

## **MICO-RACE**

## Wireless temperature monitor

## **User Manual**

Version: 2.1



## Read me

When you use MICO-RACE wireless temperature monitor, be sure to read this user manual carefully, and be able to fully understand the implications, the correct guidance of operations in accordance with user manual, which will help you make best use of MICO-RACE wireless temperature monitor, and help to solve the various problems at the scene.

- 1. Before the MRR receiver turning on the power supply, be sure that the power supply within the provisions of the instrument;
- 2. Be sure the MRR wiring consistent with the label marked;
- 3. MRS remote sensor must be installed in standard distance(less than 100m outside and less than 20m in room), between sensor and receiver without electromagnetic shielding layer;
- Communication port (RS232/RS485 or Ethernet) is strictly prohibited to impose on high pressure;
- 5. When commissioning on PC, please make sure use series port(RS232/RS485), or use serial port simulation tools for conversion.



Please read this user manual carefully

• Please save this document



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### **1. - Guide for MRR-E and software operation**

### 1.1- MRR-E wiring

Mico-Race data receiver MRR-E standard use RJ45 port(Ethernet connection) and 6~34VDC power supply;

Blue Jay Technology standard provide 12VDC 1A adapter.

	MRR-E
Pictures	

#### Notes:

Ethernet chip will emits some of heat in working, please make sure MRR-E device body in cool and well-ventilated place!

### Package list:

MRR-E
MRR-E device *1
12VDC 1A adapter *1
1.5m 433Mhz Antenna *1



### **1.2-MRR-E** configuration

MRR-E has a built-in Ethernet chip for TCP/IP communication, and there have two version of MRR-E, standard MRR-E do not support DHCP, advanced MRR-ED type with DHCP function, please follow the guide step for initial configuration:

- 1: Close the firewall of your computer system.
- 2: Please disable the excess NIC(Network Interface Card) in your PC or wireless NIC in your laptop, leave only one physical NIC connected to MRR.
- **3**: Connect the MRR-E to the Ethernet Router and power ON; please make sure your PC in same network.
- 4: Use the configuration software TCP232-E45\_V1.4.2(DHCP types) or TCP232-T24\_V5.1.0.1(Standard types) for initial configuration

Ethernet chip had done the initial setting, default parameter as following:

Module IP: 192.168.0.7 Subnet mask: 255.255.255.0 Default Gateway: 192.168.0.1 Destination IP: 192.168.0.2 Destination Port: 16254



### 1.2.1- Part I: Ethernet Port configuration in MRR-E

### Use [TCP232-T24-V5.1.0.1]

🎪 USR-TCP232-T24 V5	5.1.0.1	
File Search 中文 H	Help	
-Parameters-(?) Module work mode	TCP Client	Show Expand functions »
Module IP	192. 168. 0. 7	Operate via COM (?) CFG connect to GND
Subnet mask	255. 255. 255. 0	Select serial port No serial port 💌 (?)
Default Gateway	192. 168. 0. 1	Read via COM
Baud Rate(bps)	9600	Setup via COM
Parity/Data/Stop	NONE - 8 - 1 -	Operate via LAN- (?) Leave CFG pin free
Module port	20108	Search in LAN
Destination IP	192. 168. 0. 2	Set selected item via LAN
Destination Port	16254	Device list in the Net
Logs		192.168.0.7 0032A52F5AE2 5.8
Parameters has upd change Param, click LAN].	ated to left form. After After I Set selected item via	

- Step 1: Run [USR-TCP232-T24 V5.1.0.1.exe] in your PC, press button Search in LAN, software will auto scan your network to find MRR-E device, device shown in right box:
- Step 2: Double click the searched device can read the configuration parameters in left chart:
- Step 3: Please change the following configuration:

Module IP:	Assign the MRR-E device IP to any one you like in your sub-network, do						
	not duplicate existing equipment, otherwise there will be a network error.						
Default Catoway	Change Gateway IP that matched with your network setting.						
Delault Galeway.	Notes: if you purchase DHCP type please see Part II						
Destination IP	Change the IP and TCP part that direction to your PC run [Microtomn]						
Destination port							

**Notes:** Please do not change other parameter in Ethernet Port, or MRR-E may unable to work.

Step4: Press button Set selected item via LAN to end the Set



### **1.2.2-** Part II: Ethernet Port configuration in MRR-ED

### Use [TCP232-E45\_V1.4.2]

SR-TCP232-E45	V1.4.2.0	0.00	# 34 14 P	Auth	( Audio	C	and of			
Device(D) 中文(L)	About(A)									
Search List			<u>[2]</u>	Port	) Port1	Port2				
Device IP De	vice Name	M	Version							
192.168.1.111 US	R-TCP232-E2	D8 B0 4C 00	D C2 3A 3007							
					Baudrate:		9600	•		
					Parity/Data/	'Stop:	NONE	▼ 8 ▼ 1 ▼		
					FlowControl:			None		
					Local Port:		23	[4]		
					Remote Port:		16254			
	Q	Search Device			Work Mode:		TCP Clier	nt 🔻		
📄 Open Devi	ce 📃	Read Config	Read Temporary		Server connect count: 8 (1~8)			] (1~8)		
			TCP Server style: Transparent transmissio			ent transmissio 👻 🔽				
Signature Device Res	set	Save Config	Default Config	Default Config ModbusTCP: None			· · · · · · · · · · · · · · · · · · ·			
Base Save					RemotelP:		192.168.1	1.16		
UPNP Port:	6432	Device Name:	USR-TCP232-E2	[3]	Telnet Timeo	out:	0	s (<256, 0 for no uses)		
HTTP Port:	80	User MAC:	D8 B0 4C 00 C2 34		PackTime:		0	ms (<256, 0 for no uses)		
Device ID:	1	IP Type:	DHCP/Auto IP 🔻		PackLen:		0	byte (<1024, 0 for no uses)		
Device ID Type:	0	Static IP:	DHCP/Auto IP Static IP					,		
User Name:	admin	Gateway:	192.168.1.1							
Password:	admin	SubnetMask:	255.255.255.0							
							🧹 Save C	COMO		
	<b>~</b>	Base Save								
Data has been read.			On-line Device NU	JM:1	Sear	rch Port:	1901			

Step1- Press Search Device button for auto find the MRR device

- Step2- Choose the MRR device in lists, software will update the device configuration info
- Step3- If MRR-E connects to router, you can choose DHCP mode, please make sure your router can assign IP; if connected directly to host PC, please chose Static IP mode, and configuration the MRR Ethernet gateway & IP address related your host PC setting.
- **Note:** Only Port0 is available, and do not change other parameter in Ethernet Port, or MRR-E may unable to work.

Please do not change the Baud rate(9600) or MRR will not work



### 1.3. - How to use Microtemp Desktop

Blue Jay Technology provide standard local software "<u>Microtemp.exe</u>" for MRS sensor setting and test operation, it provide MRS parameter configuration and basic monitor & record on your Desktop PC, please follow the guide to start.

**Notes:** Software only have Chinese character, if the software displayed shows garbled code, please install the windows Chinese Language Pack.

🔊 EPPlus.dll
🎯 EPPlus.xml
🔊 Microtemp.exe
፳ Microtemp.exe.config
Microtemp.pdb
፳ Microtemp.UI.vshost.exe.config
Microtemp.vshost.exe
፳ Microtemp.vshost.exe.config
🔊 Microtemper.Command.dll
Microtemper.Command.pdb
🔊 Microtemper.Data.Engine.dll
Microtemper.Data.Engine.pdb
🔊 Microtemper.Device.dll
Microtemper.Device.pdb
🔊 Microtemper.Logger.dll
🔊 Microtemper.Logger.pdb
🔊 Microtemper.UI.vshost.exe.config
Microtemper.UI.vshost.exe.manifest
👩 props.mtdsp

### Run "Microtemp.exe" to show temperature data from MRS in your PC

#### Step 1: Set communication parameter

Click **COMM Config**, software will automatic detect LAN IP of your PC and show in the dialog window, please make sure the IP same as preset "**Destination IP**" in <u>Chart 1.2.1</u> or <u>Chart 1.2.2</u>, then input the preset "**Destination port**" (in example we use default is 16254), after that click **OK**:



	Automatic			User I	Manual
COMM Config Add MRS	Cancel MRS Open	Save Export	Run Stop	Config View	
	🖳 COMM Config		Nam	e	Value
	IP Address 192.168.0.2				
	16254				
		01	K		
Curve History Raw_data					
SN MRS	_ID MRS_type	Temperature			
•		۱.	Read		Set

Step 2: Add MRS sensor

Click **Add MRS**, you can add MRS sensor in record list, please make sure your MRS types, and input the ID on the MRS label, then click **OK**; repeat this step until all the MRS sensor added:

COMM Config	Add MRS	Cancel MRS	Open	Save	Export	Run	Stop	Config View	
			_	History series series	r <b>Data</b> Femper Humidity		Nam	é	Va
		Add	MRS				<b>-</b> X-		
		MRS	ID 0075B6	Ser	nsor ID i	numb	er		
Curve History	Raw_data		Type ST ST WST	Ter	nperatu	re Ser	sor •		
			Temper	ature a	nd	0)	K		
			humidit	y senso	or				
•					F		Read	1	



	SN	MRS_ID	MRS_type	Temperature
	0	000075B6	Т	27. 3C
	1	00230005	Т	1
•	2	0023001C	Т	

Step 3: Start operation

Click **RUN** in toolbar, then switch to "**Raw\_data**" page, you should see a upload command, it contain MRR ID inside, mean connection success. Otherwise, the connection is unsuccessful, please check the connection of MRR-E or configuration in <u>Chart 1.2.1</u> or <u>Chart 1.2.2</u>:

COMM	Config	Add MRS	Cancel MRS	Open	Save	Export	Run	Stop	Config View
					His	tory Data			Name
					- se	riesTemper		Þ	Update Interve
					se	riesHumidit	<pre>/</pre>		Alarm Interval
									Alarm Times
									Sampling Inter
									Volt Warning 1
									Volt
									Temp Upper Lin
									Temp Lower Lin
Curve	History	Raw_data					_		
	Update_t	ime	Raw_Data						
Þ	2016/6/29	12:40:23	aa 75 09 83	3 16 00 0	0 c7 48	00 00			
								Rea	ıd

### Step 4: basic configuration

In "**Curve**" page, click each MRS line, you can see record curve drawn by latest 10 record point. also you can see the "**Basic Config**" table in the right part of screen. detail of each parameter please refer to the "**Mico Race Data Format\_1.6** "



COMM	Config Add	MRS Cancel N	IRS Open	Save Export	Run	Stop Config View	
120	T		I	History Data		Name	Value
86	;			seriesTemper seriesHumidity		Update Interval	40 Time temperature recording interval
52				-		Alarm Interval Alarm Times	1 t=40*1*3=120s
18	27°C 2	7°C 26.7°C 2 26.7°C 26.7°C	26.7°C			Sampling Interval	3
	20.7 C	20.7 0 20.7 0	-			Volt Warning Thr	. 3 Voltage value car
-16						Volt	3.58 not be changed
-50	L				Þ	Temp Upper Limit	60
	11:34 11	11:40 11:44	11:46			Temp Lower Limit	6486.8
Curve	History Raw_	data					
	SN	MRS_ID	MRS_type	Temperature			
Þ	0	000075Ъ6	т	26. 7C			
	1	00230005	Т	27.9C			
	2	0023001 c	Т	30.2C			
•	m			Þ	R	ead	Set

in example show setting of MRS (000075B6):

Choose any parameter you want to know in 000075B6, press **Read**, you can see the data in "value" column; Double-click column can input the setting value, then press **Set**.

In configuration operation, after set one MRS, you can switch to the "**Raw\_Data**" screen to see detail data flow, that can easy help test engineer understand MICO-RACE protocol.

COMM Conf	ig Add MRS	Cancel MRS Ope	en Save Exp	ort Run	Stop	Config View	
			History [	ata		Name	Value
			- seriesTe	mper	Þ	Update Interval	40
			seriesHu	midity		Alarm Interval	
						Alarm Times	
						Sampling Interval	
						Volt Warning Thr	
						Volt	
						Temp Upper Limit	
						Temp Lower Limit	
Curve His	tory Raw_data						
Upd	ite_time	Raw_Data					
2016	/6/29 13:52:17	aa 75 0d 87 00 (	0 75 66 17 28 00	1f			
2016	/6/29 13:52:17	aa 75 05 al 00 (	0 00				
2016	/6/29 13:52:14	55 7a 09 86 00 0	0 75 66 17 00 00				
2016	/6/29 13:52:06	aa 75 09 83 16 (	0 00 c7 48 00 00				
					Re	ad	Set





Step 5: Advanced configuration

In [Config View] in toolbar, you can change the operation screen in "MRS Advanced Config" or "MRR Advanced Config" page:

Notes: we do not suggest client change the advance configuration, if operation step wrong, may cause MICO-RACE disable erro; please contact Blue Jay Tech Team for more support --tech@cqbluejay.com--

If you understand the operation step and accept this risk, input password "00000000" for entry the advanced configuration page:

COMM Config Add MRS Cance	MRS Open Save Export Run Stop	Config View	
120	History Data Name		Value
		e Interval	40
86	seriesHumidity Alarm	Interval	1
52	àlarg	Times	3
27°C 26.7°C 26.7°C 26.7°C	Password Protection	ing Interval	3
18 <u>- 26.7°C 26.7°C 26.7°C 26.7°C 26.</u>		Warning Thr	3
-16	Notes: Change advanced configuration may cause the MICO-RACE system error,		3.58
	please do the operation under Blue Jay Tech Team guide!	Upper Limit	60
-50 - 11:40 11:44 11:48 11	Password	Lower Limit	6486.8
Curve History Raw_data	Password: 00000000		
SN MRS_ID			
▶ 0 000075b6	Confirm		
1 00230005			
2 0023001 c	T 30.5C		
< III	* Read	]	Set

detail meaning of each parameter please refer to the " Mico Race Data Format\_1.6 "

**Notes**: in Forest Network (FN), if you want add other MRS in existed MRR group, just configuration "Update ID" same as this existed MRR, you can do this work from any MRR device.

### Other function:

1. <u>Save MRS list</u>, click [Save] on tool bar, you can save the MRS list in "Microtemp". Next time you can press [Open] to load the MRS list and continue work.



	reennology of Elect	near Automatic						User Ma	nual	
COMM Conf	ig Add MRS	Cancel MRS	Open Save	Export	Run	Stop	Config View			
120 -										
86 -										

2. <u>Cancel MRS in your list</u>, select the MRS you want to delete. (need switch to "Curve" page), Click <u>Cancel MRS</u> on the toolbar.

🖳 Microte	mper De	sktop								
COMM	Config	Add MRS	Cancel MRS	Open	Save	Export	Run	Stop	Config View	
120 -			L Lha sasan	-	History	Data		Na	ме	Value
			click"cano	a step Mind Mind	- seriesT	emper		Pos	sitive Upload	P2P
86 -				<u>ei m</u> KJ	- seriesH	lumidity		Upo	late ID	00000000
52 -								¥ oz	'k Mode	Hopping
	26.7°C 26	6.7°C 26.7°C	26.7°C 27°C	_				Cha	annel	0
18 -	<u>26.7°</u> €	<del>: 26.7°C 26.7</del>	<del>7°C 26.7°C 2</del>	<del>?°C</del> −				RF	Frequency	4340
-16 -								RF	Baud	20kbs
50								RF	Power	20 dbm
-50 -	12:09	12:13 12:	19 12:23 h	2 first stor	, click y	ou wan		Aot	ıt Power	ИО
			/to	delete the	e senso	r		IO	Expand	Protocol mode
Curve	History	Kaw_data				-		Si	mal Detect	84
	SN	MRS_	_1D	MRS_type	T	emperature		Noo	le ID	000075Ъ6
	)	0000'	7566	Т	27	С		PII	)	6666
1	1	00230	0005	Т	27	. 6C		UII	)	2627
2	2	00230	001 c	Т	30	. 50		Sot	Etware Ver	02640139
								Нал	dware Ver	000b02cd
•	11					+		Read		

3. <u>MRS record value</u>, Software will record the latest 100 data in "History" page for each listed MRS, you can press [**Export**] on toolbar to save the record data in Excel file.



🖳 Microtemper Deskt	ор										
COMM Config Ad	d MRS C	ancel MRS	Open	Save	Export	Rur	n St	top	Config View		
120			-	History	Data			Name		Value	
86				series l series	emper lumidity			Alar	n Interval	1	
52-28	8°C 29 1°C 2	9.1°C 29.4°C	_					Aları	n Times	3	
19 20.	0 0 20.1 0 2							Samp:	ling Interval	3	
10 28.5 C			-					Volt	Warning Thr.	. 3	
-16			_					Volt		3. 58	
								Temp	Upper Limit	60	
50											
-50	17 9:19	9:21 9:23	-				Þ	Temp	Lower Limit		
-50	17 9:19	9:21 9:23	-				Þ	Temp	Lower Limit		
-50 9:15 9: Curve History Ray	17 9:19 9	9:21 9:23					Þ	Temp	Lower Limit		
-50 9:15 9: Curve History Ray Update_time	17 9:19 «_data	9:21 9:23 Temperature	2 H	umidity	A		Þ	Temp	Lower Limit		
-50 9:15 9 Curve History Ra Update_time 2016/6/30 9:	17 9:19 *_data 23:32	9:21 9:23 Temperature 29.40		umidity			Þ	Temp	Lower Limit		
-50 9:15 9 Curve History Rav Update_time 2016/6/30 9:: 2016/6/30 9::	17 9:19 *_data 23:32 21:34	9:21 9:23 Temperature 29.40 29.10		umidity			Þ	Temp	Lower Limit		
-50 9:15 9 Curve History Rat Update_time 2016/6/30 9: 2016/6/30 9: 2016/6/30 9:	17 9:19 : *_data 23:32 21:34 19:37	9:21 9:23 Temperature 29.40 29.10 29.10		umidity			Þ	Temp	Lower Limit		
-50 9:15 9 Curve History Ray Update_time 2016/6/30 9: 2016/6/30 9: 2016/6/30 9: 2016/6/30 9:	17 9:19 *_data 23:32 21:34 19:37 17:40	D:21         D:23           Temperature         29.40           29.10         29.10           28.80         29.40		umidity			Þ	Temp	Lower Limit		
-50 9:15 9 Curve History Rev Update_time 2016/6/30 9: 2016/6/30 9: 2016/6/30 9:	17 9:19 *_data 23:32 21:34 19:37 17:40	9:21 9:23 Temperature 29.40 29.10 29.10 28.80	*	umidity			•	Temp	Lower Limit	10	
-50 9:15 9 Curve History Re Update_time 2016/6/30 9: 2016/6/30 9: 2016/6/30 9: 2016/6/30 9:	17 9:19 *_data 23:32 21:34 19:37 17:40 1	9:21 9:23 Temperature 29.40 29.10 28.80	2 <del>X</del>	umidity			Re	Temp	Lower Limit	10	Set
-50 9:15 9 Vurve History Rav Update_time 2016/6/30 9: 2016/6/30 9: 2016/6/30 9: 2016/6/30 9:	17 9:19 1 *_data 23:32 21:34 19:37 17:40 1	9:21 9:23 Temperature 29.4C 29.1C 29.1C 28.8C	•	unidity			Re	Temp	Lower Limit	10	Set
-50 9:15 9 Vpdate_time 2016/6/30 9: 2016/6/30 9: 2016/6/30 9: 2016/6/30 9:	17 9:19 1 *_data 23:32 21:34 19:37 17:40	9:21 9:23 Temperatura 29.4C 29.1C 29.1C 28.8C		umidity			Re	Temp	Lower Limit	10	Set

		- (° - );	7				MRS.xlsx - N	licrosoft Excel							2
<u> </u>	デディティング	插入	页面布局	公式	数据	审阅	视图							0 - 🗖	
	自 Access 自网站 自文本	自其他来源	现有连接	全部刷新	<ul> <li>▶ 连接</li> <li>☆ 属性</li> <li>※ 编辑链</li> </ul>	£↓ £↓ ∄	AZA İ序 筛选	☆ 清除 ● 重新应用 ● 高级		■ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	数据有效性 合并计算 假设分析 、	· * * * * * * * * * * * * * * * * * * *	です。 取消组合		
	获	取外部数据		j	连接		排序和筛	选		数据工	具		分级显示	t I	9
	A1	-	• (•	<i>f</i> ∗ Upda	te_time										
		-	-		-	-	-							NI	
	A	В	C	D	E	F	G	н		J	K	L	IM	IN	
1	A Update_ti	B Temperat	C Humidity	Battery	E Signal	⊦ Alarm_t	rig	н		1	K	L	M	IN	
1 2	A Update_ti 2016/6/30	B Temperat 29.4C	C Humidity	Battery 3.58	E Signal 75	F Alarm_t	G rig	Н	I	J	K	L	M	N	
1 2 3	A Update_ti 2016/6/30 2016/6/30	B Temperat 29.4C 29.4C	C Humidity	Battery 3.58 3.58	E Signal 75 68	F Alarm_t	G rig	Н	1	J	K	L	M		
1 2 3 4	A Update_ti 2016/6/30 2016/6/30 2016/6/30	B Temperat 29.4C 29.4C 29.1C	C Humidity	Battery 3.58 3.58 3.58	Signal 75 68 83	F Alarm_t	G				K	L	M		
1 2 3 4 5	A 2016/6/30 2016/6/30 2016/6/30 2016/6/30	B Temperat 29.4C 29.4C 29.1C 29.1C	C Humidity	Battery 3.58 3.58 3.58 3.58 3.58	E Signal 75 68 83 81	F Alarm_t	rig				K	L			
1 2 3 4 5 6	A Update_ti 2016/6/30 2016/6/30 2016/6/30 2016/6/30	B Temperat 29.4C 29.4C 29.1C 29.1C 28.8C	C Humidity	Battery 3.58 3.58 3.58 3.58 3.58 3.58 3.58	E Signal 75 68 83 81 104	F Alarm_t	rig				K	L	M		
1 2 3 4 5 6 7	A 2016/6/30 2016/6/30 2016/6/30 2016/6/30 2016/6/30 2016/6/30	B Temperat 29.4C 29.4C 29.1C 29.1C 28.8C 28.5C	<u>C</u> Humidity	Battery 3.58 3.58 3.58 3.58 3.58 3.58 3.58 3.58	E Signal 75 68 83 81 104 110	F Alarm_t	G				K	L	M		
1 2 3 4 5 6 7 8	A Update_ti 2016/6/30 2016/6/30 2016/6/30 2016/6/30 2016/6/30	B Temperat 29.4C 29.1C 29.1C 29.1C 28.8C 28.5C	C Humidity	Battery 3.58 3.58 3.58 3.58 3.58 3.58 3.58 3.58	E Signal 75 68 83 81 104 110	F Alarm_t	G				K	L			

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**Notes:** this guide is only for standard MRS sensor. If purchase special types, some of the function parameter read/write is disable, please refer to the "Mico Race Data Format Introduction " for more details





### 2. - Guide for MRR-R

DB9P adapter (for MRR-R-485).

Blue Jay provide MRR-R for special client for connect third party router(RS232 or RS485 port), only communication port is different with MRR-E

### 2.1- MRR-R wiring

Mico-Race data receiver MRR-R standard use DB9 PIN male port(RS232/RS485) and used 6~34VDC power supply;

Blue Jay Technology standard provide 12VDC 1A adapter (85~265VAC input), and

	MRR-R-232	MRR-R-485
Terminal No.	2-RX / 3-TX	6- <b>A</b> / 1- <b>B</b>
Baud ratio	9600	9600
Pictures		

### Notes:

Please refer to the wiring drawing on product label!

Please use the cross-connect wire kit in package for MRR-R-232 communicate with PC, If you use the USB adapter cable, please also connect the cross-connect wire between adapter and MRR-R



Package list:



MRR-R-232	MRR-R-485
MRR-R-232 device *1	MRR-R-232 device *1
RS232 cross-connect female cable *1	RS485 connect kit *1
12VDC 1A adapter *1	12VDC 1A adapter *1
1.5m 433Mhz Antenna *1	1.5m 433Mhz Antenna *1

### 2.2- MRR-R configuration

MRR-R do not need special configuration, Blue Jay Tech Team had preset the device working parameter, user can use any <u>series port scan software</u> to check MRR-R connection is success.

**Notes:** please make sure your series port scan software use 9600 baud ratio and send the following code to MRR

<u>55 7A 07 82 00 01 04 00 00</u>

if you can received the following code mean MRR-R connect well and prepared working

AA 75 0C 83 00 00 00 01 3C 00 04 01 00 00



### 3.- Guide for MRR-M

MRR is special designed for MICO-RACE system, with standard MRR-R and one GPRS router inside. GPRS router support 850/900/1800/1900 frequency, GSM network, default use 900/1800 frequency.

### 3.1- Front Panel Description



### Notes:

- 1. Antenna have different sharp, depends one client requirement, all use standard SMA port, if antenna damaged or dissatisfied with signal performance, users can change higher gain antenna with same specification and port.
- 2. Aux power support standard 12/24V AC-DC adapter or battery, if power less than 6V MRR-M may work abnormal.
- 3. Pease make sure your SMS card support GPRS network (2G), if your local mobile network service providers other frequency, please contact Blue Jay Tech team
- 4. User can use any types of RS232 adapter for configuration, or use SMS command to set basic parameter, more details please refer to <u>*Chart 3.3*</u>



### 3.2- System configuration- GPRS router

MRR-M communication port is RS232, you can use any type of RS232 adapter to connect host PC, every MRR-M default setting is send data to Blue Jay Cloud Server www.microtemper.com, if you want send data to other IP, please follow this guide:

#### Step 1: Set PID switch for GSM configuration



Change the PID switch 5.6 ON, as photo shown; and connect RS232 port to your host PC.

Step 2: Open [DTU-RTU tool.exe] (You can choose 64/32bit only for PC Windows OS).

Software provides English display, press button as indicate change to English.

- 1. Change Comport to right port no. (In demo is COM5).
- 2. Choose Baud Rate to "9600".
- 3. Leave other buttons do not change or set, then press **Open COM** button.
- 4. Make sure SIM card in holder and powered on MRR-M.

The left screen window show welcome info as follow, mean GPRS router is connect to PC and prepare configuration.



Feelinology of Electrical Automatic	Use	er Manual
🙀 DTU & RTU Tool	Name for other WHICH	Hall, MRI Lakes Mile
English Firmware Download File Path File Select Start Download	COM Set ComPort COM3 V Data Bits 8 V Parity NONE V	Baud Rate 9600 V Stop Bits 1 V Close COM
Transmit	Public Function	Data->AT
RX Content	SW Version	Recover
Receive	Index 0	Test
InitType 0 AppType Q26_RTU	Index 0	DEBUG Info
Sw Ver V1.12_DTU_FUNCTION Extend Device 255 SimCard Num 0	Time 0	Set Reset Time Get
	Index 0	COM2 Device Set
	Index 0 🔹	SIMCARD Set

**Notes:** MRR-M default set to automatic connect remote server, please do all the configuration in 30sec, that parameter setting will invalid after screen window show "**CONNECTED**". in this situation only needs to repower the MRR-M.



### Step 3: Set APN (Access Point Name) info

Please contact your local mobile network service providers for confirm the APN account and password, in demo use china mobile.

After enter right APN info, press button **Set** to confirm setting, user can press button **Get** to check presetting in left screen window.



			1125	User Manual
+GPRSBR:	0: 1: 2: 3:	CMNET 1	APN APN UserName PassWord	Set Get
AT+GPRSSETA?			Server Server Channel A 🔹	
+gprsseta: ok	0: 1: 2:	60, 191, 205, 75 20003 1	<ul> <li>Server URL</li> <li>Server IP</li> <li>Server Port</li> </ul>	Set Get

### Step 4: Set destination IP to remote server

MRR-M support URL or IP setting, send data to max 6 different remote IP (named from A to F). In demo use BLUE JAY cloud server(User can get a 6 month free account for testing, you can find your own Server Port and account info in products package, or contact your sale manager. more details please refer Chart 3.

After enter right Server info, press button **Set** to confirm setting, user can press button **Get** to check presetting in left screen window.

		and the second sec	APN	
+GPRSBR:	0:	CMNET	APN	
	2:		UserName	Set
OK			PassWord	
			Server	
AT+GPRSSETA?			Server Channel 🗛 👻	
+GPRSSETA:	0: 1:	60. 191. 205. 75 20003	Server URL	Set Get
OK	2:		Server IP	
			Server Port	

**Notes:** Please do not change other parameter in GPRS router, if you want advanced function, please contact Blue Jay Tech Team: <u>tech@cqbluejay.com</u>

After set the GPRS configuration, powered off the MRR-M, then disconnect RS232 adapter and recovery PID switch 1.4 ON, as following photo, repower the MRR-M it will send data to the destination IP.



Tel:+0086-023-67628702 www.cqbluejay.com Add: 1802,Building 2,No.88,Jianxin East Road,Chongqing,400020,China



### 3.3.- Remote config & check MRR-M

MRR-M support remote configuration via SMS, just need send txt message to cell phone number inside MRR-M.

Function	SMS command	Feedback data
		[*GPRS IM*+8 digital]
		Each digital use (0/1) meaning as
		follow:
Check		1. SMS card normal
registered	(07 XXX=1)	2. Had registered in GSM network
situation of		3. Had obtained IP address
DTU		4. Had connect to GSM server
		5. Had received data from server
		6. Heartbeat opened
		7. Reversed
		8. GPRS protocol stack open
		[AT+CSQ +CSQ:25,0]
DTU Signal		
strength guery	AT+CSQ	Signal strength 25, the value max
		is 31, high value mean signal is
		better
Query DTU		IP_A:60.191.205.75,20006
destination IP	(20,XXX=1)	
and TCP port		Only IP_A is valid
Config DTU		
destination IP	(21,XXX=IP,PORT)	
and TCP port		
		HB_time: Heartbeat interval, unit
Set Heartbeat	(04,XXX=HB_time,HB_text)	In sec
		HB_text: text in Heartbeat, do not
		over 100 characters
Set APN		
Username &	(UU,XXX=apn,username,password)	
password		
Restart DTU	(06,XXX=1)	



If need send command from TCP server, command format:

\*[ID]\*[SMS command]\*

[SMS command] is same in above chart

[ID] is DTU ID, default is 0000000



### 4. - Access Blue Jay cloud software

Blue Jay Technology also provide cloud record software in English version for test use. please configure MRR-E or MRR-M send data to following IP and TCP port:

Destination IP: 106.75.224.56

Destination Port: 30XXX (you can find in the customer mail in package or contact our sales team)

please refer to <u>chart 1.2.1(2)</u> and <u>chart 3.2</u> for configuration MRR direct to Blue Jay cloud server

Then open your Web Browser

Connect this site: http://106.75.224.56



User Name and Password you can find in customer mail in package

### **Default test account:**

#### username: test@cqbluejay.com

#### password: 000000

Tel:+0086-023-67628702 www.cqbluejay.com Add: 1802,Building 2,No.88,Jianxin East Road,Chongqing,400020,China



### 5.- Trouble shooting

### Q: Why can't I connect MRR-E or even cannot search MRR-E?

**A:** please confirm you MRR-E and you host PC in same sub-section, and please allow the TCP port in & out your host PC <u>1500, 2317, 16254, 27011</u>. if possible please close your firewall when do configuration.

# Q: Why the MRS can automatically upload data, but I cannot read data from host actively ?

**A:** the MRS use IPEX connector to antenna, due to vibration the connector may lose, please open the MRS case to re-tightening the IPEX connector.

### Q: I cannot connect to Blue Jay cloud server?

**A:** Blue Jay provide free cloud server for every client test, our engineers will be debug and update the cloud server program from time to time, please be patient and server can reopen in 24 hours. Any of your comment would be much appreciated.