WISYCOM
VOX INFRAGILIS

MTP60 User Manual

Wideband Wireless

Professional Pocket

Transmitter

SN: _____

Rev.01 (ref. FW 0.3)

Date: 22 October 2021

PRODUCT OVERVIEW

❶	OLED white display (128 x 64 pixels)	❽	IrDa interface
❷	4 setup buttons	❾	LED3 of recording
❸	battery compartment latch	❿	LED4 of recharging
❹	MIC connector (LEMO 1pin)	⓫	battery compartment
❺	Antenna connector (LEMO 3pin)	⓬	SD card slot
❻	LED1 for audio and recording indication	⓭	USB-C connector (for power and control)
❼	LED2 for RF and battery indication		
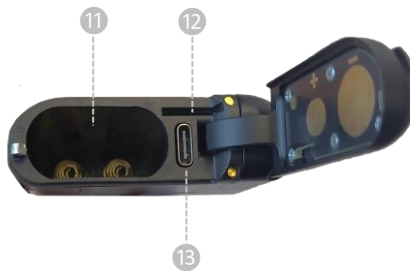
LED INDICATIONS

LED 1 - audio and recording indication

> **Fixed green** unit is modulating regularly
>
> **Blinking red** Flash when audio is clipping
>
> OFF (grey) if it doesn't modulate

LED 2 - RF and battery indication

> **Fixed red** with RF OFF
>
> **Fixed Green** with RF ON
>
> **Blinking red** when battery is discharging

LED 3 - recording

> OFF (grey) when recording is OFF
>
> **Fixed red** when recording is ON

LED 4 - recharging status

> OFF (grey) when no recharging
>
> **Blinking orange** when is under recharging
>
> **Fixed Green** when recharge is completed

SETUP CONTROL

Use the 4 front buttons to navigate on the menu and enable quick setup:

- SEL/ON:
    - to switch ON the transmitter
    - to enter on a sub-menu
    - to save the parameter
- EXIT/OFF:
    - to switch OFF the transmitter
    - to exit from a sub-menu
    - to switch ON the transmitter without audio modulation (only tone squelch)
- UP/GAIN:
    - to circle on the same level
    - to enter on the GAIN settings (from STATUS menu)
- DOWN/CH:
    - to circle on the same level
    - to enter on the CHANNEL settings (from STATUS menu)
- SEL+GAIN: to enter on the menu
- SEL+EXIT: to mute audio
- EXIT+CH: to lock transmitter
- GAIN+CH: to start recording

DISPLAY MENU

Setup menu are accessed in sequence:

PRESET	Active		Factory/...
	Load		-
	Save		U01- UNDEF/U02-...
	Factory		

RF	Frequency		Frequency/GR/CH
	Level		10/20/50/100
	Pwr on		ON/OFF
	Pwr profile		FCC IC

AUDIO	Gain		-26 to +36dB
	Ch.Mod.		Wide/Narrow
	Limiter		OFF/ON
	Mic Mode		2W/2W+B/3W/2W+P/2W+P+B/Music
	Tone		No Data/32798Hz/Ember/Multi
	PTT		Disable/Mute/ON
	Sig. Phase		0/180
	LPF		17 KHz/20 kHz
	HPF		FLAT/45/60/80/120/170/240
	Cal Tone	Cal Tone	OFF/ON
		Frequency	1000 Hz /400 Hz
		Level	-30 to 0 dB (1 dB step)

Recorder	REC		OFF/ON
	Mode		Rec+Tx
	Bit Depth		16/24/32 bit
	Time Code		

Settings	BT	Pwr	ON
	Name		Transmitter
	Irda		...
	Battery		Alkaline/NiMh/Lithium/Lick-8000
	Leds	Led Br.	from 1 to 5
		Style	Standard/Alarms/PTT
	Display	Brightness	from 1 to 5
		Low timeout	from 5 to 60 sec
		OFF timeout	from 10 to 120 sec (10 sec step) / OFF
		Direction	Normal/Inverted

Info	FW	Version	v0.3-rc8
		BL	v0.2
		DSP	vX.Y
	Serial		09900004
	Range		470-1075
	HW	Country	US
		Main rev.	00.00
		Main opt.	-
	Battery	Volt	3,79V
		Current	?
		Temp	31°C
	Model		MTP60
	Alarms		0

PRESET menu

MTP60 can recall configuration presets.

- o   "Factory" recalls the Wisycom factory configuration.
- o   "USER" (U01, U02…) recalls the configuration saved by menu
- o   "PRESET" recalls preset saved with the Wisycom Manager or pre-configured by Wisycom

TUNING > Frequency menu

In this menu current channel/group and frequencies can be setup.

The name of the group is shown on the top right of the display.

Sync group is a quick self-settable channel synchronized by receiver (with SYNC group, on the top right of the display is shown the name of the synchronized receiver).

Use arrows to change value and <**ENTER**> to confirm.

Using quick channel setup buttons (<**CH>**), it is possible to enter quickly in the tuning menu.

TUNING > Level menu

RF power can be setup to 20mW, 20mW Linear, 50mW or 100mW (depending on the Power profile, see TUNING>Pwr Profile menu).

TUNING > Pwr on

Set to ON to activate the transmission. LED2 becomes fixed green when the transmitter is tuned and RF power is ON.

AUDIO menu

With this menu it is possible to set all the audio parameters: gain, modulation (Narrowband or Wideband), type of microphone, audio filters and the Tone.

SETTINGS menu

Use this menu to

- o   activate the Bluetooth interface
- o   activate the Irda interface
- o   set type of battery used
- o   configure LEDs behaviour
- o   configure brightness and time of display

INFO menu

Use this menu to check information about the transmitter (serial number, frequency range, firmware and hardware version) and its status (voltage, temperature and alarms).

BATTERIES

MTP60 works with 2 x AA battery, Lithium, NiMh or KLIC8000 lithium (5.6 Wh) (select correct type on setup controls). Battery status can be checked on internal OLED display or looking the LED2 status on front ⑦ .
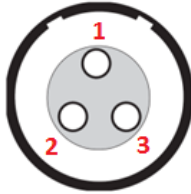
BATTERY SUBSTITUTION
Open transmitter cover and insert batteries following polarity indicated.
Attention: always replace both the batteries

AUDIO CONNECTOR

3 PIN LEMO CONNECTOR

(use FVB.00.003.NLN on Mic)

MIC Mode:	Pin out
'2 wires':	1=GND 3=AF
'2 wires + bias':	1=GND 3=AF+5.5V
'3 wires':	1=GND 2=5.5V 3=AF
'2 wires & phantom':	1=GND 2=3.1V (power for PHA48 and PHA60) 3=AF
'2 wires + bias & phantom':	1=GND 2=3. 1V (power for PHA48 and PHA60) 3=AF+5,5V

ACCESSORIES AND PARTS

AWF30-B1-507	**AWF30-B1-590**	**AWF30-B8-950**
For MTP60-US	For MTP60-US	For MTP60-US
Band 470 -547 MHz	Band 547 - 663 MHz	Band 940 -960 MHz
Antenna label 507	Antenna label 590	Antenna label 950

Antenna label

CAL48
Cable to connect an MTP30 (with option /PHA) or MTP40/40S to a PHA48 to use microphone with XL3/48V connection

CAL120
AF cable (120cm), LEMO 3pole / XLR-3F connectors

PHA48
Plug-on for XLR3 Mic with 48V Phantom power.
To be used with CAL48 (connected to an MTP30/40/40S)
NEW REV2 with 4mA Phantom current!

TECHNICAL SPECIFICATIONS

Frequency ranges	from 470 to 1075 Mhz, depends on the country (see Configurations)
Switchable channels	2400 managed in 40 groups ofr 60 frequencies completely user customizable
Switching-window	Up to 362 MHz, depending on band (see Configurations)
Frequencies	Quartz PLL frequency synthesizer circuit (25 kHz step)
Frequency error	±2.5 ppm, in the rated temperature range
RF Power	switchable typ. 20 mW/ L20 mW / 50 mW /100 mW note: in some countries high power can be disabled, for local norm!
Antenna connector	LEMO-F 1 pin
Modulation	wideband/narrowband FM, with digital audio conditioning (FPGA)
Nominal deviation	±40 kHz Wideband / ±25 kHz Narrowband
Peak deviation	±56 kHz Wideband / ±35 kHz Narrowband
Spurious emissions	< 2 nW
Telemetry feature	TX transmits also a digitally modulated sub-carrier, suitable for: • tone-squelch operating • remote battery monitoring • optional PTT (push to talk) operation
Noise Reduction system	ENS - Wisycom Extended-Sound Optimized
AF bandwidth in NarrowBand mode (NB)	Audio frequency response (dBa): • 45 Hz - 17 KHz (3dB)
AF bandwidth in WideBand mode (WB)	Audio frequency response (dBa): • 45 Hz - 20 KHz (3dB)
Distortion	< 0.3 % (0.15 % typ.)
SND/D ratio (Analogue)	typ. 115 dB (A)rms with 40 kHz deviation; typ. 121 dB (A)rms with 56 kHz deviation Wideband typ. 115 dB (A)rms with 25 kHz deviation; typ. 121 dB (A)rms with 35 kHz deviation Narrowband
Audio input connector	LEMO 3pin
Audio input level	from -36 dBu (12mV RMS) to 26 dBu (15.5 V RMS) adjustable in 1 dB steps
Max input level	+26 dBu (15.5 V) at clipping, +20 dBu (7.75 V) at nominal level
Managing interface	Bluetooth 5 long range, USB-C, IrDA
LED	2 RGB LEDs indication with (red, green and blue) LED 1 — LED 2: • Green unit is modulating regularly — • Fixed Red with RF OFF • Red Flash when clipping — • Fixed Green with RF ON • OFF (grey) if it doesn't modulate — • Blinking RED when battery is dicharging • Fixed RED when recordin in ON
Battery lifetime indication	10 steps
PTT function	Pin 3 of the AF connector can be setup to an external push button
Display	High contrast OLED white display (128 x 64 pixels)
Power supply	2 x AA battery, KLIC8000 lithium (5.6 Wh) or NiMh
Power consumption	250mA@ 2.6V average (display off, 100mW power)
Temperature range	-10 - +55 °C
Dimensions	75,7mm x 61,4mm x 19mm (HxWxD) without clip
Weight	Approx. 91 g. without batteries (133 g. with batt.)

CONFIGURATIONS

COUNTRY RANGE

EU	470-832 MHz, Max power 50mW
EUX	470-832 MHz, Max power 100mW
UK1	470-663 MHz, Max power 100mW + 960-1075 MHz, Max power 50mW
UK2	510-698 MHz, Max power 100mW + 960-1075 MHz, Max power 50mW

COUNTRY RANGE

| US | 470-608 MHz, Max power 100mW + 614-663 MHz, Max power 20mW + 940-960 MHz, Max power 100mW |
| CA | 470-608 MHz, Max power 100mW + 614-663 MHz, Max power 20mW + 940-960 MHz, Max power 100mW |

Compliance

Model	In Compliance with	Max Power	Country
MTP60-EU	EN 301 489-1/-9 EN 600065 EN 300 422-1/-2	50mW	Europe CE
MTP60-EUX	EN 301 489-1/-9 EN 600065 EN 300 422-1/-2 EN 300 454-1/-2	100mW*[1]	Europe CE
MTP60-US	FC PART 74 & PART 15 FCC-ID: **POUMTP60**	100mW	USA
MTP60-CA	**RSS-123, RSS-102** IC: **11967A-MTP60**	100mW	Canada

*[1] MTP60-EUX is not an SRD device, thus it requires specific authorization by your local frequency authority!

⚠ *Before putting the device into operation, please observe the respective country-specific regulations!*

MANUFACTURER DECLARATIONS

In compliance with the following requirements

- RoHS Directive (2002/95/EC)

- WEEE Directive (2002/96/EC)
  Please dispose of the diversity transmitter at the end of its operational lifetime by taking it to your local collection point or recycling center for such equipment

- Battery Directive (2006/66/EC)
  The supplier batteries or rechargeable batteries can be recycled. Please dispose of them as special waste or return them to your specialist dealer. In order to protect the environment, only dispose of exhausted batteries.

ITALY ONLY

Obblighi di informazione agli utilizzatori
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"
Smaltimento di apparecchiature elettriche ed elettroniche di tipo professionale

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 è 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 ambientale 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.
Smaltimento batterie usate

Questo prodotto può contenere batterie. Questo simbolo apposto sulle batterie significa che non possono essere smaltite insieme a normali rifiuti domestici, bensì devono essere depositate negli appositi punti di raccolta delle batterie.

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

Statements regarding FCC and Industry Canada

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.

WARNING: Wisycom srl. is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. such modifications could void the user's authority to operate the equipment.

The FCC and IC identifier is visible in the display when the device is switched on and it is also available by accessing the *Options> Info> Regulatory* submenus.

EN
This device complies with Industry Canada license-exempt RSS-123 and RSS-210 standard. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

This radio transmitter IC: **11967A-MTP60** has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

FR

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence RSS-123 et RSS-210. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Le présent émetteur radio IC: **11967A-MTP60** a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Antenna types (50 Ohm impedance, max gain 2.1dBi)
AWF30-B1-507: band 470 - 547 MHz
AWF30-B1-590: band 547 - 663 MHz
AWF30-B8-950: band 940 - 960 MHz

This equipment complies has been evaluated for and shown compliant with the FCC and ISED RF Exposure limits. The unit of measurement for RF exposure is Specific Absorption Rate (SAR). The FCC SAR limits for is 1.6W/Kg per 1g of tissue

The maximum SAR levels tested has been shown to be 1.2 W/kg at head with 0mm of separation distance from the body.

This device operates on a no-interference, no-protection basis. Should the user seek to obtain protection from other radio services operating in the same TV bands, a radio license is required. For further details, consult Innovation, Science and Economic development Canada's Client Procedures Circular CPC-2-1-28, **Voluntary Licensing of License-Exempt Wireless Microphones in TV Bands.**

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 technician are enabled 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.

DECLARATION OF CONFORMITY

WISYCΦM

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

Description	**MTP60**
Model	**Wireless Bodypack Transmitter**

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 v2.1.1	"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)
Human Exposure	EN 62311:2020	Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz — 300 GHz)
RoHS	EN IEC 63000:2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Date: 22 September 2021

Franco Maestrelli, Managing director

WISYCΦM s.r.l.
Via Tiepolo, 7/E - 35019 TOMBOLO (PD)
Tel. + 39 0424 382/03 \fax +39 0424 382733
sales@wisycom.com \www.wisycom.com
P. IVA (VAT) / C.F. IT 02765640244

WISYCOM
VOX INFRAGILIS