

Introduction

BLUEMORE500 is a professional, slim, wireless module ready for integration in brand new or existing electronic products.

Based on CSR chipset BC03MM it's fully compatible for Serial Port profiles and Audio profiles.

EikonAT firmware (default Serial Port profile) you can set Bluetooth parameters by the PC setup utility or through the command line interface.

Module includes a PCB inverted "F" antenna or you can use the external SMA connector (option)

Dimensions: 27.5 x 27.3 x 5.5 mm.
Connector: 22 pins, pitch 2.54mm, Male pinstrip
Power supply: 3.3V



Applications

BLUEMORE500 allows you to cut the cables using wireless communication with PC, Pda, Mobile phone, etc...

BLUEMORE500 with EikonAT firmware can be used up for :

- Pure serial cable replacement (2 BLUEMORE500 wireless connected to each other)
- Mixed serial cable replacement (1 BLUEMORE500 connected to a Bluetooth PC or a PDA)

It's suitable for integration in microprocessor systems without operative system since it does not need drivers to work. It can be used as simple cable replacement for serial communications.

BLUEMORE500 with our Audio firmwares can be also used for high quality wireless Audio (Stereo).

EikonPTT firmware allows you to make a full duplex stereo connection with several I/O transfer (PTT,Squelch,Vsend...)

Bluetooth Audio standard profiles are available

Benefits

- Easy to setup
- Easy to manage and use
- Low power
- Zero Time for development
- Plug and Play

Applications

- Wireless RS232
- Wireless Audio with PTT
- Wireless Stereo Headset
- Wireless Stereo A2DP
- Wireless Handsfree

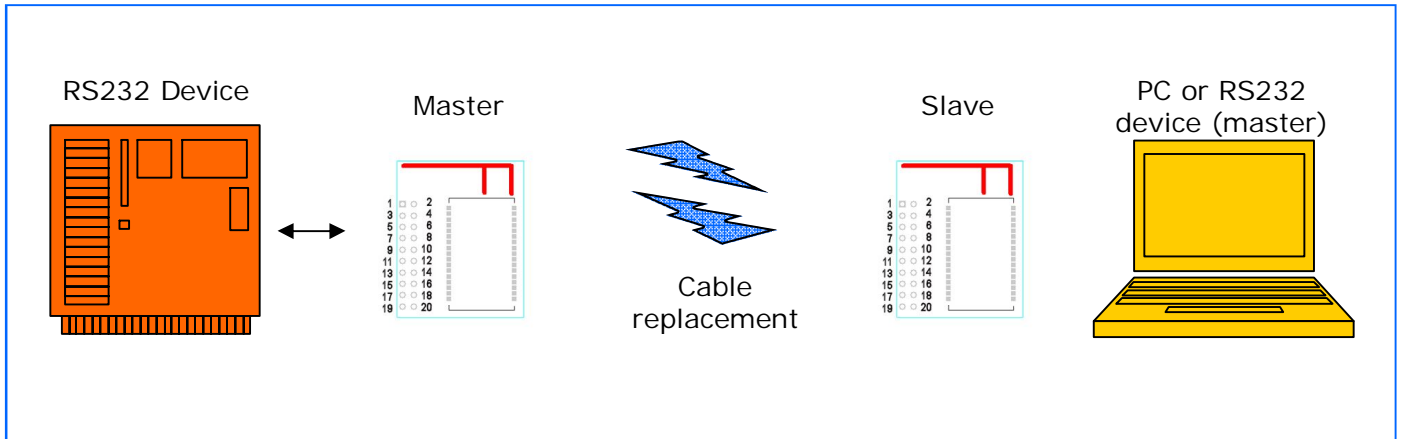
Features

- Bluetooth v1.2 compliant Class1 100 meters range
- CSR Bluecore BC03MM
- 3.3V power supply
- UART Serial port 3.3V
- 1.200 baud to 921kbaud
- N° 10 I/O signals
- Standard or custom Firmware
- OEM version on request

Applications (serial port profile eikonAT firmware)

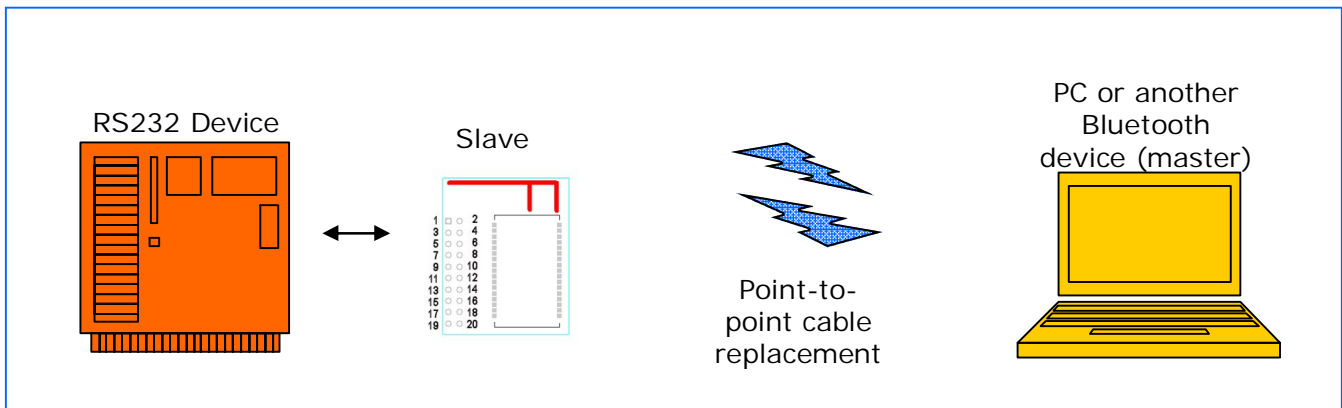
Pure serial cable replacement solution

Replace your serial cable with a wireless connection



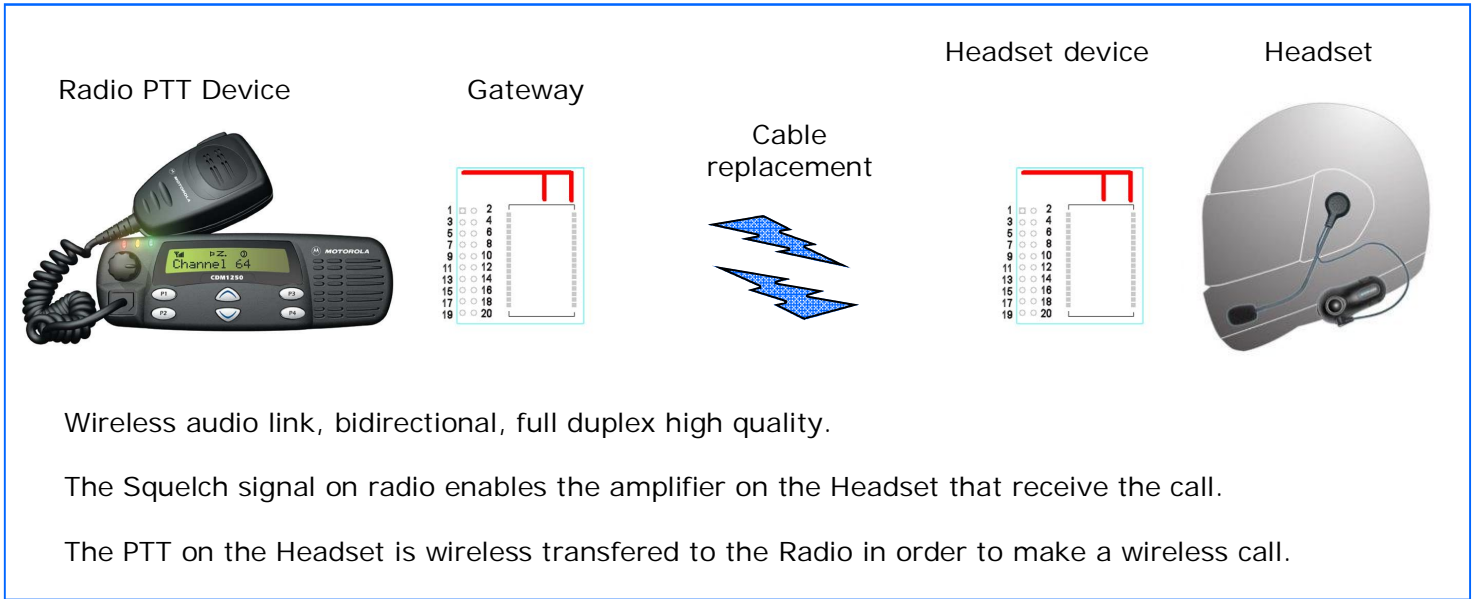
Mixed serial cable replacement

Wireless connection between a Bluetooth and RS232 device.



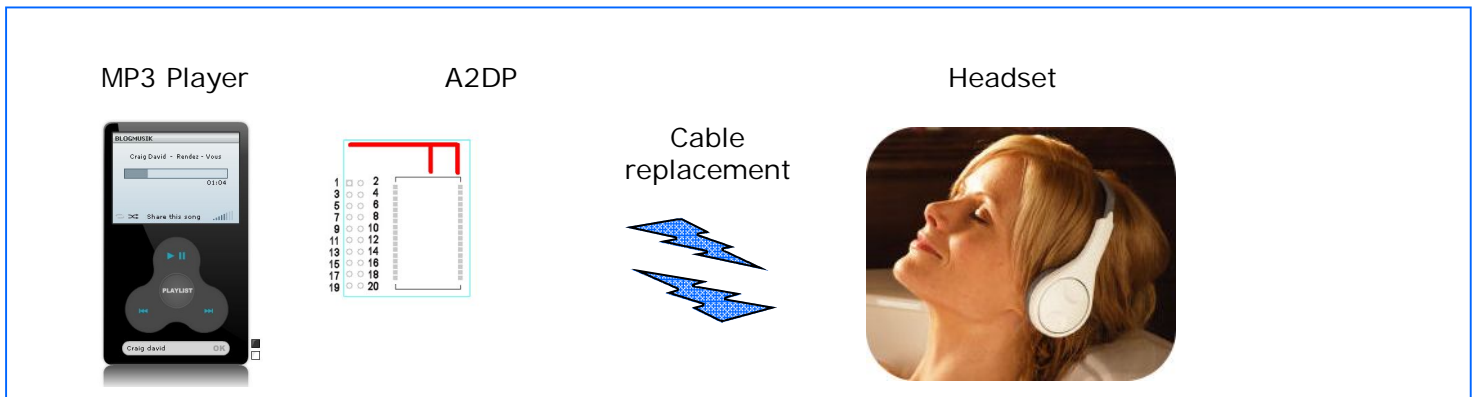
Applications (Stereo Cable replacement eikonPTT firmware)

Connect HF 2 ways radios to mobile devices for safety



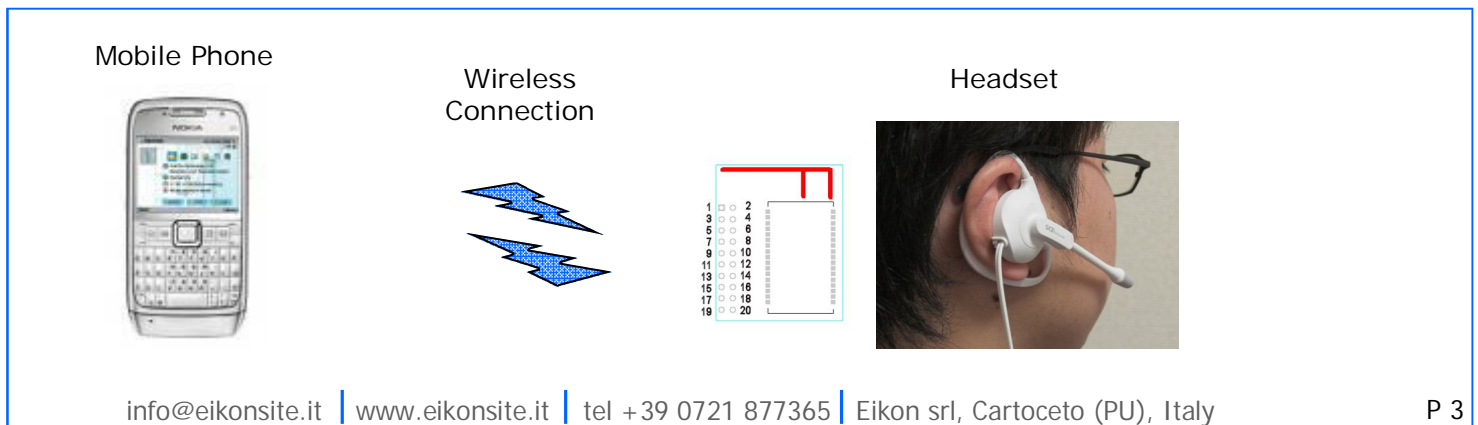
Applications (Stereo Cable replacement A2DP firmware)

Enjoy the wireless freedom to listen your MP3s

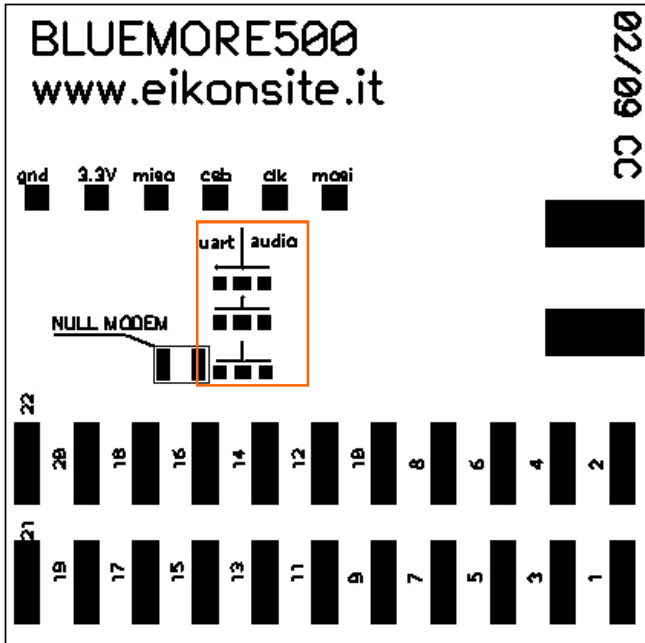


Applications (Handsfree firmware)

Wireless connection to your mobile phone (Mono, bidirectional full duplex)



Pin Assignment and Description



Bottom view

MODULE MODE CONFIGURATION

Pin 11/14/16 are hardware settable by this solder joints:

- **UART** (center-left solder joints): the module is compatible with EikonAT Serial firmware (**default**)
- **AUDIO** (center-right solder joints): the module is compatible with Audio firmwares.

RTS/CTS—NULL MODEM (default)

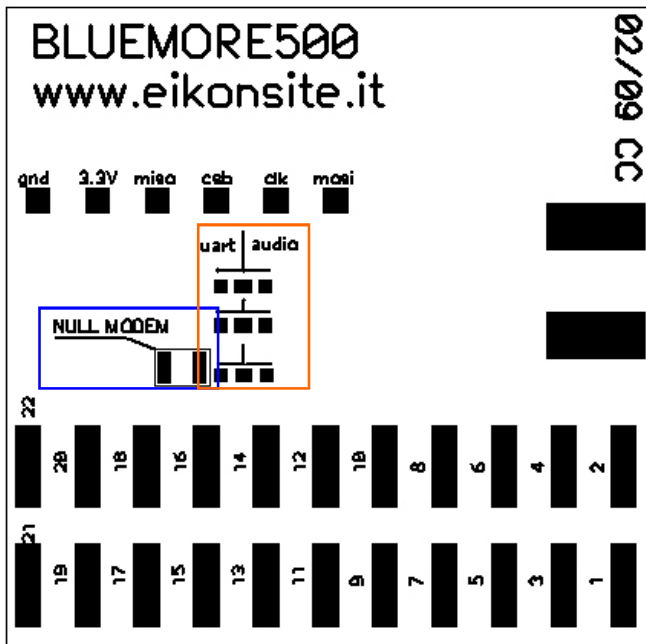
If shorted JP1 the module is setted in nullmodem mode (Rts-Cts signals shorted together).

If your application doesn't use hardware flowcontrol this short MUST be done

Pin	Name	In Out	Description
1	PIO 0	-	Controlled by Firmware
2	GND	-	Ground
3	AudioIn LN	In	Balanced audio input Left Negative
4	AudioIn LP	In	Balanced audio input Left Positive
5	AudioIn RN	In	Balanced audio input Right Negative
6	AudioIn RP	In	Balanced audio input Right Positive
7	AudioOut RP	Out	Balanced audio output Right Positive
8	AudioOut RN	Out	Balanced audio output Right Negative
9	AudioOut LP	Out	Balanced audio output Left Positive
10	AudioOut LN	Out	Balanced audio output Left Negative
11	UART_CTS / PIO1	-	* UART/Audio Jumper defined, please read page 5-6
12	3,3V	In	Power input
13	PIO3	-	Controlled by Firmware
14	UART_RTS / PIO2	-	* UART/Audio Jumper defined, please read page 5-6
15	PIO4	-	Controlled by Firmware
16	UART_TX / PIO11	-	* UART/Audio Jumper defined, please read page 5-6
17	UART_RX	In	RxD Input (active low) 3,3V UART
18	PIO5	-	Controlled by Firmware
19	PIO6	-	Controlled by Firmware
20	PIO7	-	Controlled by Firmware
21	RESET	In	Active high (reset if goes high for t>5mS)
22	PIO10	In	Controlled by Firmware

BLUEMORE500 has internal RESET circuit, use RESET pin just if you want to reset by external processor

Pin Configuration jumpers



Bottom view

UART eikonAT Serial port profile firmware (default)

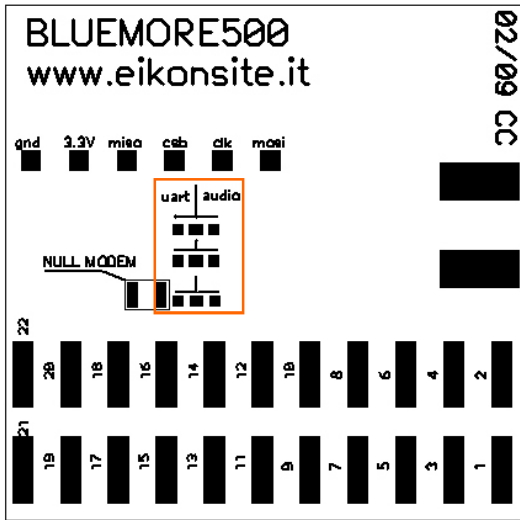
The 3 soldered jumpers has to be *Center to Right* connected

If you don't use RTS/CTS hardware flowcontrol *Null modem* jumper must be shorted by solder joint

In UART configuration the connector layout is the following :

Pin	Name	In Out	Description
2	GND	-	Ground
12	3,3V	In	Power input
11	UART_CTS	In	Clear to send input (active low) 3,3V UART
14	UART_RTS	Out	Request to send output (active low) 3,3V UART
16	UART_TX	Out	TxD Output (active low) 3,3V UART
17	UART_RX	In	RxD Input (active low) 3,3V UART
20	Pio 7	Out	Status Led (On=Blink Connected=Fixed HIGH)

Pin Configuration jumpers



Bottom view

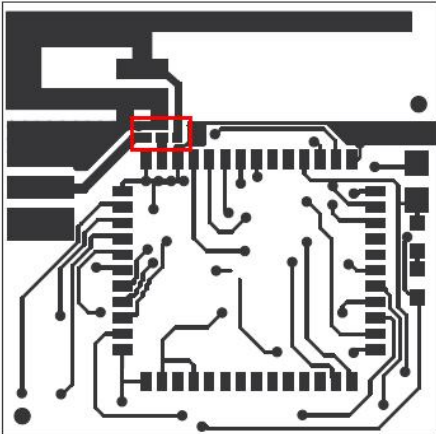
AUDIO eikonPTT audio firmware (on request)

The 3 soldered jumpers has to be Center to Left connected

Now the connector layout is the following, please refer to the Firmware datasheet to check the PIO pin feature and direction.

Pin	Name	In Out	Description
1	PIO 0	-	Controlled by Firmware
2	GND	-	Ground
3	AudioIn LN	In	Balanced audio input Left Negative
4	AudioIn LP	In	Balanced audio input Left Positive
5	AudioIn RN	In	Balanced audio input Right Negative
6	AudioIn RP	In	Balanced audio input Right Positive
7	AudioOut RP	Out	Balanced audio output Right Positive
8	AudioOut RN	Out	Balanced audio output Right Negative
9	AudioOut LP	Out	Balanced audio output Left Positive
10	AudioOut LN	Out	Balanced audio output Left Negative
11	PIO1	-	Controlled by Firmware
12	3,3V	In	Power input
13	PIO3	-	Controlled by Firmware
14	PIO2	-	Controlled by Firmware
15	PIO4	-	Controlled by Firmware
16	PIO11	-	Controlled by Firmware
17	UART_RX	In	RxD Input (active low) 3,3V UART (NOT USED)
18	PIO5	-	Controlled by Firmware
19	PIO6	-	Controlled by Firmware
20	PIO7	-	Controlled by Firmware
21	RESET	In	Active high (reset if goes high for t>5mS)
22	PIO10	In	Controlled by Firmware

Antenna



Top view

PCB antenna is connected by default

If you need SMA connector move the solder joint to the CENTRAL—LEFT position

Ask us to supply the special version with SMA connector for external antenna.

Serial

	FACTORY DEFAULT
Baud rate:	1200..921600 bps
Data bits:	8
Stop bit(s):	1, 2
Parity:	None/Even/Odd
Handshake:	None (RTS/CTS shorted)
	if NONE RTS and CTS must be shorted together)

Preinstalled eikonAT firmware allows you set these parameters simply by AT command or by our PC utility software "eikonAT setup PC" (download it from our website)

PIO

I/O pins are available to turn on/off external devices, to send informations to a microprocessor, to turn on led, buzzer, etc...

These pins are controlled by firmware.

Pins are 3,3V logic level, max 10mA output current

SPI

These 4 signals are used for firmware upgrade and module settings change.

POWER

Voltage input 3,3V DC +/- 5%

Bluetooth Power Class 1
RF Power 100mW (20dBm)

Average current consumptions for Master firmware (v3.1) :

No connection: 67 mA
Active connection (data on UART): 33 mA
Idle connection (no data on UART): 27 mA
Max RF burst (peak): up to 88 mA

Average current consumptions for Slave firmware (v3.0) :

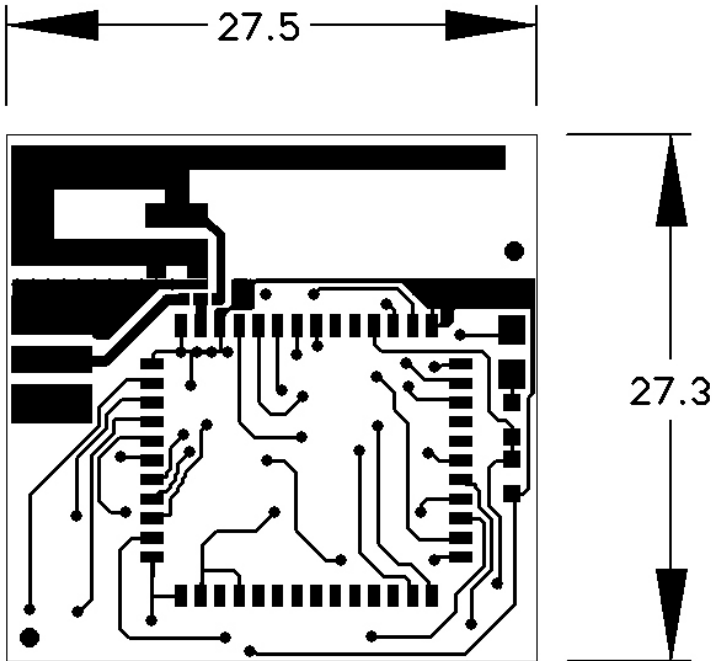
No connection (inquiry): 18 mA
Active connection (data on UART): 48 mA
Idle connection (no data on UART): 18 mA
Max RF burst (peak): up to 86 mA

TEMPERATURE RANGE

Operation: 0°C +70°C (not condensing)

Storage: -40°C +85°C (not condensing)

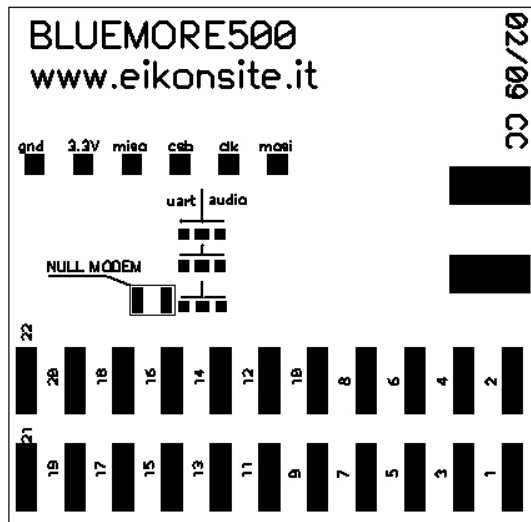
MECHANICAL DRAWING (millimeters)



BLUEMORE500 Top view

Note on PCB ANTENNA

To have the max performance the PCB antenna has to be free to irradiate signal. If the module is place into a base PCB the area under the antenna must be free from tracks or copper areas. Please leave free space under the antenna and 10-15mm all around it.



BLUEMORE500 Bottom view

Applications and firmware options

- Serial port cable replacement with AT commands for setup (**default firmware : EikonAT onboard**)
- Audio full duplex with PTT (**firmware : EikonAT on request**)
- Audio Headset (**firmware : Headset on request**)
- Audio Handsfree (**firmware : Handsfree on request**)
- Audio A2DP (**firmware : A2DP on request**)
- Audio Stereo Headset (**firmware : Stereo_Headset on request**)

ORDERING INFORMATION

BLUEMORE500 is shipped with EikonAT firmware by default. This firmware allows you to setup the module (Serial port profile) by AT commands or by a simple PC software

For special needs please send us a description of your system and we'll suggest you the best firmware solution (we develop custom firmware)

Firmware on BLUEMORE500 can be flashed using our evaluation board (SPI connection)

Buy online from our website www.eikonsite.it or contact your local reseller.

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