contains transmitter module IC: 12246A-BM23SPKXYC2

This device complies with Industry Canada licence-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.

Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

RSS-102 RF Exposure Statement

This equipment complies with Industry Canada radiation exposure limits set forth for an uncontrolled environment.



Specifications

Environmental ratings

Operating temperature:	-4 °F (-20 °C) to 140 °F (60 °C)
Storage temperature:	-22 °F (-30 °C) to 185 °F (85 °C)
Humidity:	70% max
Water resistance:	IPx5

Mechanical

Weight:	3.6 lb (1.64 Kg)
Dimensions (W x H x D):	9.81" x 2.58" x 8.88" (249 x 65 x 205 mm)

Line input

Input voltage:	100-240VAC 50/60 Hz
Input power:	180 W

Audio outputs

Maximum number of speakers:	4
Maximum number of subwoofer:	1
Audio amplifier type:	Class D
Output power (speaker output):	25 W _{RMS} , 50 W peak
Output power (subwoofer):	50 W _{RMS} , 75 W peak
Output impedance (speaker):	4-8 Ohms
Output impedance (subwoofer):	2-4 Ohms
Harmonic distortion (speaker):	0.015% at 1 W (1 KHz)
Harmonic distortion (subwoofer):	0.015% at 1 W (100 Hz)
Frequency response (speaker):	5 Hz to 20 KHz
Frequency response (subwoofer):	10 Hz to 200 Hz

Auxiliary inputs

Maximum number of inputs:	1
Connection type:	1/8" (3.5 mm) stereo jack
Maximum voltage:	2.2 Vpp
Impedance:	100 Kohms

FM receiver

Frequency band:	87.5-107.9 MHz
RF sensitivity:	2.2 µV
Harmonic distortion:	0.1% à 1 KHz
Frequency response:	30Hz à 15 KHz
FM decoder:	Stereo Multiplex
Antenna type:	1 m (39") cable
Antenna Connector:	1/8" (3.5 mm) stereo jack



Specifications

Bluetooth receiver

Frequency band:	2400 MHz to 2483.5 MHz
Transmit power:	Class 2, 4 dBm
Bluetooth version:	Bluetooth v4.1
Antenna type:	Modular integrated
Profiles supported:	A2DP, AVRCP

USB player

Compatibility:	USB 1.1, 2.0 and 3.0
File format support:	MP3 (files on the root)
Disk format:	FAT32
Connector type:	USB type A



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