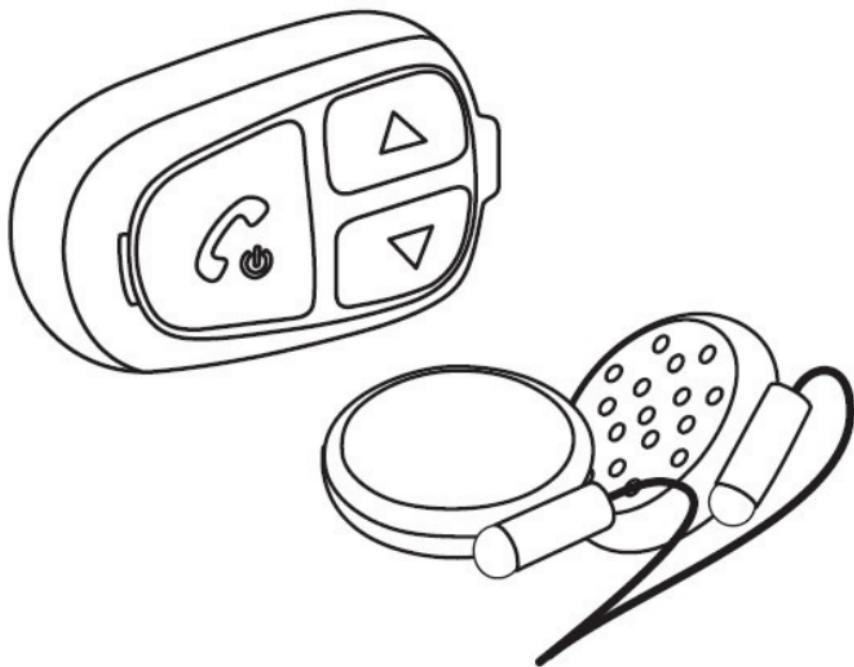


UCLEAR™

Helmet Communicator

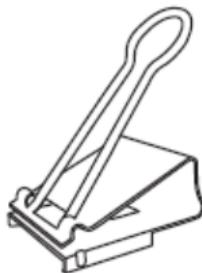
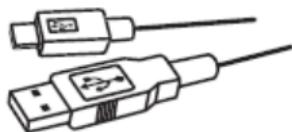
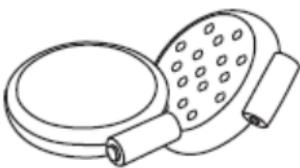
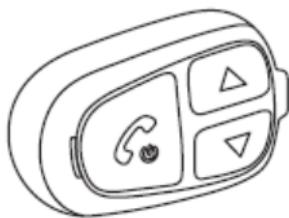


HBC 100

User Manual

Welcome to UCLEAR™

HBC100 *Helmet Communicator User Manual*

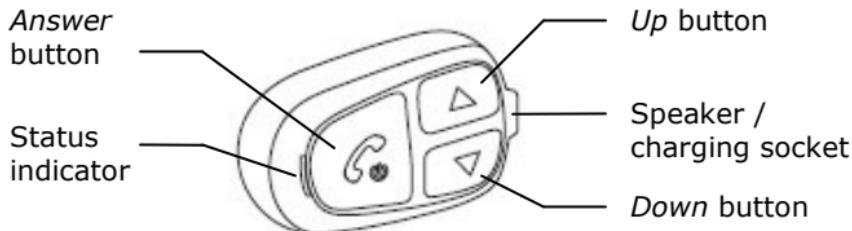


Contents

Contents -----	2
Quick User Guide -----	3
Warnings and Safety Instructions -----	7
Features -----	9
Installation -----	10
General Operations -----	13
Mobile Phone Operations -----	15
Music Streaming Operations -----	17
Intercom Operations -----	18
Button Configurations Summary -----	19
Status Indicator Configurations Summary -----	20
Technical Data -----	21
Notices -----	22

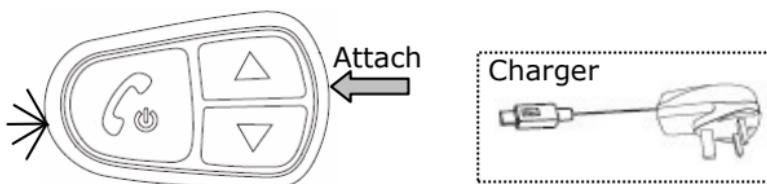
Quick User Guide

Your HBC100 at a glance



GENERAL FUNCTIONS

Before using your HBC100 **please charge it first!**



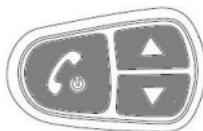
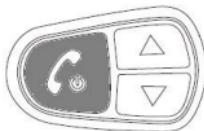
Charge

- To charge, use the provided charging cable connecting it either to a USB port or to the adaptor provided.
- While charging, the status indicator would show red.
- Upon fully charged, the status indicator would show blue.

Low Battery Indicator

- You would need to charge the helmet communicator when the status indicator blinks red twice every 2 seconds with a beep every minute.

Quick User Guide

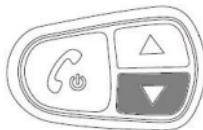
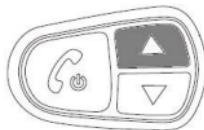


Power On

- Hold *Answer* for 2 seconds.

Power Off

- Hold *Answer* for 5 seconds.



Volume Up

- Press *Up* once.

Volume Down

- Press *Down* once.

***NOTE:** The volumes for mobile phone, music and intercom functions are controlled separately.

MOBILE PHONE FUNCTIONS

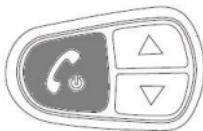
Pairing your HBC100 with your mobile phone



Pairing

- Hold *Up* and *Down* buttons together for 2 seconds. The status indicator would alternately blink blue and red.
- From your mobile phone Bluetooth menu, search for '**UCLEAR HBC100**'.
- Your phone would prompt you for a passcode, enter '**0000**'.

Quick User Guide



Answer Incoming Call

- Use voice pickup, say 'hello' or 'pickup'.

OR

- Manually press *Answer* button once.

Last Number Redial

- Hold *Answer* and *Up* button for 2 second.

Reject/ End Incoming Call

- Hold *Answer* button for 2 seconds.



3 Way Calling

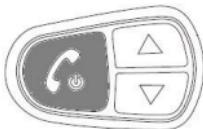
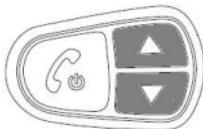
- To swap between 2 concurrent calls, press the *Answer* button once.

Voice Dial

- Hold *Answer* and *Down* button for 2 second.

MUSIC STREAMING FUNCTIONS

***NOTE:** For music dongles you would need to pair the music dongle before using it with HBC100.



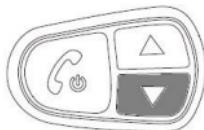
Pairing (for Music Dongle Only)

- Hold *Up* and *Down* buttons together for 2 seconds.

Play/ Stop (Toggle Functions)

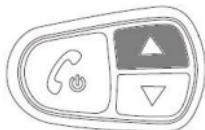
- Press the *Answer* button 2 times.

Quick User Guide



Backtrack

- Press the *Down* button 2 times.



Fast Forward

- Press the *Up* button 2 times.

INTERCOM FUNCTIONS

Pairing your HBC100 to another HBC100



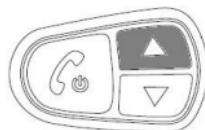
Helmet 1
(Master Unit)



Helmet 2
(Secondary Unit)

Pairing (*Needs to be done once*)

- The helmet communicator needs to be switched off before performing the following steps:
Press *Answer* and *Down* buttons for 5 seconds on helmet 1 & press *Answer* and *Up* buttons for 5 seconds on helmet 2.



Initiate or Terminate Conversation (Toggle Functions)

- Hold the *Up* button for 2 seconds.

Warnings and Safety Instructions

This manual uses the  and  icons to highlight certain instructions. Below is an explanation of the icons.



Attention

- This icon highlights special instructions and precautions intended to avoid damage to the system. Non-compliance may void the product warranty.



Warning

- This icon provides precautions important to prevent injuries to the user.



Attention

- Please read through the operating instructions to understand how to operate the system, in particular the safety instructions.



Warning

- Please note that there are some countries that by law disallow the rider to set the UCLEAR™ helmet communicator to a volume that prevents you from perceiving the surrounding.
- Please note that in some countries the use of both speakers simultaneously is authorised only out of public traffic conditions.
- Please check with the relevant authorities for local safety legislation before using the UCLEAR™ helmet communicator on the road.

Warnings and Safety Instructions

- Prolonged exposure to loud sounds may lead to permanent hearing damage.
- Do not attempt to place an outgoing call through the mobile phone while riding on the motorcycle at any point of time.
- Please do not use the *UCLEAR™* helmet communicator in anyway that may distract you or hinder your judgment whilst on the move. Never ever compromise your safety and the safety of others.



Attention

- Charging and handling rechargeable battery products incorrectly may cause them to overheat, catch fire or explode. To prevent this please follow the instructions below:
 - i) Never change the batteries yourself, always bring it to an authorised dealer to perform the replacement for you.
 - ii) When charging, use **ONLY** the charging cable provided or a replacement cable from the *UCLEAR™* dealer. Using similar, compatible or any other cables may lead to permanent product damage and will void the product warranty.
- Never make any modifications to any parts of the *UCLEAR™* helmet communicator in any way as it may cause the system to malfunction causing hurt to you.
- Do not modify your helmet to use with this system – it is not necessary to do so.

Features

The **UCLEAR™ helmet communicator** has three main functions: to make mobile phone calls, to listen to music entertainment by wireless Bluetooth and for intercom talk.

Mobile Phone Functions

- Bluetooth phone audio capabilities, HFP & HSP Profile.
- Voice activated call pick up.

Music Streaming Functions

- Bluetooth music streaming with hi-fi and stereo capabilities, A2DP Profile.
- Bluetooth Audio/Video Remote Control capability, AVRCP profile.

Intercom Functions

- Motorcycle to motorcycle or rider to passenger connection via two **UCLEAR™ helmet communicator** up to 10m range.

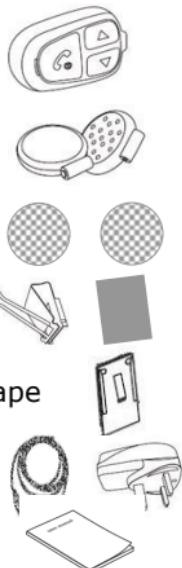
Advanced Product Features

- Self adaptive intelligent noise cancellation algorithms ensure conversations on the go are clear even in noisy environments.
- Voice controlled incoming call answering.
- The weather resistant engineered design ensures the possibility of communication rain or shine.
- The integrated microphone array technology allows you to communicate without the hassle of using boom microphones.

Installation

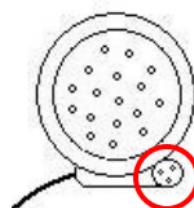
The UCLEAR™ HBC100 helmet communicator package contains:

- A UCLEAR™ HBC100 helmet communicator control unit
- A pair of *hi-fi stereo headset* with embedded microphones
- *Velcro* for speakers
- A *clip bracket* and *anti slip rubber patch*
- A *metal mounting bracket* with double sided tape
- An *AC charger* and *USB charging cable*
- A *user manual*

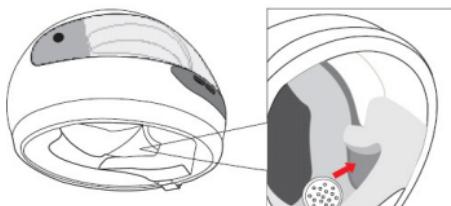


Install Speakers

- Use the velcros to install the speakers into the ear cavity of the helmet.
- The microphones MUST be placed facing out.
- Left and right speakers must be installed symmetrically.



Microphone

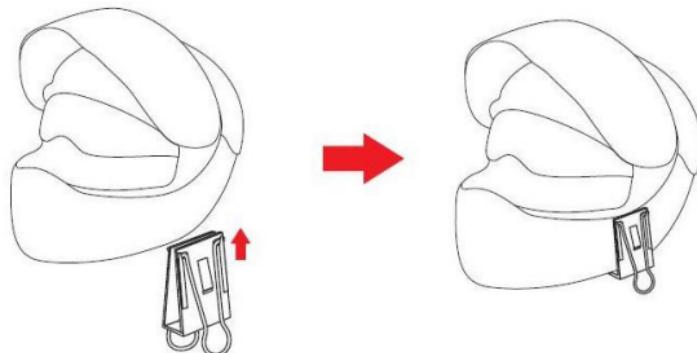


Installation

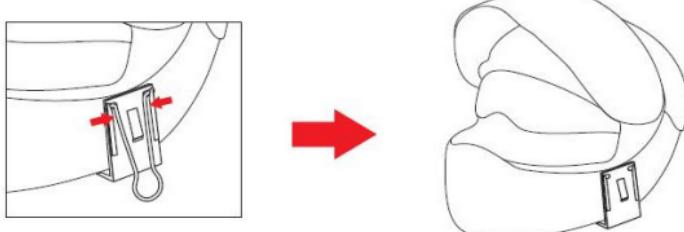
Your **UCLEAR™ HBC100 helmet communicator package** comes with 2 types of mounting bracket: a **clip bracket** and a **metal mounting bracket**. Use either of the brackets to install the HBC100 control unit onto your helmet.

Install Clip Bracket

- Position and fasten the clip bracket onto the helmet.



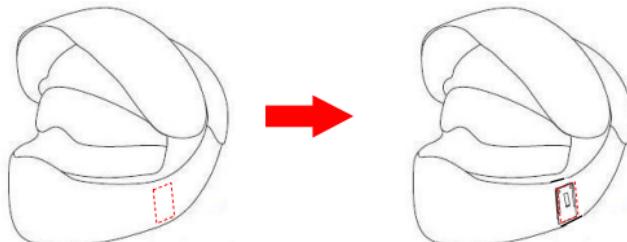
- When in the correct position, the clip bracket should be firmly secured onto the helmet.
- Use additional anti slip rubber patch provided if required.
- Remove the metal handles after clip bracket has been installed.



Installation

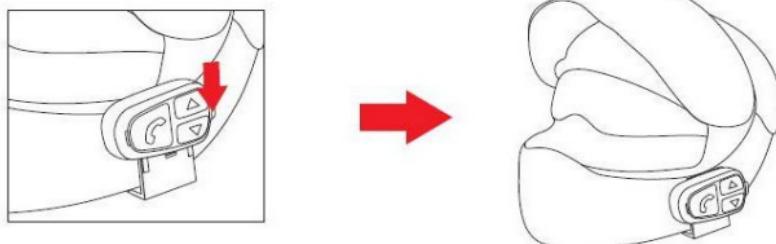
Install Metal Mounting Bracket

- Identify a position on the helmet to adhere the Metal Mounting Bracket.



- Peel off the double sided tape protective film.
- Carefully place the Metal Mounting Bracket onto the position identified in step 1. (You may only do this step once)
- Apply slight pressure onto the metal mounting bracket to ensure that the metal mounting bracket is firmly secured.

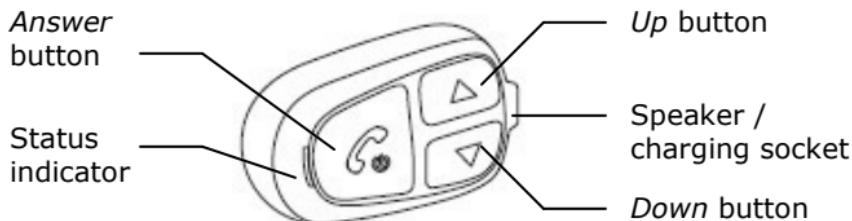
Install Main Unit



- Slide main unit onto the clip bracket. You should hear a 'click' sound when fully inserted.
- Fully insert the speaker USB connector.

General Operations

Your UCLEAR™ HBC100 helmet communicator is now setup and ready to go!



The operations described here are applicable to all modes of operations.

Power On

- Hold the *Answer button* for 2 seconds to power on the helmet communicator. The status indicator will blink blue and a power up tone can be heard.

Power Off

- To switch off the helmet communicator, press and hold the *Answer button* for 5 seconds. The status indicator will blink red 5 times followed by a long beep before fully shutting down.

Power Save Mode (Auto Power Off)

- If intercom had been in use before, and all other Bluetooth devices have been disconnected, the system will auto shutdown in 1 hour. Else system would auto power off after 10 minutes of not connecting to any other device.

Low battery

General Operations

- When the battery level is low, the status indicator would flash red twice every 2 seconds while emitting a warning beep every minute.

Charging the Unit

- To charge the helmet communicator, connect the provided charging cable to the speaker/ charging socket. Upon charging, if the unit is on, system would automatically initiate power down.

Volume Control

- The volume control of the helmet communicator can be controlled using the *Up* and *Down* buttons. Pressing the *Up* or *Down* button one time would increase or reduce the volume respectively. The volume control for each mode is independent of each other.

Automatic Pairing

- The helmet communicator has the ability to connect to the last paired device automatically for two features – music and mobile phone.
- Automatic pairing of the helmet communicator with music dongles is dependent on the music dongle.

Automatic Profile Switch

- The helmet communicator supports multiple profiles concurrently, but at any point of time only one profile is active. The automatic profile switch determines which profile should be active at any point of time starting from the highest priority: (1) Mobile Phone functions (2) Intercom functions and (3) Music functions.
- The helmet communicator can be paired to more than 1 device, but it is recommended to keep it at the most to 2

Mobile Phone Operations

different devices linked to the helmet communicator in order to experience the most out of the helmet communicator.

To use the helmet communicator with your mobile phone for the first time, you must first connect them wirelessly by pairing.

Pairing

- To connect the helmet communicator to a mobile phone, hold the *Up* and *Down* buttons for 2 seconds. This puts the helmet communicator into paring mode. The status indicator would blink blue and red alternately.
- Next, turn on the mobile phone Bluetooth functions and search for Bluetooth devices. Select '**UCLEAR HBC100**' to pair with the desired device.
- When prompted to enter a passcode, enter '**0000**'.

*Most mobile phones when paired would be automatically connected with both phone and music Bluetooth capabilities.

After pairing the helmet communicator to your mobile phone, you may now use the helmet communicator to answer your calls or make outgoing calls or listen to music.

Voice Activated Pick Up Calls

- When a call comes to the mobile phone, say 'hello' or 'pick-up' to answer the call **OR** Press the Answer button once.

Reject Calls

- To reject an incoming call or an incorrectly placed outgoing call hold the Answer button for 2 seconds.

Mobile Phone Operations

Voice Call

- To activate voice call, hold the *Down* and *Answer* buttons for 2 second. The accuracy of this function is dependent on the mobile phone.

Last Number Redial

- To redial the last number, hold the *Up* and *Answer* buttons for 2 second. The capability of this function is dependent on the mobile phone used.

3 way calling

- Whilst on a call, if an incoming call comes in, you may answer the call by pressing the *Answer* button once.
- To swap between 2 concurrent calls, press the *Answer* button once.
- To end a call during a 3 way call, holding the *Answer* button for 2 seconds would end the active call. Upon terminating the active call, the call on hold would automatically be the active call.

Music feature

- If the mobile phone supports A2DP/AVRCP profile, user may activate the music by playing it directly from the phone or by using controlling the phone via the helmet. To operate refer to Music Streaming Operations section. Should the documented steps do not work, refer to the phone user manual on how to activate the A2DP/ACRCP feature

Music Streaming Operations

To use the helmet communicator with your music dongle you must connect them first wirelessly first by pairing. This step is only required for music streaming dongles.

Pairing

- To connect the helmet communicator to a music dongle, hold the *Up* and *Down* buttons for 2 seconds. This puts the helmet communicator into pairing mode. The status indicator would blink blue and red alternately.
- Next, put the music dongle to pairing mode. Both the helmet communicator should automatically bind to each other.

After pairing the helmet communicator to a music dongle, you may use the helmet communicator to listen to the music stored in the music player connected to the dongle.

In order to use the helmet communicator to remotely control the music streaming device, the music dongle /music streaming device needs to have Bluetooth Audio/Video Remote Control capability, AVRCP profile.

Play & Stop

- The Play and Stop command is a toggle function. To play music press the *Answer* button 2 times. Pressing the *Answer* button 2 two times whilst music is playing would stop it.

Fast Forward

- To skip to the next track, press the *Up* button 2 times.

Backtrack

- To skip to previous track, press the *Down* button 2 times.

Intercom Operations

To use the intercom profile on the helmet communicator for the first time, you would need to first connect the two UCLEAR™ helmet communicators wirelessly by pairing.

Pairing

- Pairing readies one UCLEAR™ helmet communicator to search for the other UCLEAR™ helmet communicator. This pairing process needs to be carried out only once.
- With both helmet UCLEAR™ communicators powered off, hold *Answer* and *Down* button for 5 seconds for one helmet and hold *Answer* and *Up* buttons for 5 seconds for the other helmet. The status indicator for both helmets would blink blue and red alternately while trying to connect to each other.
- During the pairing process, please ensure that there are no other intercom units in close proximity.
- It is recommended that after the pairing process is successful. Restart both UCLEAR™ helmet communicators.

After pairing the two UCLEAR™ helmet communicators, you may now use the intercom profile.

Initiate Intercom (Toggle function)

- To start conversation, hold the *Up* button for 2 seconds.
- In the event where the link breaks during the conversation, you will need to re-initiate it when the helmets come back into Bluetooth range.

Terminate Intercom (Toggle function)

- To end the conversation, hold the *Up* button for 2 seconds.

Button Configurations Summary

The table below shows the button configurations.

Action	Button
Common Instruction Commands	
Power on	Hold <i>Answer</i> for 2 seconds
Power off	Hold <i>Answer</i> for 5 seconds
Activate Bluetooth pairing	Hold <i>Up & Down</i> for 2 seconds
Volume up	Press <i>Up</i> once
Volume down	Press <i>Down</i> once
Reset	Press <i>Answer, Up & Down</i> once
Voice Calling	
Pick up incoming call	Press <i>Answer</i> once
End call in progress	Hold <i>Answer</i> for 2 seconds
Reject incoming call	Hold <i>Answer</i> for 2 seconds
Voice dial	Hold <i>Answer & Down</i> for 2 seconds
Last number redial	Hold <i>Answer & Up</i> for 2 seconds
Music Streaming	
Play	Press <i>Answer</i> 2 times
Stop	Press <i>Answer</i> 2 times
Fast forward track	Press <i>Up</i> button 2 times
Backtrack	Press <i>Down</i> button 2 times
Intercom	
Pairing as helmet 1 (master unit)	Upon power up, hold <i>Answer</i> and <i>Down</i> for 5 seconds
Pairing as helmet 2 (secondary unit)	Upon power up, hold <i>Answer</i> and <i>Up</i> for 5 seconds
Connect intercom	Hold <i>Up</i> for 2 seconds
Disconnect intercom	Hold <i>Up</i> for 2 seconds

Status Indicator Configurations Summary

The table below shows the status indicator configurations.

	State	Status Indicator
1	Off (No power)	-
2	On (BT* not connected)	Blink blue fast
3	On (BT* connected)	Blink blue slowly
4	Phone & Music dongle Pairing mode	Blink blue & red alternately
5	Call in progress	Blink blue very slowly
6	In-coming call	Blink blue & red alternately
7	Battery low	Blink red every 2 seconds
8	Power down	Blink red 5 times
9	Intercom connected	Blink blue twice every 2 seconds
10	Intercom Pairing mode (Master)	Blink purple fast
11	Intercom Pairing mode (Slave)	Blink purple slowly
12	Battery charging	Solid Red
13	Battery fully charged	Solid Blue
14	Battery faulty	Solid purple

* BT - Bluetooth

Technical Data

Unit	
Dimensions (L x W x H)	60mm x 40mm x 15mm
Weight	30g/0.2lbs
Audio	
Frequency response	30Hz to 20kHz
Sampling rate	48kHz, 16 bit
SPL	105dB \pm 2dB
THD	0.5%
Bluetooth	
Specifications	Version 2.1 EDR, Class 2
Profiles	HSP, HFP, A2DP, AVRCP, Intercom
Radio	
Carrier frequency	2.4 – 2.483 GHz
Range	Up to 10m (open field)
RF output power	-6 dBm to 4 dBm
Power	
Power consumption	200mW (max)
Power input (charging)	5V / 400mA / 2W
Built-in battery	3.7V, 570mAh, Lithium-ion Polymer (Rechargeable)
Music/talk time	Up to 10 hours
Standby time	400 hours
Temperature	
Operation temperature	-10°C to +60°C (14°F to +140°F)
Charging temperature	0°C to +45°C (+32°F to +113°F)
Storage temperature	-40°C to +80°C (-38°F to +176°F)

Notices

BATTERY WARNING:

The *UCLEAR*TM helmet communicator contains a rechargeable lithium ion polymer battery. To reduce risks of fire or burns, do not disassemble, crush, puncture, short external contacts or dispose in fire or water.

CHARGING NOTICE:

To reduce the risk of personal injury, electrical shock, fire or damage to equipments, please follow all the instructions below:

- Do not immerse the product, AC adaptor or speakers in water.
- Do not install, place or use the product near any source of heat for example: stove, radiator, oven, toaster, coffee maker or other apparatus that gives off heat.
- Always use the provided AC power adaptor and cable included in the package to charge the product. Use of any incorrect power supply to charge the product may cause permanent damage to the product and render the warranty void.

WARRANTY:

Without prejudice of legal warranty, the product is covered under a 1 year warranty by manufacturer from the date of purchase. Please produce the proof of purchase when you return the item to the supplier.

The warranty covers material and manufacturing defects only. The warranty is voided by any unauthorized repairs, misuse, misapplication, tampering of the product, modifications, upgrading or results of any failures to follow the guidelines as set out in the product brochure or by any of the actions specified in this brochure or anywhere in our technical publishing released to the public from time to time which would have voided the warranty.

Warranty does not cover data recovery and physical deterioration due to use, damages resulting from accidents, storage, loss or data loss or damage during repairs or transits.

Notices

The sender will bear all transportation charges for functioning products but which were declared defective.

LIMITATIONS OF WARRANTY:

All product warranties for the product by *UCLEAR™* are limited to those mentioned in the product manual.

WAIVER AND DISCLAIMER:

BITwave, FSC and all their representatives, agents, distributors, suppliers and resellers shall not be liable and will be held harmless from any and all litigation, claims, debts, demands, actions and liability which may arise, directly or indirectly, from operating or using the product for any damages, losses, distress, pain, suffering, discomfort, loss and injuries including bodily harm illness, strains, fractures, partial and/or total paralysis, death or other ailments that could cause serious disability either to any persons, or any parties whether the user or other third parties or their possessions, or to any goods, vehicles, properties, assets among others including your own suffered by any persons, organizations, or any third parties whether physical or otherwise and which may accrue to you in the future, to the fullest extent permitted by law as a result of the use, operation, malfunctioning, misuse, disposal or repairs of the product or any other reasons, conditions or circumstances or attempts to do so whether due negligence, omissions or otherwise of BITwave, FSC or any of their representatives, partners, agents, distributors, suppliers, resellers, designer, manufacturer or any others in its supply and distribution chain or any third parties involved.

All risks from operating or usage of the product rest solely and entirely with the user of this product, the original purchaser or any third parties, who assumes full responsibility for all injuries, losses and/ or damages, whether caused in whole or in part by the negligence, omissions or other conduct of others, including that of BITwave, FSC and all their representatives, partners,

Notices

agents, distributors, suppliers, resellers and all others in its supply and distribution chain either due to the designer's or manufacturer's negligence or omissions or any third parties involved.

Always comply with the local law and traffic regulations. Where use of the product is not permitted or allowed by any laws and regulations including the traffic laws of your country, we warn you not to go against such restrictions. You will bear the full responsibilities of any breaches of law and regulations.

You should not allow the operations or use of the product or any attempts to use it by any persons including yourself to compromise anyone's safety including your own or to cause harm to any vehicles, property, objects, livestock, inventories, assets and the like under any circumstances. You or any users of the product are to take all necessary safety measures and precautions and to remain alert to all surrounding conditions.

You are warned not to operate the product if you are not physically capable of doing so in a safe manner, if you have or will consume any alcohol or any mind-altering substance during its operation so that your alertness is compromised or if you have any medical conditions or needs that may compromise your abilities to do so in a safe manner.

We warn you of the inherent, unforeseeable and unlimited risks and dangers in using the product while in traffic, including injury or illness, strains, fractures, partial and/or total paralysis, death or other ailments that could cause serious disability due to any causes.

This product is only for use by persons eighteen (18) years of age and above who have understood the warnings, risks and the terms of use.

You confirm that you have read this release of liability and fully understand its terms and that you have given up substantial rights by using or attempting to use the product.

Notices

CORRECT DISPOSAL OF THIS PRODUCT:

Do not dispose this product with other household wastes at the end of its working life. There is a separate collection system for used electronic products in accordance with legislation that requires proper treatment, recovery and recycling.

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 this item for environmentally safe recycling. Business users should contact their suppliers and refer to the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

PRODUCT INFORMATION:

BITwave, FSC and all their representatives, agents, distributors, suppliers or resellers shall not be held responsible for any consequences arising from any errors or omissions in the guide or resulting directly or indirectly from the use of the information herein. BITwave and FSC reserve the right to amend or improve the product design or user guide without any restrictions and without any obligation to notify users.

All information here is accurate as of the date of printing.

Please check for the latest version of any the modified or upgraded product on the website www.uclear-digital.com from time to time.

PERSONAL SAFETY:

Do not open the seal of the hardware, tamper, repair or modify any parts. Do not touch the product with metal objects or parts or chemical products. Violation of the above will lead to potential fire hazards and mishaps.

Please contact the technical support or your local supplier if your product malfunctions.

Notices

TECHNICAL SUPPORT:

For additional information please visit our website at
www.uclear-digital.com

For technical support please contact us at:

technical@uclear-digital.com

COPYRIGHTS:

Copyright © 2010 BITwave Pte Ltd & FSC. All rights reserved. No part of this guide may be reproduced in any form or by any process whatsoever without prior written consent from BITwave Pte Ltd and FSC.

LICENCES:

The UCLEAR™ trademark and logo is exclusively owned by BITwave Pte Ltd & FSC. Any use of the mark by any other parties without prior written permission of BITwave Pte Ltd & FSC constitutes an infringement of legal rights.

The Bluetooth™ trademark is owned by Bluetooth SIG and is used under licence by BITwave Pte Ltd & FSC.

FCC COMPLIANCE STATEMENT FCC ID:NMC2010HBC100A

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 operations.

Note: The manufacturer is not responsible for any radio or tv interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

UCLEAR™