bluechiip BRMV-81-001 Multivial Reader and Attachments Owner's Manual

Contents

bluechiip BRMV-81-001 Multivial Reader and Attachments

Multivial Reader and Attachments

Multivial Reader (multiple configurations)

Cat No: BRMV-81-001, BRMC-81-001

ColdTop™

Cat No:BRAC-T1-001

Bluechiip's advanced sample management solution is the only one that provides sample level temperature with ID in cryogenic environments. The Bluechiip enabled Handheld Reader and related attachments are a key component of the Bluechiip system designed to drive productivity and redefine quality to deliver confidence in every sample.

Revision History

Revision	Date	Description of change(s)
1	08/10/2021	First release of the document

Referenced Document
MAN1002 Bluechiip System User Guide

Bluechiip Support
For Technical Support contact us at **support@bluechiip.com** or visit us online at **www.bluechiip.com**

This document provides a basis summary as well as technical specifications, safety and regulatory information relating to the Multivial Reader.


Please refer to MAN1002 Bluechiip System User Guide for more information on how to configure your new reader to the Bluechiip system and for detailed workflow instructions.

Safety

WARNING
Trained Persons Only
Failure to review the owner's manual and to follow the safety warnings can result in serious injury or death.

- Users who operation these products must read and understand the information in this document
- Users must follow all applicable safety guidelines and instructions of their organization and other relevant international standards
- Users must be aware of the relevant safety procedures and safety equipment
- Users must be aware of the relevant safety information and hazards associated with related products (i.e. CryoVials) used in conjunction with these products

Explanation of symbols and words to describe the level of hazard

⚠	**DANGER**	Danger indicates a hazard which if not avoided will result in serious injury or death.
⚠	**WARNING**	Warning indicates a hazard which if not avoided could result in serious injury or death.
⚠	**CAUTION**	Caution indicates a hazard or unsafe action which if not avoided could result in a minor to moderate injury.
⚠**NOTICE**		Hazard or unsafe action which if not avoided could result in damage to the equipment

Product Safety Labels

Found on the Multivial Reader™

⚠**CAUTION**	
⚠	Strong Magnetic Field No metal objects

Figure 1 – Hazard Label on Multivial Reader

General safety considerations

CAUTION	
Extreme temperature / Cold Burns These products are designed to operate in and around extremely cold environments. Liquid nitrogen and dry ice used with these products can cause it to lower its temperature and may result in serious injury. • Users must follow all applicable safety guidelines and instructions of their organization and other relevant international standards • Users must be aware of the relevant safety procedures and safety equipment, including Personal Protective Equipment	
Damaged components Using these products when parts appear damaged may cause personal injury or equipment malfunction. • Do not use if product or parts appear damaged • Prevent damage to the product by following the user guide and placing in a safe location • Do not bend or pull on instrument cables	

Asphyxiation
Dry ice (CO_2) and liquid nitrogen gasses are colorless, odorless and non-flammable however can cause death or serious injury due to asphyxiation if inhaled in large concentrations.

- Always follow industry and organization guidelines for safe handling of liquid nitrogen and dry ice
- Ensure workplaces are well ventilated

Unintended Use
Use of the product in ways other than intended may cause personal injury and equipment malfunction

- Users who operation these products must read and understand the information in this document and follow instructions for use
- Users must follow all applicable safety guidelines and instructions of their organization and other relevant international standards
- Users must be aware of the relevant safety procedures and safety equipment

Radio frequency interference
Radio transmitters, broadcasting equipment and large electrical devices such as motors may interfere with the performance of the product and cause equipment malfunction.

- Only use the product for its intended application

Electric shock
Damaged instruments, removed instrument covers or other damage to the instrument can cause personal injury or death

- Do not use damaged electrical cables or power adapters
- Do not operate in a wet environment
- Do not remove instrument covers

Notice

Do no operate the reader in a wet or damp environment

Do no operate the instrument with wet hands

Ensure the mains plug and switch are easily accessible

Do not move the instruments whilst the mains lead is connected
Ensure there is adequate ventilation around the instruments (at least 10cm in all directions)

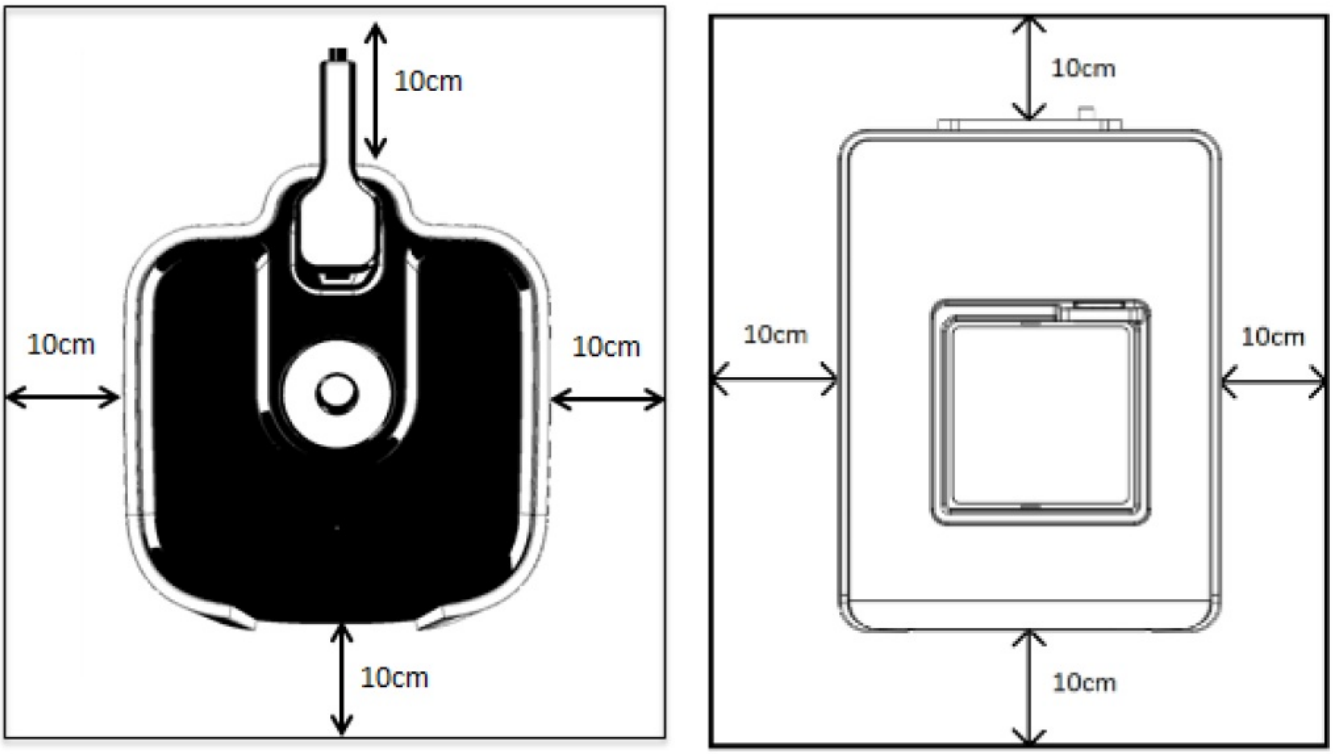


Figure 2 – Open space around Multivial Reader components

Product Overview

The Bluechiip Enabled Multivial Reader scans the ID and temperature of Bluechiip Enabled CryoBoxes and their contents according to the configuration of the reader attachment. The Multivial Reader links to Bluechiip's Stream™ Sample Manager software for sample level traceability and reporting. The Multivial Reader supports a ColdTop (sold separately), an insulated dry-ice box which surrounds the CryoBox. This helps maintain a cold environment, which preserves sample quality.

System Components

Bluechiip Enabled™ Multivial Reader

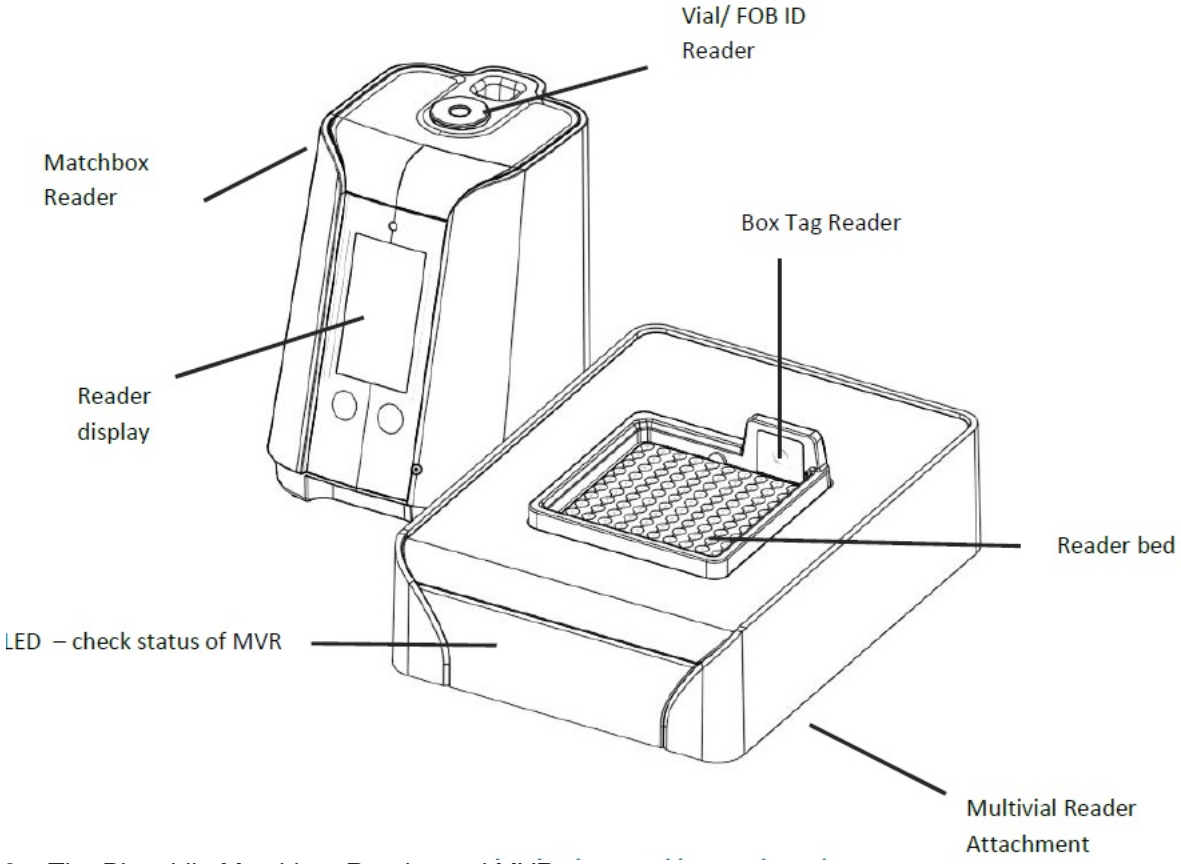


Figure 3 – The Bluechiip Matchbox Reader and MVR

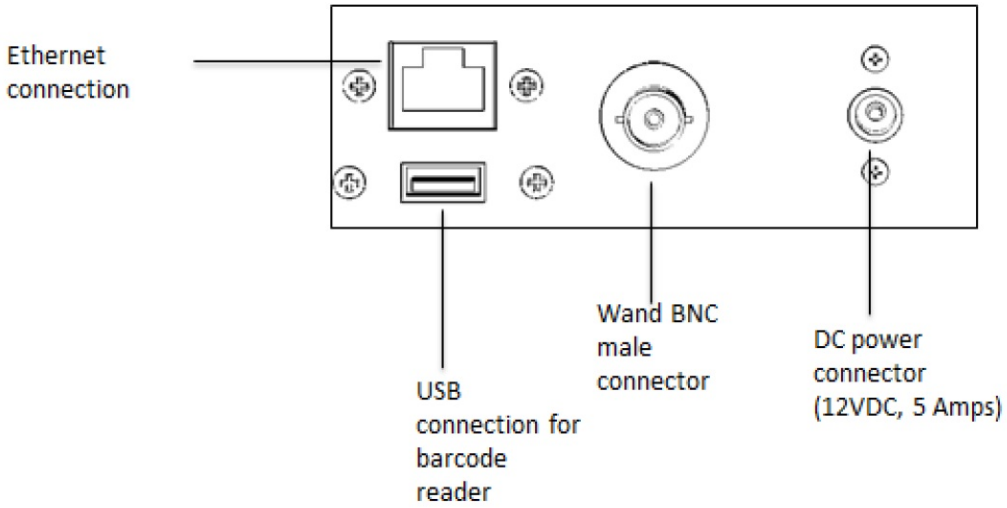


Figure 2: Matchbox Reader Connection panel

Note: All peripheral devices must be connected to the Matchbox Reader with a USB hub.

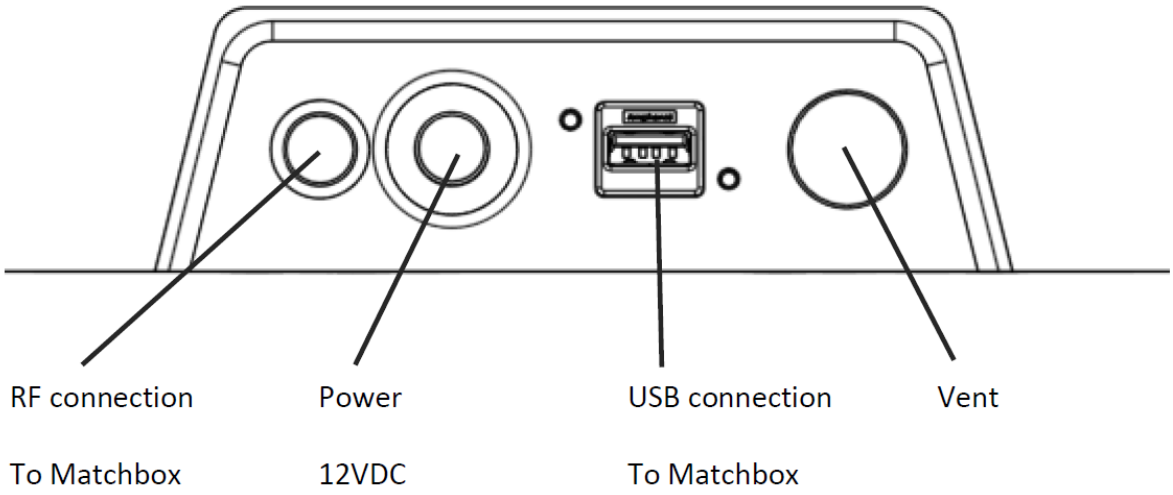


Figure 4 – Multivial Attachment Connection panel

Bluechiip ColdTop™

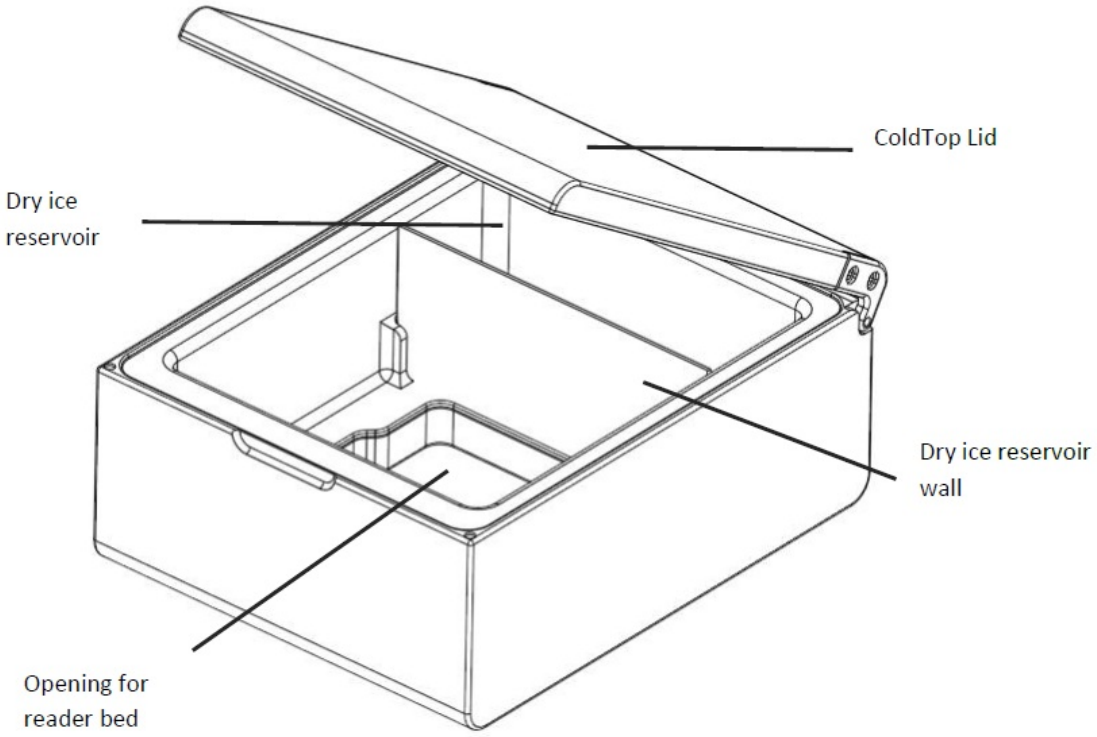


Figure 5 – ColdTop accessory to the Multivial Reader

Specifications

Physical Characteristics	
Dimensions	23cm x 18cm x 35cm
Weight	3kg
Display	VGA Colour
Performance Characteristics	
Memory (RAM/ROM)	512MB/ 512MB

Storage	32GB
User Environment	
Reader operating temperature	0° C to 60° C
Reader storage temperature	-40° C to 60° C
Humidity	5% to 95% non-condensing
Bluechiip® Radio Frequency Identification	
Chip Technology	Microelectromechanical systems (MEMS)
Transmitted frequency	1.5MHz – 4.2MHz
Protocol	Proprietary Bluechiip (FCC Compliance part 15.209)
Antenna	Integrated, inductive coupled
Electrical	
Power adapter ratings	100-240 V AC 50/60 Hz Max Input 1.5A
Power input	12 V DC Max Input 5A
Wireless Data Communications	
WLAN	802.11 b/g
Output Power	+15dBm for both 802.11b and g
Antenna	External
Frequency range	Country dependent: 802.11b – 2.4GHz; 802.11g – 2.4 GHz
Peripherals	
• USB Hub and USB cable • Ethernet cable • IEC Power adapter • Numeric Keypad	**Note:** Only those supplied by and which meet Bluechiip specificati ons should be used.

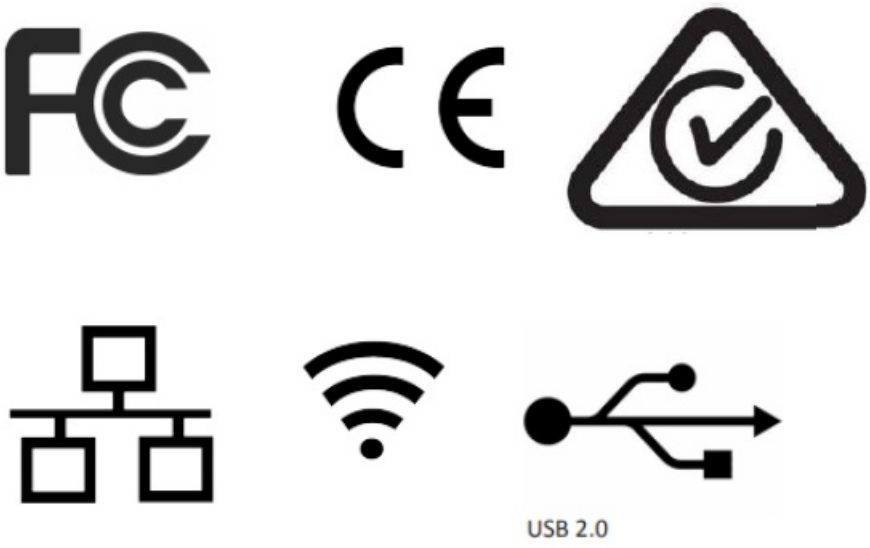
Physical Characteristics	
Dimensions	38cm x 27cm x 13cm
Weight	6kg
Performance Characteristics	
Read time for 100 vials (10×10 configuration)	<30s
User Environment	
Reader operating temperature	0° C to 60° C
Reader storage temperature	-40° C to 60° C
Humidity	5% to 95% non-condensing

Environmental Sealing	IP51 (enclosure)
Bluechiip® Radio Frequency Identification	
Chip Technology	Microelectromechanical systems (MEMS)
Transmitted frequency	1.5MHz – 4.2MHz
Protocol	Proprietary Bluechiip (FCC Compliance part 15.209)
Antenna	Integrated, inductive coupled
Electrical	
Power adapter ratings	100-240 V AC 50/60 Hz Max Input 1.5A
Power input	12 V DC Max Input 5A
Peripherals	
IEC Power Adapter	**Note:** Only those supplied by and which meet Bluechiip specifications should be used.

ColdTop”	
Physical Characteristics	
Dimensions	32cm x 25.5 cm x 14 cm
Weight (without dry ice)	3 kg
Performance Characteristics	
Dry ice fill volume	1.0 litre (1O0Ocm°)
Capacity	1x Bluechiip Enabled CryoBox

Regulatory

1. General approval for use in the United States, Canada, Europe, Australia, New Zealand and Asia
2. This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference. 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.
3. Electrical Safety Certified. Complies with EN/IEC61010-1:2010
4. EMI/RFI Radio Versions US: FCC Part 15, RSS210 5. The Multiview reader system complies with the FCC Radiated emission limits in the frequency range 9 kHz to 30 MHz as detailed in FCC section 15.209 of Subpart C.
5. Refer to Appendix A for relevant FCC Class Notice and EU Declaration of Conformity

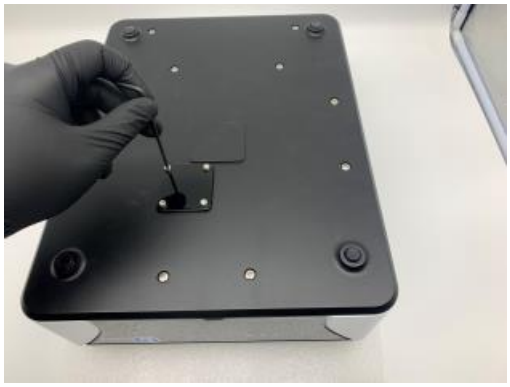
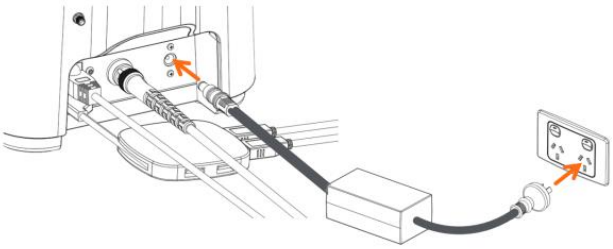


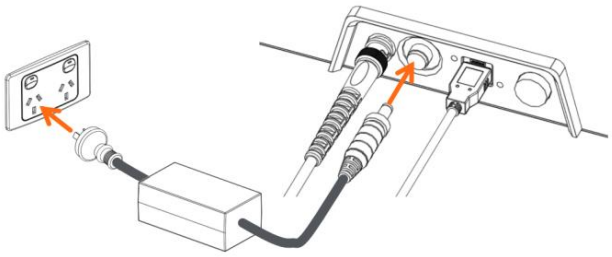
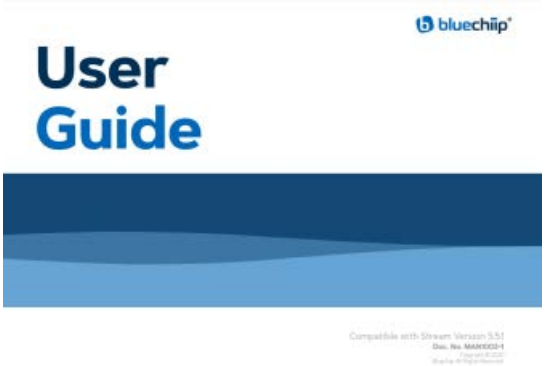
Operation

Using the Multivial Reader

Install and Setup

Step	Instruction	

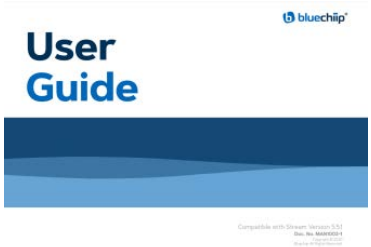
1	Using the padded material shipped with th e Multivial reader attachment, place the re ader onto the table with the underside faci ng up. **IMPORTANT:** Do not put any weight onto t he reader bed frame. This may damage th e reader.	
2	Remove the four screws to remove the Tra nsport Lock. Replace with the cover provid ed and secure using the four screws.	
3	Connect the following to the reader attach ment: • USB cable • RF cable and • Power cable Do not Power ON using the mains plug	
4	Connect the following to the Matchbox rea der: • USB hub • Ethernet cable • USB Cable and Numeric keypad into th e USB hub • RF cable and • Power cable	**Connections to the Matchbox Reader** 

5	Once all the cables are connected, power on the instrument from the mains switch	**Connections to the Reader attachment** 
6	Confirm the instrument is connected to the database. See MAN1002 Bluechiip System User Guide for instructions on how to configure and manage readers	

Log in to the Reader

Step	Instruction	
1	Place the user Fob ID into the vial reader on the Matchbox Reader.	
2	If Two-factor authentication (2FA) is enabled, leave the Fob ID in the vial reader and enter the pin using the numeric keypad.	

Reading Bluechiip Enabled CryoBoxes

Step	Instruction	
1	Place the Bluechiip enabled CryoBox on the reader bed. Ensure the CryoBox sits flat and is oriented with CryoBox Tag facing the CryoBox Tag Reader.	
2	Check that all CryoVials are inserted fully into the CryoBox slots and are in contact with the reader bed. **Note:** CryoVials not in contact with the reader bed may fail to read reliably	
3	Follow the prompts on the Matchbox Reader screen to register and update the contents of the CryoBox. Refer to MAN1002 Bluechiip System User Guide for more detailed workflow instructions.	

Using the ColdTop™

Installing the Bluechiip ColdTop™

Step	Instruction	
1	Make sure the Reader attachment is clean and clear from debris. Remove any Cryoboxes from the reader bed.	
2	Position the ColdTop over the reader bed. Ensure there is enough clearance between the internal walls of the ColdTop and the reader frame as you lower the ColdTop onto the Reader attachment. Magnets in the ColdTop and reader attachment will secure the ColdTop during use.	

Charging the ColdTop™

Step	Instruction	
1	Fill the ColdTop bath with dry ice. **WARNING** Do not fill dry ice higher than reservoir wall. Remove al l dry ice that may have fallen onto the reader bed, before continuing to use the instrument.	
2	Close the lid and allow the environment to cool. **Note:** For optimal performance, it is recommended to keep the lid closed during use and to limit the number of times the lid is opene d and close. Recharge the reservoir with dry ice periodically.	

Maintenance

Do not remove covers. No user serviceable parts.

Troubleshooting

Issue	Troubleshooting steps
Low temperature error	Network coverage can vary from laboratory to laborato ry. In some scenarios, the Handheld reader may lose connection to the network.

Error connecting to storage	Check the Multivial Reader has a working network con nection and is on the same network as the Bluecube. Check that the Bluecube is powered on and that the re ader has been configured correctly. Check that all cabl es are installed correctly and are not damaged. If the problem persists, try removing the reader from th e devices page in Stream and adding It back again.
Reader won’t read CryoBox	Check the CryoBox is oriented correctly. Check for any signs of debris on the reader bed and between the CryoBox Tag and CryoBox Tag Reader and remove if possible. If the problem persists, power off the instrument. After 10s power on and retry.
Reader missing or skipping CryoVial reads	Check that all CryoVials are inserted fully into the Cryo Box slots and are in contact with the reader bed. Chec k for any signs of debris on the reader bed and under t he CryoBox and remove if possible. If the problem persists, power off the instrument. After 10s power on and retry.
Unresponsive screen	If the Multivial Reader screen is unresponsive, the rea der may be frozen. Reboot the Multiview reader. If the behavior is reproducible, note down the steps tak en up to the point in which the reader is unresponsive and contact Bluechiip technical support for further trou bleshooting steps.

If problems persist, contact Bluechiip Technical Support for further troubleshooting.

License Agreement

For product and software licensing agreements, please refer to the bluechiip website, www.bluechiip.com

Further Information

Bluechiip Ltd
1 Dalmore Drive
Scoresby, Victoria, 3179
Australia
info@bluechiip.com
www.bluechiip.com

Appendix A – Regulatory

FCC Class A Notice

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.
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 A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at the user's own expense.

Modifications: Any modifications made to this device that are not approved by Bluechiip Ltd. may void the authority granted to the user by the FCC to operate this equipment.

Contains FCC ID : Z64-WL18SBMOD

EU Declaration of Conformity

EU DECLARATION OF CONFORMITY

bluechiip Tracking Solutions

1. Applicable products :

Name	Model No.	Cat No.	Version
Handheld reader	BLU-668	BRHR-BB-001	Series 1
Multivial reader 10x10	BLU-1200	BRMV-10-001	Series 2
Multivial reader 9x9	BLU-1300, BLU-1400	BRMC-81-001, BRMV-81-001	Series 2
Matchbox reader	BLU-667	Reader sold with BRMV-10-001, BRMV-81-001 & BRMC-81-001	Series 3.5

2. Manufacturer :

Name : Bluechiip Limited
Address : 1 Dalmore Drive, Scoresby, Victoria, Australia
Email : bluechiip.info@bluechiip.com

3. This declaration of conformity is issued under the sole responsibility of the manufacturer.

4. Objects of the declaration, per the name and model numbers listed above.

Handheld Reader

Matchbox Reader

Multivial readers

5. The objects of the declaration described above are in conformity with the following relevant Union harmonisation legislation:

- Directive 2014/30/EU (EMC)
- Directive 2014/35/EU (LVD)
- Directive 2012/19/EU (WEEE)
- Directive 2014/53/EU (RED)
- Directive 2011/65/EU (RoHS)

6. References to the relevant harmonised standards used, or references to the specifications in relation to which conformity is declared:

- ETSI EN 301 489-1 v2.1.1
- ETSI EN 301 489-17 v3.1.1
- EN 300 330 v2.1.0
- EN 61010-1:2010
- ETSI EN 301 489-3 v2.1.1
- EN 61326-1:2013
- EN 62311:2008

7. The products described are covered by this declaration only when operated as intended according to the user instructions, and with accessories and software provided by the manufacturer.

8. Signed for and on behalf of the Manufacturer : Bluechiip Limited

Name : Scott Turner

Function : Engineering Manager

Place and date of issue : Scoresby, Victoria, Australia 8h October 2021

Documents / Resources

	bluechiip BRMV-81-001 Multivial Reader and Attachments [pdf] Owner's Manual BRMV001, 2ATNO-BRMV001, 2ATNOBRMV001, BRMV-81-001 Multivial Reader and Attachments, BRMV-81-001, Multivial Reader and Attachments

References

- Homepage

- Homepage