

MCR54 / MCR54-DUAL

User Manual

Multi-band

Quad/Dual True Diversity

Camera Receiver



rev.14 (reference FW 2.3.0)

Date: 01 October 2024

SAFETY INSTRUCTION

- Read this safety instruction and the manual first
- Follow all instructions and information.
- Do not lose this manual.
- Do not use this apparatus under the rain or near the water.
- Do not install the apparatus near heaters or in hot environments, do not use outside the operating temperature range.
- Do not open the apparatus, only qualified service technicians are authorized to operate on it. The apparatus needs servicing when it is not properly working or is damaged by liquids, moisture or other objects are fallen in the apparatus.
- Use only accessories or replacement parts authorized or specified by the manufacturer.
- Clean the apparatus only with dry cloths, do not use liquids.
- Report the serial number and the purchasing date in front of the manual. It is needed to have proper replacement parts or accessories from the manufacturer.
- When replacement parts are needed, use only replacement parts authorized from the manufacturer. Substitution with not authorized parts could result in electric shock, hazards or fire.
- Keep attention on all the labels with warnings or hazards on the apparatus.

WARNING: The apparatus is intended for professional use; the manufacturer alerts the user that the headphone output power of the apparatus could exceed the level of 85 dB(A) of sound pressure level and this could be dangerous for the hearings. Do not use the headphone with high power level or for long time. Reduce the power or suspend the hearing in case of any kind of hearing problem.

MAIN FEATURES

MCR54 is a camera mount quad true diversity wireless-microphone receiver system in a modular stand-alone or slot-in configuration (compatible with most camera's slot):

- Wideband just isn't enough anymore! Upgrade to a Multi-Band system with up 790 MHz tuning range to find your frequency, anywhere in the World.
- With the combination of Narrowband Modulation (High Density) and Linear transmitters, set your channels every 200kHz without intermodulation distortion and get an extra 3dB sensitivity.
- With eight internal receiver boards, the MCR54 boasts an unprecedented capacity for range and reliability.
- DSP delivers ENC and ENR algorithms for perfect audio in any application with less than 1ms delay –Create and shape presets for the desired sound. This enables the use of third-party transmitters with Wisycom receivers
- Modular configurations for stand-alone or slot-in formats in many Cameras or Audio Devices
- Monitor & control through USB C or Bluetooth 5 (long range) on Wisycom Manager 2.2 (computer SW)
- High contrast OLED display and 4 buttons enable quick manual setup
- DSP Analog & Digital Audio Output (AES3)
- Extreme low noise VCO with ultrafast spectrum scan for optimal quick & easy setup
- Wisycom exclusive digital sub-carrier telemetry technology enables:
 - remote TX battery monitoring
 - advanced tone-squelch operating
 - Push-to-talk function (via optional back-panel module):
Simply pushing this button (PTT), the presenter causes the remote switching of the receiver's output-line, from the "main line" to the additional "intercom line", in order to be able to talk "off-air" directly with the technical team. Then all PTT's MICs can be connected in pre-fading allowing a clever intercom setup.
- Rear antenna connectors and micro audio and power adapter
- 40 groups of 60 channels fully user programmable (2400 frequencies)

TECHNICAL DESCRIPTION

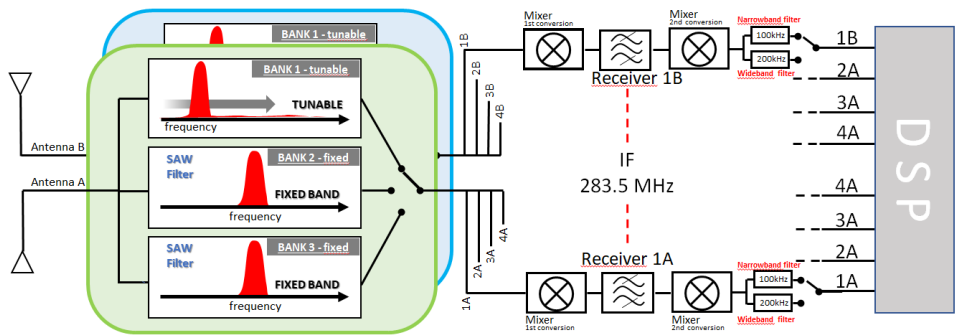
The MCR54 is a professional quad true diversity receiver for wireless microphones reception designed for broadcast television production, live performances, theatres and many other professional applications.

The winning features:

- High immunity on strong RF environment
- Massive switching bandwidth
- Dynamic audio performances and flexibility with analog or digital processors
- Unprecedented reliability and durability

One of the milestones in the design of the MCR54 is unprecedented reliability: most of the circuitry of the receiver is independent one from each other. Above a schematic with an overview of main receiver functions.

RF layout:



For each antenna the RF signal is split in 4 to receiver 1,2,3 and 4 (antenna A and antenna B) with a wide band splitter. Then 3 banks of filters are selected according to the frequency of the 4 receivers:

	MCR54-B1 (UK)	MCR54-B2 (USA/EU)	MCR54-B3 (JP)
FILTER BANK 1:	470-800MHz Tuneable filter with 32MHz of bandwidth		
FILTER BANK 2:	961-1000 MHz	823-832 MHz	806-810 MHz
FILTER BANK 3:	1045-1075 MHz	940-960 MHz	1240-1260 MHz

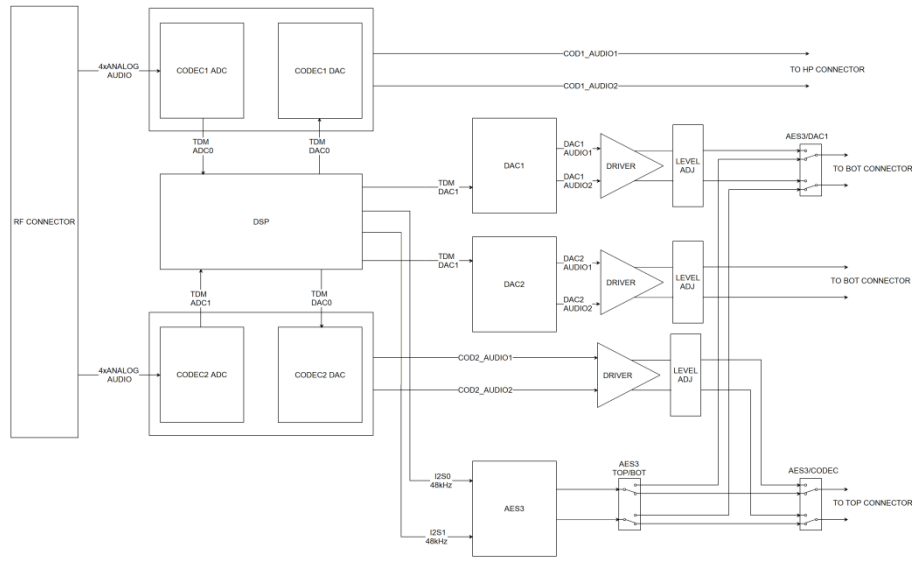
NOTE: the tuning frequencies of all the 4 receivers has to be in the same bank of filter!

All the 4 receivers are true diversity receivers: each one is made of two receivers tuned on the same frequency. Subsequently the selection of the band filter between 100 kHz or 200kHz allows to work with Narrowband (High Density) or Wideband transmitters respectively.

Each receiver has its own demodulated signal and its own RSSI signal (Receiver Signal Strength Indication); RF squelch used measurement of RSSI level for antenna diversity and for audio enabling. In addition to the RSSI level, each receiver measures the Channel Quality. It is a more powerful tool than RF squelch because it actually looks at the quality of the signal from the TX relative to the noise floor on the channel which can vary over time. With the noise squelch set to on you can set the RF squelch to a much lower level.

A DSP **selects** or **combines** signals from section A & B to have the best audio.

Audio Layout



As shown on the above schematic, MCR54 provides the following audio signals:

- HP [HEADPHONE]: an analog monitor audio output to headphone 3.5mm jack socket. Thanks to the “Setup>Headphone” menu the user can select which of the 4 receivers he wants to listen to and can adjust the volume from 0 to -24 step 1dB.
- BOT [MAIN]: 4 audio signal streams come out in the connector on the bottom and depending on the plugged slot-in can be configured according to the following table:

SLK54 - IKSS/SX		BPA54			
CH1	CH2	CH1	CH2	CH3	CH4
A1	A2	A1	A2	A3	A4
D1, D2	D3, D4	D1, D2	D3, D4	A3	A4

- TOP [AUX]: 2 audio signal streams come out in the TA5 top feed connector and can be configured in digital (enabling AES3 on AUX outputs) or in analog:

TOP	
CH1	CH2
A1	A2
A3	A4
D1, D2	D3, D4

Product overview



1 SMA antenna connectors

2 Mini XLR 5-pin connector
2 channels analog audio outputs electronically balanced or
4 channels digital audio outputs (AES3)



1 GND
2 CHANNEL1+
3 CHANNEL1-
4 CHANNEL2+
5 CHANNEL2-

3 LED power supply

GREEN	The receiver is on with an external power supply
PALE GREEN	The receiver is on with battery
GREEN BLINKING	The external power is low
PALE GREEN BLINKING	The power of the battery is low
RED BLINKING	Relative transmitter battery is low:
	- slowly blinking if 25% lifetime
	- quickly blinking if 12% lifetime

4 Led Bluetooth BLUE

5 DISPLAY 128 x 96 pixels

6 LED receiver status

OFF	Relative receiver is not active
RED	RF level below squelch and/or Noise squelch on both diversity receivers
RED BLINK	frequency is out of filter (32MHz) see NOTE page 3
BLUE	RF level above squelch and/or Noise squelch and receiver A is active (ANTENNA A)
GREEN	RF level above squelch and/or Noise squelch and receiver B is active (ANTENNA B)

7 Headphone output (jack 3.5 mm)

8 "PWR/EXIT" BUTTON

Push and keep this button to power on/off the receiver. The on/off status is permanently memorized into the non-volatile memory, this way the system can be setup to automatically turn on the receiver when power up.
During menu navigation push this button to exit from current menu (escape function).

9 "MENU/SEL" BUTTON

Push this button to navigate function menu's and to confirm the chosen setup.

10 "Arrow down/SCAN" BUTTON

Push and keep this button to start the automatic scan.
During menu navigation push this button to move-down and select the previous item.

11 "Arrow up/SYNC" BUTTON

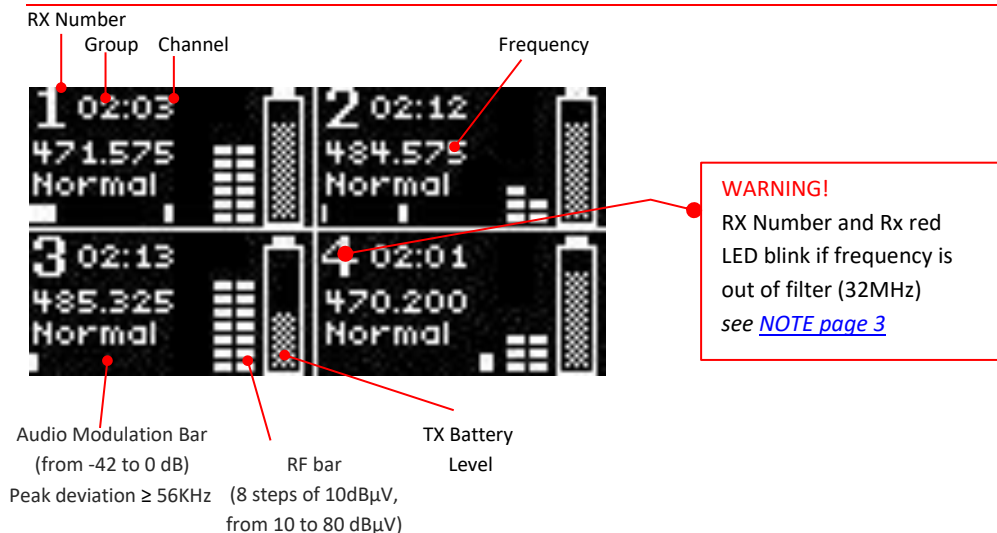
Push and keep this button to start a synchronization with a Wisycom transmitter (follow instructions on display). Before starting synchronization IRDA must be enabled on Wisycom transmitter.
During menu navigation push this button to move -up and select the previous item.

Display menu

Using navigation buttons it is possible to quick & easy navigate through the menu:

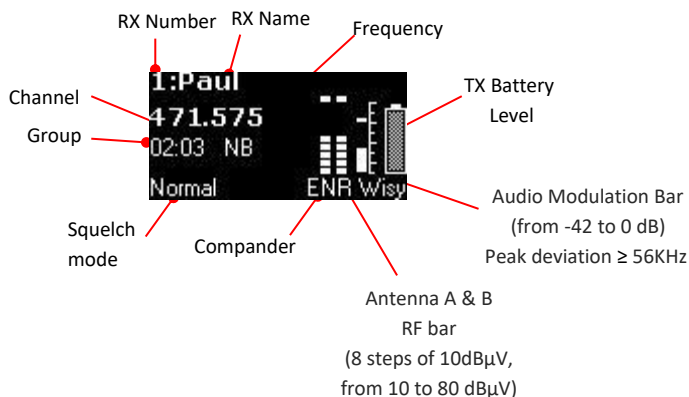
- SEL to enter a level or SAVE
- EXIT to exit a level
- Arrow up/down to circle on the same level

Status screen

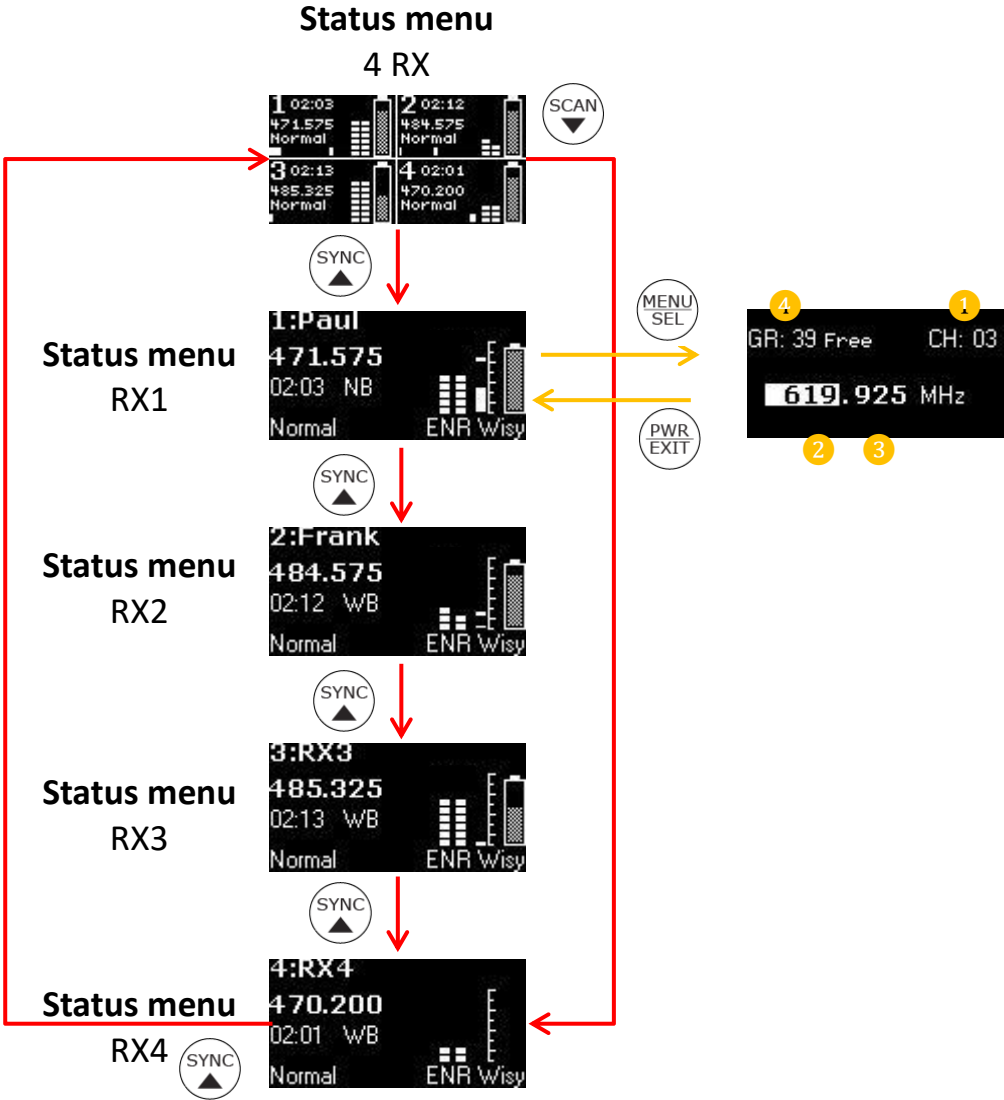


Rotatory menu

From FW version 1.10, pushing “Arrow down/scan” button or “Arrow up/sync” button, it’s possible to enter in a rotatory menu where you can see the main parameters of the single receiver as frequency, group, channel, compander, RF level and audio level:



From the single receiver page press SEL button to enter direct into the Frequency setup.
Use the arrows to change the parameter (Channel/Group/ Frequency) and SEL to confirm and shift to the other parameter. NOTE: when the Channel is locked, the Frequency parameter is not editable.



Tree menu

Menu	Preset	Active	
		Load	U01-Preset1/U02-Preset2/U03-Preset3.... U16-Preset16
		Save	U01-Preset1/U02-Preset2/U03-Preset3.... U16-Preset16
		Factory	
	Edit RX1		
	Edit RX2	Name/ Freq./ Ch. Mod./ Compand/ Sq. mode/ Audio/ Sync	
	Edit RX3		
	Edit RX4		
	Settings	Active RXs/ BT/ Audio Route/ Headphones/ Display/ Act. code/ Panel lock/ fn menu	
	Scan	Scan now/ Squelch/ Button/ View last	
	Info	Supply/ Model/ Serial/ Range/ Antenna/ Base/ HW/ FW/ Diag./ Alarms	

Preset:

The preset menu has the following four submenus:

- **Active:** that allows to verify the active Preset;
- **Load:** that allows to reload up to 16 Presets;
- **Save:** that allows to save up to 16 Presets;
- **Factory:** that allows to do factory settings reset.

Edit RX1÷RX4

Select Edit RX menu to set RX parameters for each receiver:

Edit RX1/RX2/RX3/RX4	Name	"12 characters max"	
	Frequency	Group / Channel and Frequency selection	
	Ch. Modulation	Wide/ Narrow	
	Compander	ENS Wisy/ ENC Wisy/ ENR Wisy...	
	Sq. mode	User/ Normal/ LongRange	
	Audio	AES level	0 to -30 dBFs (1dB step)
		Base level	18 to -24 dBu (1dB step)
		Top level	18 to -24 dBu (1dB step)
		PTT	No/Yes
		PTT Base	T+, T-, T, OFF
		PTT Top	T+, T-, T, OFF
		Phase	0/180
		Cal. Tone	Cal. Tone OFF/ON
		Frequency	400/600/1000 Hz
		Level	-30 to 0 dB (1 dB step)
	Sync	"Active automatic sync with a transmitter"	

Name

Selecting Name, it's possible to edit the name of the receiver (12 characters).

Frequency

Select current group and channel. If the specific group/channel is not locked, frequency can be edited in this menu.

Ch. Modulation

Narrowband or Wideband software selectable according to transmitter modulation.

NOTE: During the SYNC process the receiver sends the type of modulation (NB or WB) and the TX adapts automatically to the receiver's modulation settings accordingly.

Compander

MCR54 supports 5 different types of "Compander systems" (others on request through Digicom):

ENS: designed for voice and music applications.

ENR-Wisy: designed for maximum noise reduction. Ideal for use in louder environments.

ENC-Wisy: designed for maximum audio fidelity (use this in case of special vocal application or to remote instruments). Ideal for use in quite environments.

ENR-1.2*/ENC-1.2*: to use with some type of camera (ex. Canon® C300, Canon® XF305, Sony® Pmw200, Sony® Pmw300, Sony® PmwF5, Sony® Fs7, Nikon® D600 or Nikon® D800, Canon® SD mark3...) which accept a signal with reduced dynamic. This type of expansion doesn't add artifacts to the signal and allows to have a less noisy signal. It allows to improve the quality of the audio registration (compared to the ENR/ENC standard) increasing the S/N ratio up to 15dB.

To use these expanders, it's necessary to set ENR on the transmitter and ENR 1.2 on the receiver or set ENC on the transmitter and ENC 1.2 on the receiver.

ENR-1.2 it's used for the optimization of noise, ENC-1.2 it's used to optimize the voice.

NOTE: The compander of the receiver must be the same as the transmitter

MCR54 core is a power digital audio processor that, besides an unbeatable audio quality and flexibility, can emulate most expanders systems on the market. On this menu you can setup the audio expanding chipset emulation. ENR is emulating the Philips™ SA572 and PTT digital data of Wisycom transmitters. Other setups can be loaded on request.

Sq. Mode

Squelch Mode is available in 2 possible configurations: Normal or Long Range.

Relevant setup are summarized in the following table:

	FIXED PARAMETERS				
	RF squelch [dBμV]	Noise Squelch [dB]	Squelch ON delay [ms]	Tone squelch	TSQ delay [ms]
Normal	6	11	0	ON	500
Long Range	3	8	0	OFF	500

NOTE: For expert users, there is a 3rd configuration named User which allows to modify each single parameter using the Wisycom Manager.

	VARIABLE PARAMETERS				
	RF squelch [dBμV]	Noise Squelch [dB]	Squelch ON delay [ms]	Tone squelch	TSQ delay [ms]
User	OFF/0/3/6.../46	From 8 to 25	0 to 2000	ON/OFF	0 to 2000

RF Squelch

RF squelch is a function that acts to suppress the audio output of a receiver in the absence of a sufficiently strong desired input signal.

Noise Squelch

Noise squelch is a more powerful tool than RF squelch because it actually looks at the quality of the signal from the TX relative to the noise floor on the channel which can vary over time. With the noise squelch set to ON you can set the RF squelch to a much lower level.

Tone Squelch

MCR54 is able to detect a digital tone squelch generated by a Wisycom transmitter (ex. MTH410/MTH400/MTP40S/ MTP41S/MTB40S/RPU500).

Tone squelch ON: when the tone squelch is enabled the audio is muted unless the correct carrier is detected. Tone squelch allows to work with lower RF squelch, increasing the coverage and the robustness especially in presence of digital television carriers (DVB-T).

Audio

Max audio level output can be set:

- from 0 to -30 dBFs (1 dB step) for digital AES3 output
- from 18 dBu to -24 dBu (1 dB step) for analog BASE output
- from 18 dBu to -24 dBu (1 dB step) for analog TOP output

PTT

It's possible to choose the status of audio output for the Base and the Top when transmitter's PTT button is pushed or released. The following table explains the logic used for the nomenclature:

	T	T+	T-	OFF
PTT PUSHED	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PTT RELEASED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Legend:

T: output is enabled

T+ output is enabled when PTT is pushed

T- output is enabled when PTT is released

OFF output is disabled

[X]: indicates that audio output is enabled.

[]: indicates that audio output is disabled.

Phase

To change audio phase of 0° or 180°.

Cal. Tone

If Cal. tone is enabled, a calibration tone is transmitted from the outputs of the receiver and the audio LED of the relative RX become blue (to turn off the calibration tone, go on the menu Advanced >RX and press EXIT)

It's possible to select the audio level between -30 dB to 0dB (referred to the maximum output level set on the audio outputs). It represents the reference of the peak deviation (56 KHz).

The frequency of the tone can be chosen between 400/600/1000 Hz.

Sync

The SYNC function is useful to tune a transmitter on the same frequency of the receiver via the IR interface. Before starting the sync function tune the receiver on desired channel, manually or using the SCAN utility. After this, enable the IR interface on the transmitter. Now press UP&EXIT buttons together or enter in the Sync menu to start the SYNC function.



Keep the IR window of the transmitter in front of the IR window of the receiver and, as soon as the connection is done, the receiver will send to the transmitter all the information needed.

If the operation is not possible, (i.e. the frequency range of the transmitter is not compatible with the frequency of the receiver), the display will show an error message.

If the transmitter has the function “NAME” enabled, when the sync function is completed it will show the same name of the synchronized receiver.

Settings

Select Settings menu to access to the main parameters’ settings.

Settings	Active RXs	RX1 RX2 RX3 RX4	
	BT	Power on	Yes/No
		Pairing	Yes/No
		Passcode	Yes/No
		Reset Dev.	
	Audio Route	Base#1	
		Base#2	
		TOP	
	Headphones	Volume	-24 to 12 dB (1 dB step)
		RX select	RX1/RX2/RX3/RX4
	Display	Led mode	Full/Alarms/OFF
		Brightn.	0/5
		LOW	5/60 sec (step 5 sec)
		OFF	10/120 sec (step 10 sec) / OFF
	Act. code		
	Panel lock	Yes/No	
	fn menu	Audio/ActRX/BT	

Active RXs

Allow to enable/disable each single receivers.

Bluetooth

Pairing: per accoppiare con dispositivo cellulare, tablet etc. Quando accoppiato è possibile editare i parametri altrimenti si può solo vedere delle info

Passcode: per impostare una password

Reset: per resettare gli accoppiamenti bluetooth

Audio Route

MCR54 provides two audio output: Base & Top. Depending on the rear panel mounted it is possible to have different scenarios.




Rear panels:

- **BPA54**: stand-alone rear panel;
- **SX**: Sony cameras rear panel;
- **IKSS**: Ikegami/Panasonic cameras rear panel;
- **MRK16**: Wisycom 16 channels receiver.


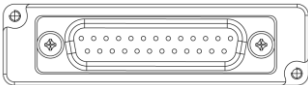
This menu allows to decide the type of audio outputs (Digital AES3 or Analog) and what receivers come out to the connectors.

Depending on the plugged slot-in it can be configured according to the following tables.


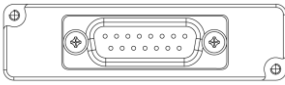
With **BPA54** it is possible to enable Digital outputs on TOP or BASE#1. If the outputs are digital it is possible to come out all the receivers with one connector while in analog mode each connector can comes out the couple (A1, A2) or (A3, A4).

TOP output		BASE#1 output		BASE#2 output	
					
CH1	CH2	CH1	CH2	CH3	CH4
A1	A2	A1	A2	A3	A4
A3	A4				
D1, D2	D3, D4				
A1	A2	D1, D2	D3, D4	A3	A4
A3	A4				

With **IKSS** it is possible to enable Digital outputs on TOP or BASE. If the outputs are digital it is possible to come out all the receivers with one connector while in analog mode TOP connector can comes out receivers (A1, A2) or (A3, A4) while BASE connector can only provide receivers (A1, A2).

TOP output		BASE output	
 <div>1 GND 2 CHANNEL1+ 3 CHANNEL1- 4 CHANNEL2+ 5 CHANNEL2-</div>		<div>2 CHANNEL1+ 3 CHANNEL1- 15 CHANNEL2+ 16 CHANNEL2-</div> 	
CH1	CH2	CH1	CH2
A3	A4	A1	A2
D1, D2	D3, D4		
A1	A2	D1, D2	D3, D4
A3	A4		




With **SX** it is possible to enable Digital outputs only on TOP connector. If the outputs are digital it is possible to come out all the receivers with one connector while in analog mode TOP connector can comes out the couple (A1, A2) or (A3, A4). BASE connector can only comes out (A1, A2) receivers.

TOP output		BASE output	
 <div>1 GND 2 CHANNEL1+ 3 CHANNEL1- 4 CHANNEL2+ 5 CHANNEL2-</div>		<div>2 CHANNEL1 3 CHANNEL2</div> 	
CH1	CH2	CH1	CH2
A1	A2	A1	A2
A3	A4		
D1, D2	D3, D4		


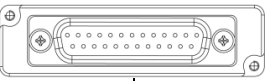
Audio Route: MCR54-DUAL

MCR54-DUAL provides two receivers and works the same as MCR54. For audio routing, the above tables modify as follows for each rear panel.


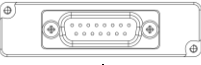
BPA54:

TOP output		BASE#1 output		BASE#2 output	
					
CH1	CH2	CH1	CH2	CH3	CH4
A1	A2	A1	A2	-	-
		D1, D2	-	-	-
D1, D2	-	A1	A2	-	-

IKSS:

TOP output		BASE output	
			
CH1	CH2	CH1	CH2
A1	A2	D1, D2	-
D1, D2	-	A1	A2

SX:

TOP output		BASE output	
			
CH1	CH2	CH1	CH2
A1	A2	A1	A2
D1, D2	-		

Headphones

This menu the user can select which of the 4 receivers he wants to listen to and can adjust the volume from 0 to -24 step 1dB.

Display

In this menu item it's possible to set the mode of switch on of the front LEDs and the contrast and timeout of the display.

LEDs mode can be:

- Full: all LEDs are activated
- Alarm: the LEDs are ON only in case of alarm (only red)
- OFF: all LEDs are always off

Low timeout indicates the time until the display stays on with the contrast set (after which, the display contrast is lowered and after another "Low timeout" the display shows the Status screen).

Off timeout is the time until the display stays on (after which, the display will automatically turn off). If Off timeout is set to OFF the display never turn off automatically.

Act. code

This section allows to insert the activation code for a compander enabling.

Panel lock

By activating this function, it is possible to lock device parameters. Doing this permits to access the menu and read what it's selected without modify any parameter.

fn. Menu

This feature allows to select to which parameter accede with the shortcut combination of pressing "Up and Down" arrows together:

- **Audio:** that goes to "Audio route" menu;
- **BT:** that goes to "Bluetooth" menu;
- **ActRX:** that goes to "Active Rxs" menu.

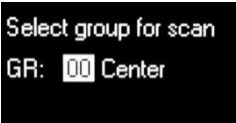
Scan

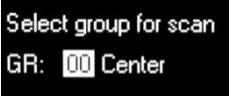





Select Scan menu to access to the frequency parameters settings.




Scan	Scan now	Channels
		Freq.
	Squelch	OFF/0/3/6/9/12/15/18/21/24/28/32/36/40/46 dBuV
	Button	Channels/ Freq.
	View Last	

The MCR54 allows the user to scan using the Group/Channel frequency file in the unit or by scanning a manual selection of frequencies. Select which type of scan by going into the scan menu.

Channels



Channel		<p>Once started a channel scan operation the receiver asks for group to be used*. Press the SEL button to select the group to scan.</p>
		<p>Then it prompts to turn off all transmitters. This is in order to provide the most accurate scan data.</p>
		<p>Press SEL to start the scan!</p>
		<p>After few seconds, scan results are displayed sorted by level, making easier to pick up the best one. The dotted line in the graph indicate the squelch threshold. Under the graph are reported the following parameters:</p>
	 	<ul style="list-style-type: none"> - Ch: Channel - Rank: Ranking position (Best/Lowest Noise Level to Worst/Highest Noise Level) - Freq: Frequency - Lev: RF level <p>Pushing simultaneously UP and DOWN button, the results can be also displayed on a chart in ascending order according to the number of the channel.</p> <p>After the selection of the desired channel, a screen appears with the selected frequency, channel and group and it is possible to Set or Synchronize the receiver with the transmitter. We recommend setting the frequency and then synchronize it with the transmitter.</p>

Freq	Select freq and step: Min: 470.0 MHz Max: 529.2 MHz Step: 100 KHz	<p>The Frequency scan allows to select a range of frequency to scan, between a maximum and a minimum value and the step with which to perform the scans. Press and hold the SEL button to confirm.</p>
	Select freq and step: Min: Switch OFF Max: all TXI ? Step: 100 KHz	
	Scan freq: 470.0 : 529.2 509.500 MHz 	
	 Freq: 470.0 MHz Lev: 60 dBuV [470.0-529.0]	
	 Freq: 489.1 MHz Lev: 4 dBuV [482.0-493.9] Freq: 489.1 MHz Lev: 4 dBuV Set Sync ...	
		<p>Then it prompts to turn off all transmitters.</p> <p>Press SEL to start the scan!</p> <p>After few seconds, scan results are displayed on a chart in ascending order according to the frequency (step 1MHz). The dotted line in the graph indicate the squelch threshold.</p> <p>Pushing simultaneously UP and DOWN button it's possible to zoom the graph to show all the steps of scan</p> <p>After the selection of the desired frequency, a screen appears with the selected frequency and the RF level and it is possible to Set or Synchronize the receiver with the transmitter. We recommend setting the frequency and then synchronize it with the transmitter.</p>

Info

In the info menu the following information are displayed:

Info		Description	Example
Supply		Supply voltage measured (on the rear connector)	<i>12.0 Volt</i>
Model		Model of the device	<i>MCR54</i>
Serial		The serial number composed by 8 numbers	<i>10900174</i>
Range		Frequency range according to the MCR54 band (minimum and maximum frequency)	<i>470–960</i>
Antenna			<i>BLACK</i>
Base		Version of rear panel: BPA54-SX BPA54 BPA54-IK MRK16 NONE	<i>BPA54</i>
HW	Country	Country code	<i>EU</i>
	Main rev.	Hardware revision of the main board	<i>00.08</i>
	Main opt.	Option of the main board	<i>-</i>
	RF rev.	Hardware revision of the RF board	<i>01.02</i>
	Panel rev.	Hardware revision of the panel board	<i>00.01</i>
FW	Version:	FW version	<i>v2.0</i>
	BL:	Bootloader version	<i>v.1.0</i>
	DSP:	DSP version	<i>V1.1</i>
Diagnostic			
Alarms		Number of alarms. If the number of alarms is > 0 push SEL button to enter o the Alarms list. For each error a brief description and the error code is showed.	<i>0</i>

ACCESSORIES AND PARTS

BPA54: Stand alone socket



Hirose HR10A-F

DC



- 1 GND
- 4 +VDC



- 1 GND
- 2 CHANNEL1+
- 3 CHANNEL1-
- 4 CHANNEL2+
- 5 CHANNEL2-



- 1 GND
- 2 CHANNEL3+
- 3 CHANNEL3-
- 4 CHANNEL4+
- 5 CHANNEL4-

SLK54-SX/SX2: Sony slot-in

"Slot-in" kit (upper flange +rear-panel) for Sony camera.

SUBD-15pin:

- 1 GND
- 2 CH1 Anal (unbalanced)
- 3 CH2 Anal (unbalanced)
- 4 VDC



NOTE:

On SLK54-SX analogue outputs level can be set to 0dBu or -16dBu (with +18dBu on RX max level)

On SLK54-SX analogue outputs level can be set to +2dBu or -16dBu (with +18dBu on RX max level)

NOTE:

not all Sony cameras has the internal double pin enable.

CHECK IF YOUR CAMERA SUPPORT 2 CHANNELS ON SLOT-IN

SLK54-IK: Ikegami super slot

"Slot-in" compatible with:

- Sound Device SuperSlot (4 audio outs in capable devices, i.e. Sounddevices™ SL-2)
- Unislot (Ikegami, Panasonic cameras1)

SUBD-25 pinout:

- 1 GND
- 2 CH1+ Anal/ CH1,2 AES3+
- 3 CH1- Anal/ CH1,2 AES3-
- 4 GND
- 5 VDC (6-18 VDC)
- 6 RX_ON
- 7 RX_WARNING
- 15 CH2+ Anal/ CH3,4 AES3+
- 16 CH2- Anal/ CH3,4 AES3-
- 22 UART from Wireless receiver
- 23 UART to Wireless receiver
- 25 GND



NOTE:

when MCR54 is set to analogue outputs on the BASE, the level is attenuated of 16dB (max anal. outputs: +2dBu)

No attenuation when output on the BASE is set to digital AES3


BCA54: Stand alone with lithium battery pack

- 2 mini XLR-5pin male audio outputs
- 1 Hirose connector for external power
- Battery pack for RRC2040 33.2Whr lithium battery






CABLES

	CAM50-3	AF cable (50 cm), mini XLR-5F / 2 XLR-3M connectors <i>FOR ANALOG OUTPUTS (2 channels)</i>
	CAM50-41	AF cable (50 cm), mini XLR-5F / 1 XLR-3M connectors <i>FOR AES3 DIGITAL OUTPUTS (2 channels)</i>
	CDC34	External power feeding cable, hirose/raw wires (50 cm)
	PSP910-H	AC/DC Power Supply, Switch Mode with Hirose 4 pin connector (to use one “desktop” apparatus alone) Input:100 ÷ 240V ac Ouput:12V@700mA, 8W Plug type: EU

	CAUSBC1	USB Cable 1m USB B - USB C Male Black To monitor/control/power on MCR54 receiver
	CAP52-IK	STAND ALONE HARNESS CABLE- DB25 (to MCR54/MCR42, Ikegami/Panasonic slot-in compatible) 2 XLR-3M (line output isolated with audio transformer) + Hirose (for power supply) → MCR54 (2 analog audio outputs or 4 AES3 audio outputs)
	CAP52-SX	STAND ALONE HARNESS CABLE- DB15 to MCR54/MCR42, Sony slot-in compatible) 2 XLR-3M (line output isolated with audio transformer) + Hirose (for power supply) → MCR54 (2 analog audio outputs)

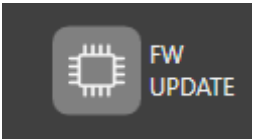
ANTENNAS

	AWS-BK	Whip antenna UHF 470-608 MHz SMA connector, black cap
	AWS-YL	Whip antenna UHF 572-694 MHz SMA connector, yellow cap
	AWS-GN	Whip antenna UHF 670-870 MHz SMA connector, green cap
	AWS-BL	Whip antenna UHF 820-1160 MHz SMA connector, blue cap
	AWS-RD	Whip antenna UHF 1060-1300 MHz SMA connector, red cap

	AWS-BK-RA	Whip antenna UHF 470-700 MHz SMA connector, black cap Right angle
	AWS-GN-RA	Whip antenna UHF 670-870 MHz SMA connector, green cap Right angle
	AWS-BL-RA	Whip antenna UHF 820-1160 MHz SMA connector, blue cap Right angle

How to update the firmware:

1. Connect the MCR54 to the PC through the USB-C cable
2. Check if the version of *Wisycor Manager* installed in your PC is the latest version. If not, upgrade to the new version
3. Run *Wisycor Manager*
4. Power up the receiver MCR54
5. Push **FW UPDATE** button
6. Download the .xupf file from the website and load the file using **FW library > Import** button.
7. Select the file
8. Select the receiver and Play



First the program erases the flash memory and later it writes the flash memory. A green bar below the panel shows the progress of this process. **Take care do not disconnect the USB communication or power off the MCR54 during this process.**

CONFORMITY

FCC Conformity

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.

In compliance with

FC 47 CFR 15 Subpart B
CAN RSS-Gen/CNR-Gen
CE

ITALY ONLY

Obblighi di informazione agli utilizzatori

Modello di informazioni agli utenti dei prodotti di tipo “professionale”

INFORMAZIONE AGLI UTENTI

ai sensi dell'art. 13 del Decreto Legislativo 25 luglio 2005, n. 151 “Attuazione delle Direttive 2002/95/CE, 2002/96/CE e 2003/108/CE, relative alla riduzione dell'uso di sostanze pericolose nelle apparecchiature elettriche ed elettroniche, nonché allo smaltimento dei rifiuti”



Il simbolo del cassonetto barrato riportato sull'apparecchiatura o sulla sua confezione indica che il prodotto alla fine della propria vita utile deve essere raccolto separatamente dagli altri rifiuti.

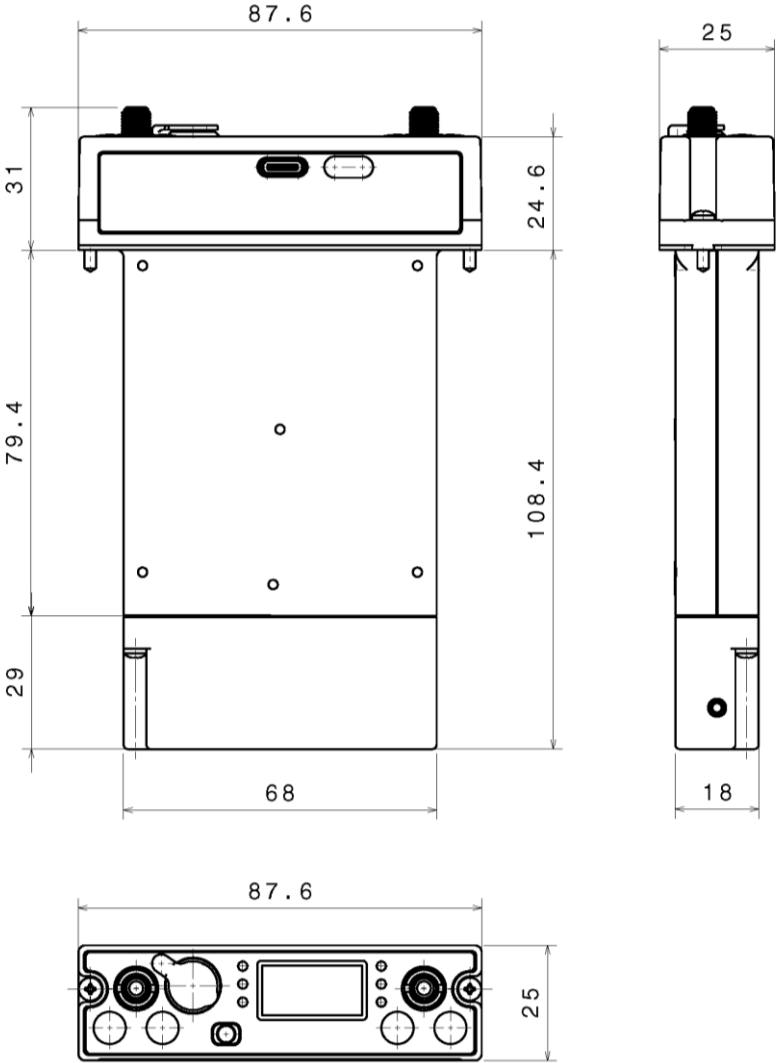
La raccolta differenziata della presente apparecchiatura giunta a fine vita e' organizzata e gestita dal produttore. L'utente che vorrà disfarsi della presente apparecchiatura dovrà quindi contattare il produttore e seguire il sistema che questo ha adottato per consentire la raccolta separata dell'apparecchiatura giunta a fine vita.

L'adeguata raccolta differenziata per l'avvio successivo dell'apparecchiatura dismessa al riciclaggio, al trattamento e allo smaltimento ambientalmente compatibile contribuisce ad evitare possibili effetti negativi sull'ambiente e sulla salute e favorisce il reimpiego e/o riciclo dei materiali di cui è composta l'apparecchiatura

Lo smaltimento abusivo del prodotto da parte del detentore comporta l'applicazione delle sanzioni amministrative previste dalla normativa vigente.

Iscrizione al Registro A.E.E. n. IT09100000006319

DRAWING



TECHNICAL SPECIFICATIONS

Frequency ranges	MCR54 B1: 470 ÷ 800 + 961÷1000 + 1045÷1075 MHz (UK) MCR54 B2: 470 ÷ 800 + 823÷832 + 940÷960 MHz (USA/EU) MCR54 B3: 470 ÷ 800 + 806÷809 + 1240÷1260 MHz (JP)
Switchable channels	2400 user programmable frequencies, organized in 40 groups of 60 channels
Switching-window	up 790 MHz
Frequencies	microprocessor controlled frequency synthesizer circuit, with 5 kHz minimum step. The frequencies can be easily PC reprogrammed with USB C, Bluetooth 5 (long range) or optional UPKmini Programming
Frequency error	< ± 2.5 ppm, in the rated temperature range
Modulation	FM mono, wideband or narrowband IFB (SW selectable)
Peak deviation	±54 kHz (wideband), ± 40 kHz (narrowband)
Antenna input impedance	50 ohm sma type (SWR < 1:2; typ. 1:1.4)
Sensitivity	2 µV (6 dBµV), for SND/N > 58 dB; 5 µV (14 dBµV), for SND/N > 98 dB in the whole switching-window*
Amplitude response	< 0.5 dB (for RF input signal:6 dBµV ÷ 100 dBµV)
Adjacent chan. selectivity	> 80 dB typical (for channel spacing ≥ 400 kHz)
Spurious emissions	< 2 nW (typical = 0.1 pW)
Noise Reduction system	ENR / ENR-1.2 (Wisycm Extended-NR) , noise optimized ENC / ENC-1.2 (Wisycm Extended-NC), voice optimized & with reduced pre-emphasis ENS (for live application) Others, compatible with most systems, thru an internal DSP emulation of SA572, SA575 and Rms envelope compander chip set, fully user programmable
AF bandwidth	30 Hz ÷ 20 kHz (wideband), 30 Hz ÷ 15 kHz (narrowband)
Frequency response	± 0.5 dB in the 30 Hz ÷ 19 kHz range (wideband), ± 0.5 dB in the 30 Hz ÷ 13 kHz (narrowband)
Distortion	0.3 % typical
SND/D ratio (Analog)	120 dB typical* (100 dB for MCR54-DUAL)
SND/D ratio (Digital)	> 125 dB typical
Audio output	Electronically balanced on 5 pin mini-XLR Female connector analog or digital (SW selectable)
Digital sample rate	AES3 @ 48 kHz
Monitor output	headphone 3.5 mm jack socket
Managing interface	USB C, Bluetooth 5 (long range) or optional UPKmini Programming
LEDs	2 multicolour RGB LEDs to easy indicates Power & Bluetooth 4 multicolour RGB LEDs to easy indicates the audio status of the 4 RX (2 for MCR54-DUAL)
Display	OLED 128x64 (white)
Powering	- External = 5 ÷ 18 Vdc (2.5 W max) - Autonomous. = with optional BCA 54 Battery Module
Power consumption	2.5 Watt max (with 4 active receivers) for MCR54 1,85 Watt max (with 2 active receivers), 1,5 Watt max (with 1 active receiver) for MCR54-DUAL
Temperature range	-10 ÷ +55 °C
Dimensions	110,4 x 87,6 x 25 mm (H x W x D)
Weight	230g (MCR54), 285g (MCR54-DUAL)



EU DECLARATION OF CONFORMITY

We,

WISYCOM S.r.l.
via Tiepolo, 7/E
35019 Tombolo (PD) – Italy

declare under our sole responsibility that the product

Model
Description

MCR54-DUAL
Dual True Diversity Receiver

conforms to the essential requirements of the following European Directives and their associated norms:

Directive	Applicable Standards	Description
RADIO Directive 2014/53/EU (RED)	EN 300 422-1 v2.1.2	Wireless Microphones; Audio PMSE up to 3 GHz; Part 1: Class A Receivers; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU
EMC	EN 301 489-1 v1.9.2	“ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU and the essential requirements of article 6 of Directive 2014/30/EU
	EN 301 489-9 v2.1.1	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 9: Specific conditions for wireless microphones, similar Radio Frequency (RF) audio link equipment, cordless audio and in-ear monitoring devices; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU
Safety	EN 62368-1 2014	Audio/video, information and communication technology equipment — Part 1: Safety requirements (IEC 62368-1:2014, modified)
RoHS	EN IEC 63000:2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Date: 8 November 2022

Enzo Frigo, Technical Director


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We,

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via Tiepolo, 7/E

35019 Tombolo (PD) – Italy

declare under our sole responsibility that the product

Model

MCR54

Description

Quad True Diversity Receiver

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Directive	Applicable Standards	Description
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