

# IC-7300 + MSHV

## Setting up for DXpedition

By Francesco Fucelli IK0XBX



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Most Dxpedition use IC-7300:

small radio with ATU - HF+50Mhz - 100W, and only a good shielded USB cable needed to connect it to PC for CAT, digital modes, CW, record audio QSOs.

Most Dxpedition use, for FT8-FT4, MSHV:

Good interface, good traffic automation, excellent sensitivity

Read following pages to know the best way (for me) to connect IC-7300 and MSHV to optimize results in DXpedition



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Read your IC-7300 manual

<https://www.icomjapan.com/support/manual/2272/>

Read drives installation guide

<https://www.icomjapan.com/support/manual/1768/>

Download last driver

[https://www.icomjapan.com/support/firmware\\_driver/1974/](https://www.icomjapan.com/support/firmware_driver/1974/)

Read Tips for USB Ports Settings

<https://www.icomjapan.com/support/manual/2574/>

**DON'T CONNECT YOUR IC-7300 TO YOUR PC BEFORE DRIVER INSTALLATION!!!!**

Only when you installed correctly, with admin privileges, all driver to your PC you can connect your IC-7300 to your PC only with good shielded USB cables !!



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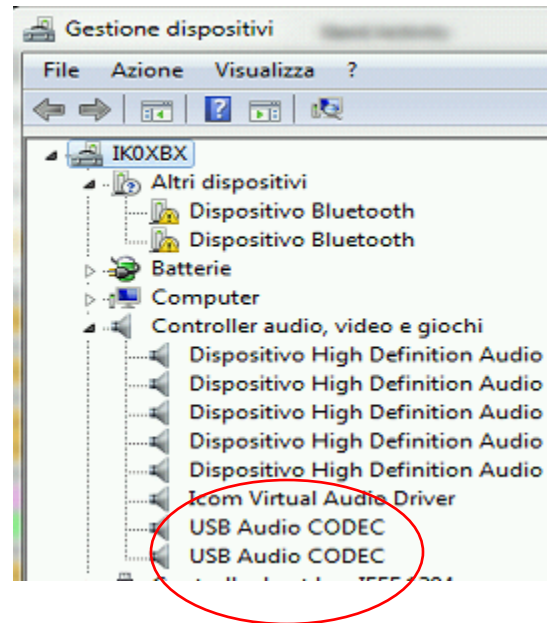
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With driver installed and radio connected via USB in your device resources you will find a new audio card: «USB Audio CODEC».

This is the only audio card you have to use in your MSHV both in input and output.

Please note that if you start MSHV with radio disconnected from PC you loose configuration and next time you need to change MSHV settings with «USB Audio CODEC»



In my PC i have 2 USB Audio CODEC because i have connected both IC-7300 & IC-7610, **if you'll have only 1 IC-7300 you have only 1 USB Audio CODEC**



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in your device resources you will find a new COM port, this is the IC-7300 COM port, identified by “Silicon Labs CP210x USB to UART Bridge”.

This is the ONLY COM port you have to use to communicate with your radio!



COM10 is IC-7300 COM Port



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# Is time to configure your IC-7300 !!!!



Press «MENU» key



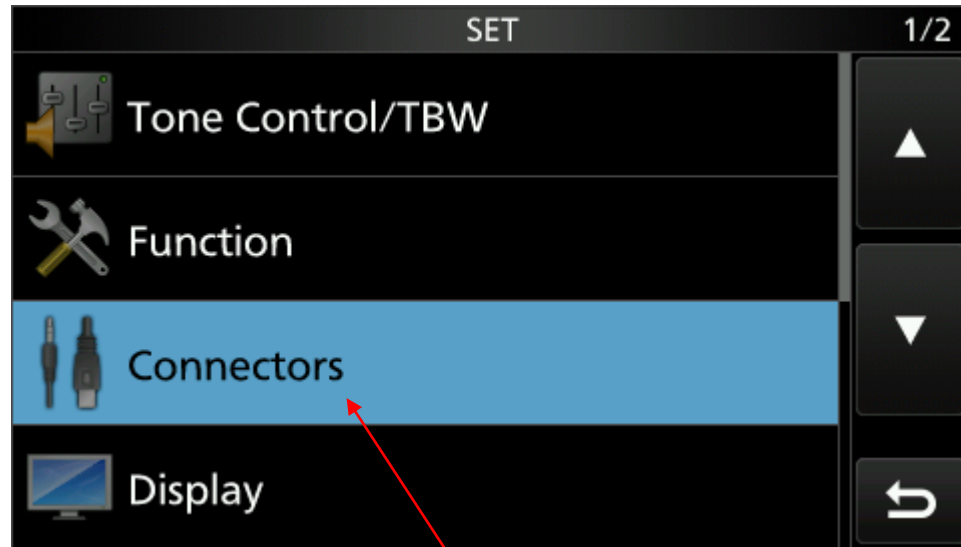
Press «SET»



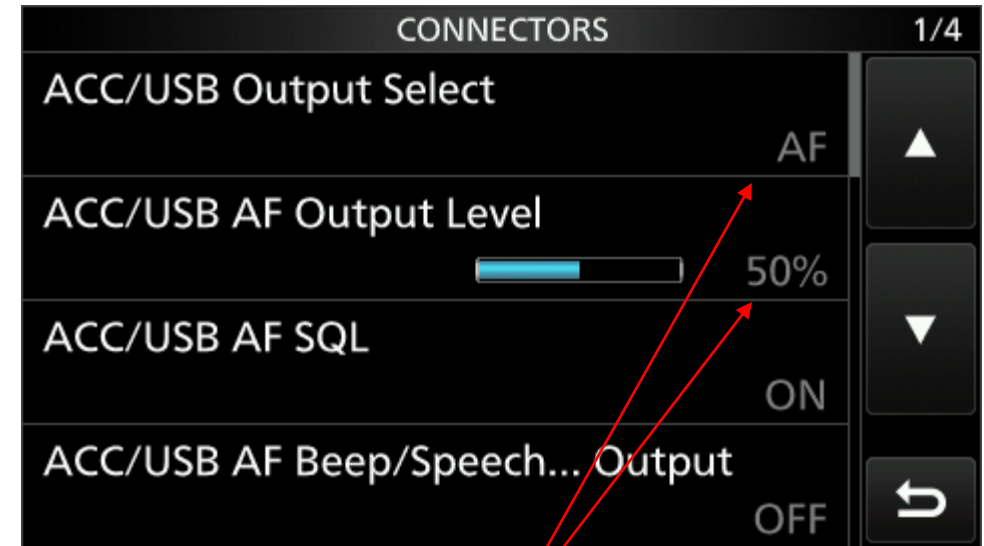
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# Is time to configure your IC-7300 !!!!



Press «Connectors» in page 1/2



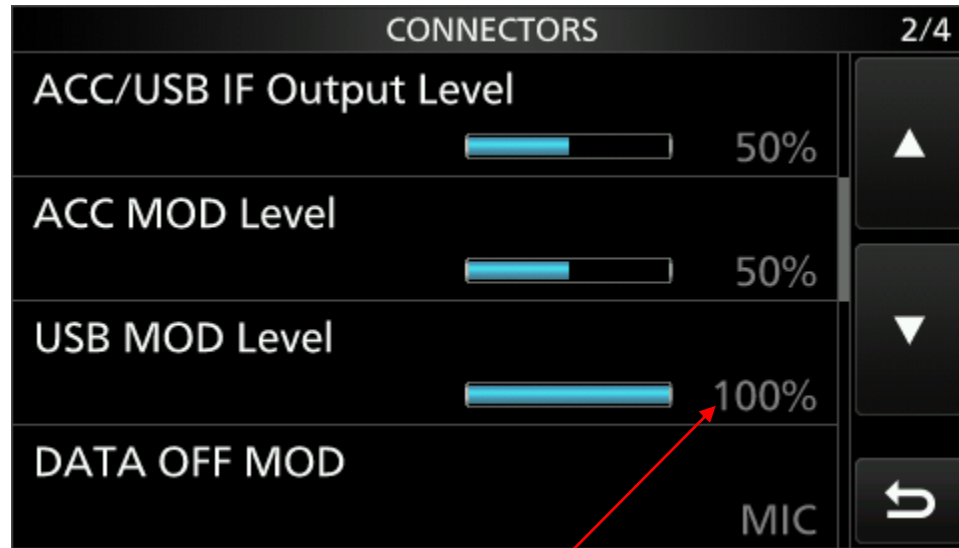
CONNECTORS Page 1/4  
Set first two rows as for this image  
Others row don't care for MSHV



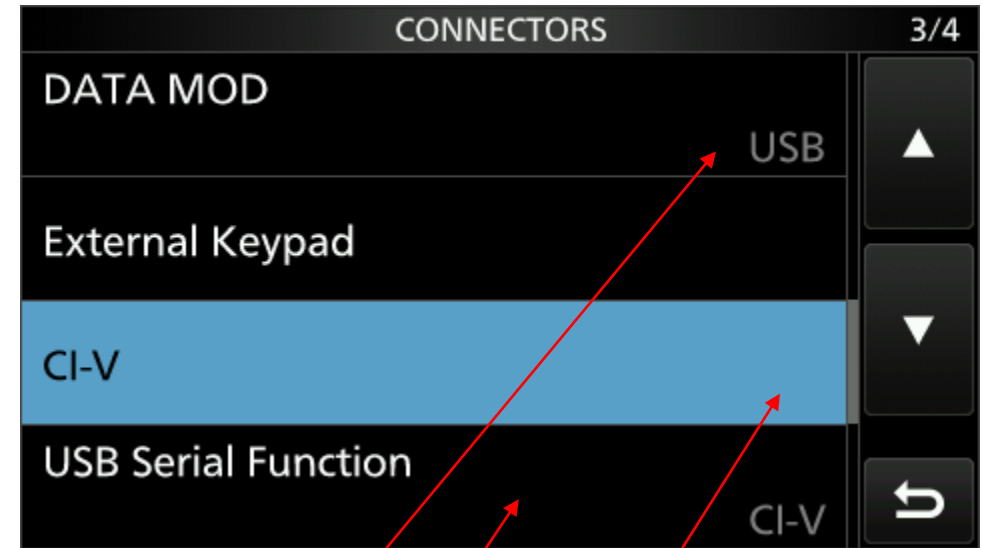
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# Is time to configure your IC-7300 !!!!



CONNECTORS Page 2/4  
Set 3rd rows as for this image  
Others row don't care for MSHV

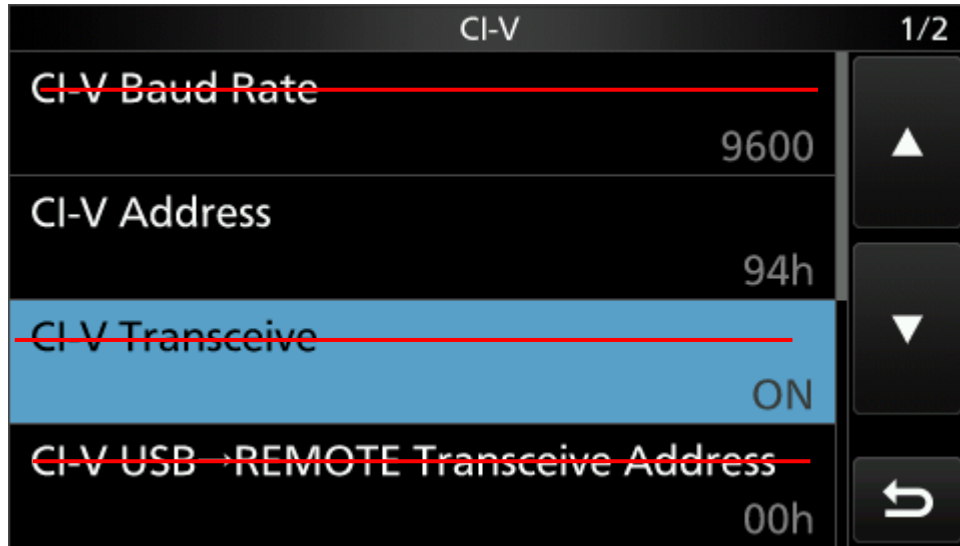


CONNECTORS Page 3/4  
Set 1st and 4th rows as for this image  
then press on «CI-V»



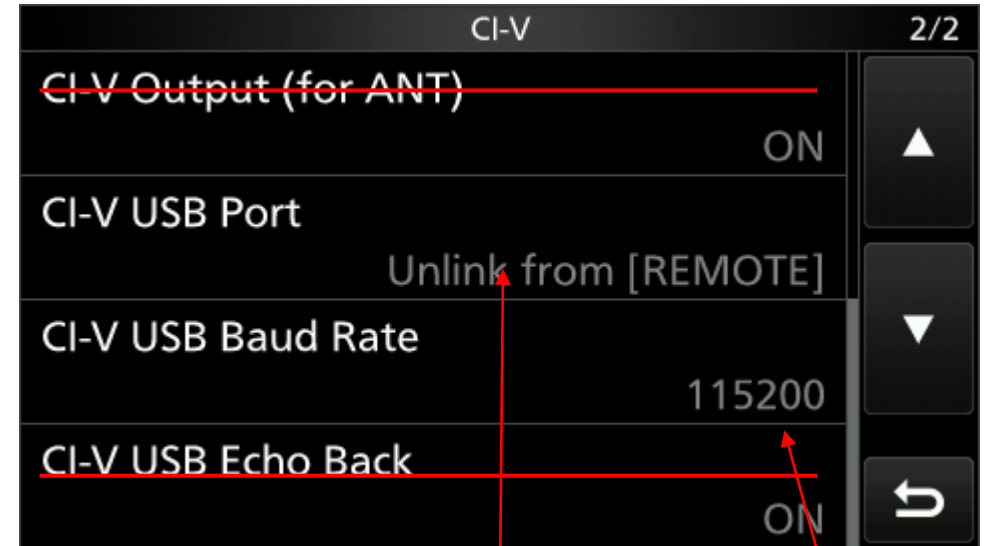


# Is time to configure your IC-7300 !!!!



CI-V Page 1/2

ALL Setting in this page are USELESS for MSHV via USB cable !!!!  
Only CI-V Address should be leaved 94h as default



CI-V Page 2/2

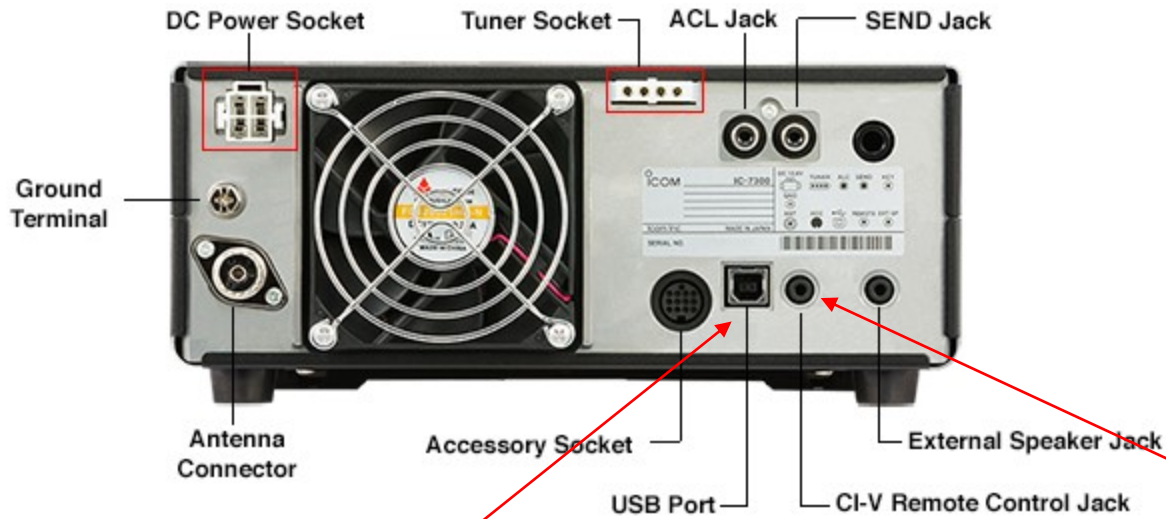
Set CI-V USB Port as «Unlink from REMOTE»  
Set desired communication speed in «CI-V USB Baud Rate»  
Same speed should be set on MSHV



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# Is time to configure your IC-7300 !!!!



Thus, Icom strongly recommends the setting of "Unlink to [REMOTE]" in cases other than those above. By using "Unlink to [REMOTE]," you can operate the USB port with a speed of up to 115,200 bps.

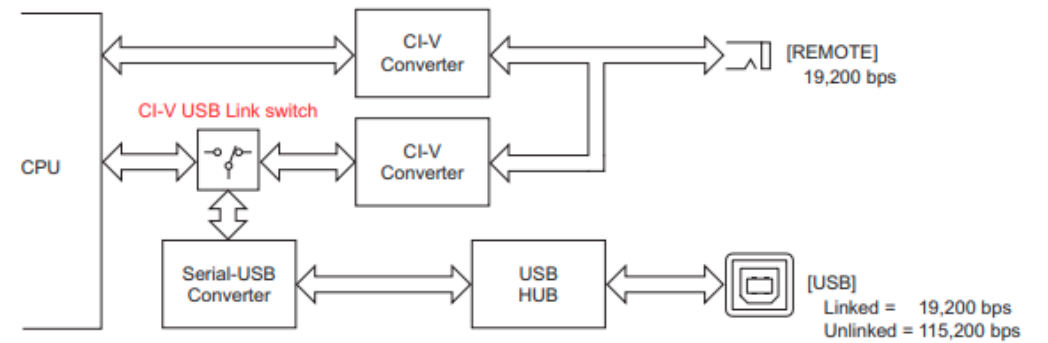


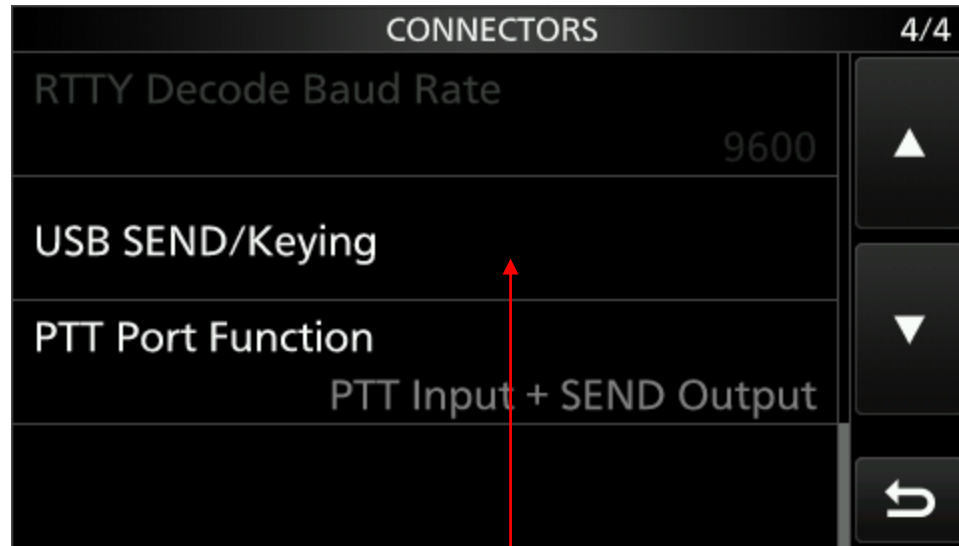
Figure 2-3 USB port and [REMOTE]

Just to clarify that Setting CI-V USB Port as «Unlink from REMOTE» separate CIV from «Remote Control Jack» and «USB Port».

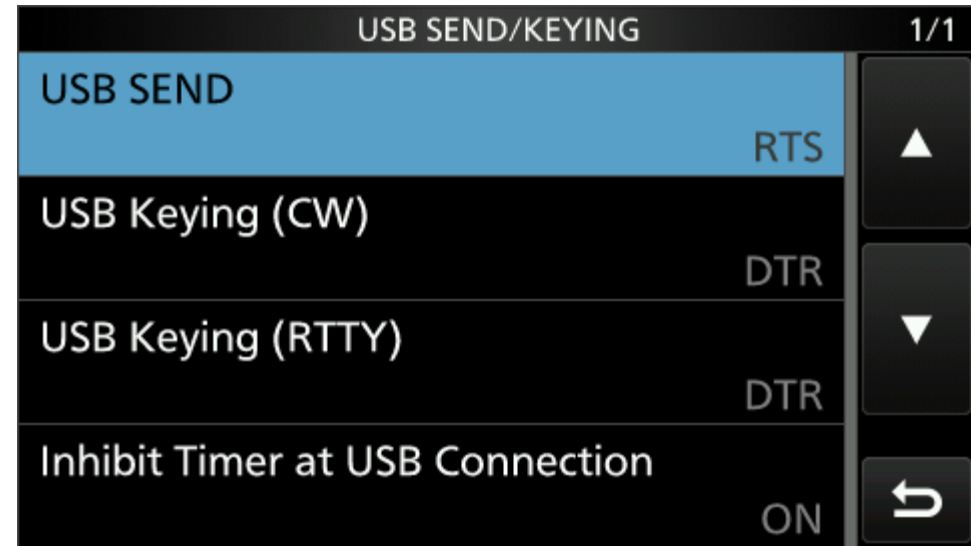
**We use «USB Port» don't care speed setted on menù «CI-V Baud Rate» but use only the speed setted on menù «CI-V USB Baud Rate»**



# Is time to configure your IC-7300 !!!!



Go back to CONNECTORS Page 4/4  
Press USB SEND/Keying



USB SEND/KEYING Page 1/1  
Set all as above



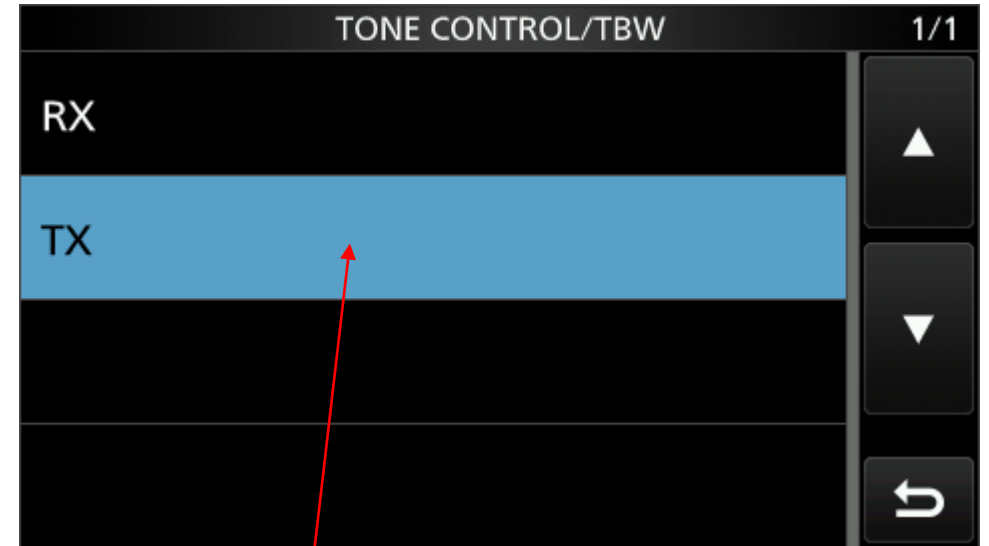
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# Is time to configure your IC-7300 !!!!



Go back to MAIN MENU and press «Tone Control/TBW»



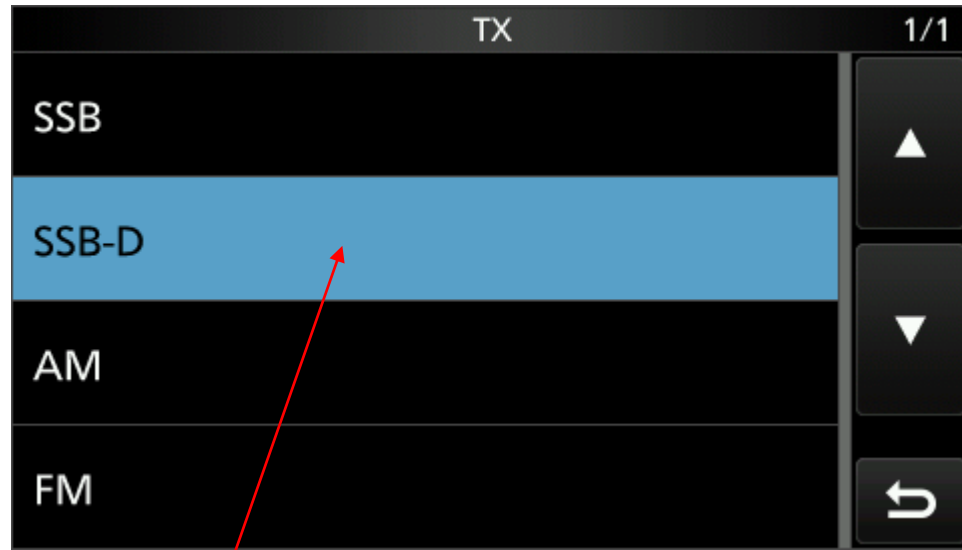
Tone Control/TBW Page 1/1  
Press on «TX»



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# Is time to configure your IC-7300 !!!!



TX Page 1/1  
Press on «SSB-D»



SSB-D Page 1/1  
Set as in the picture, this allow to transmit clean signals  
from 100Hz to 2.900 Hz with flat filter



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# Your IC-7300 is ready to go on air!!!!

Now your IC-7300 is ready to work with MSHV but also with all others software, either with loggings software capable to transmit CW and RTTY.

This is the parameters of your IC-7300 connected to your PC:

- COM Port as for identified in your PC Device menu (in this example «COM10»)
- Audio input & output is USB Audio CODEC
- RTS is PTT pin in COM Port
- DTR is CW & RTTY pin in COM Port
- Radio Address as for default 94h

**PLEASE DON'T FORGET THAT IF YOU START YOUR MSHV, JTDX, WSJT-X, ecc. SOFTWARE WITH DISCONNECTED OR TURNED OFF RADIO YOU WILL LOOSE ALL AUDIO CONFIGURATION IN YOUR SOFTWARE AND YOU SHOULD CHECK IT !!!!**



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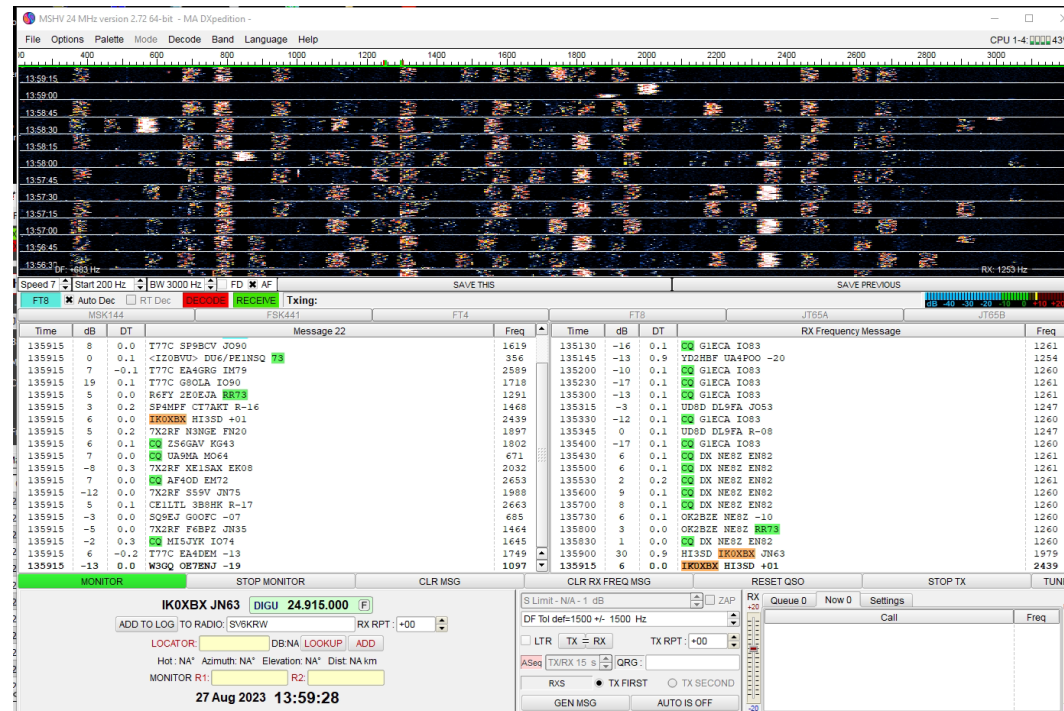


# Download and install MSHV

Download last MSHV release from official web site <http://lz2hv.org/node/10>

Install MSHV in your PC

Now start to configure it ....



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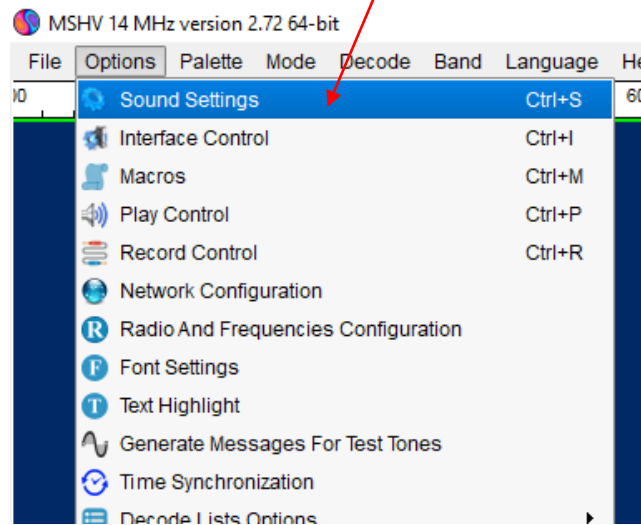
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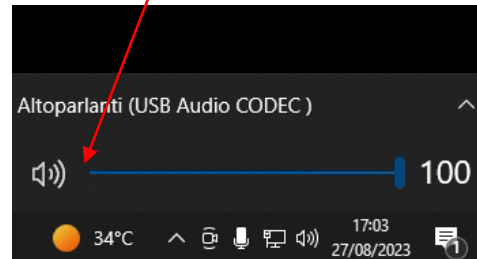


# Configure your MSHV

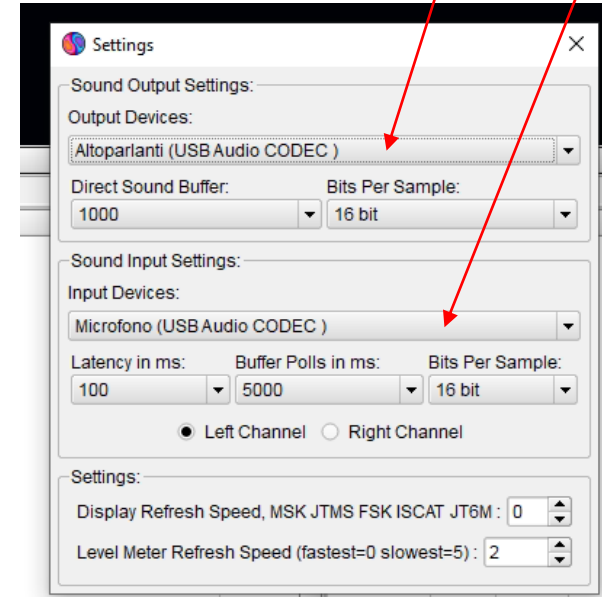
Open «Options» – «Sound Settings» menu



Check in window bar that your Output USB Audio Codec is «unmuted» and with maximum volume



Select «USB Audio CODEC» in Output & Input Devices



**PLEASE DON'T FORGET THAT IF YOU START YOUR MSHV, JTDX, WSJT-X, ecc. SOFTWARE WITH DISCONNECTED OR TURNED OFF RADIO YOU WILL LOOSE ALL AUDIO CONFIGURATION IN YOUR SOFTWARE AND YOU SHOULD CHECK IT !!!**



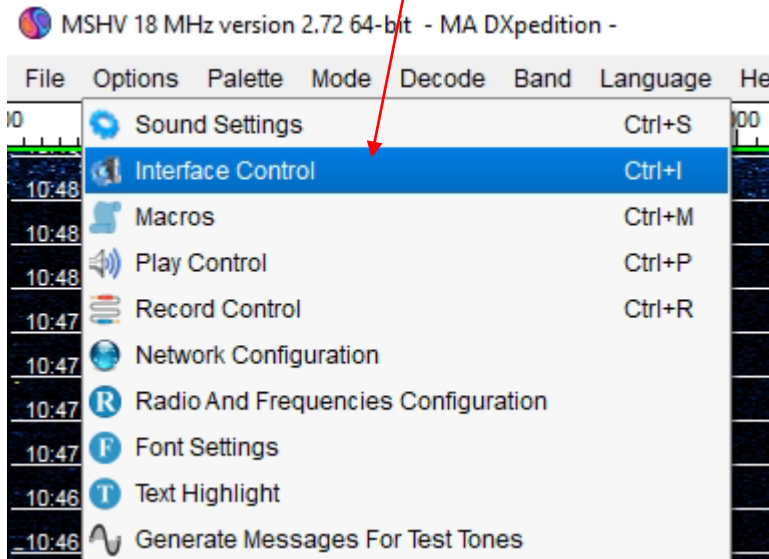
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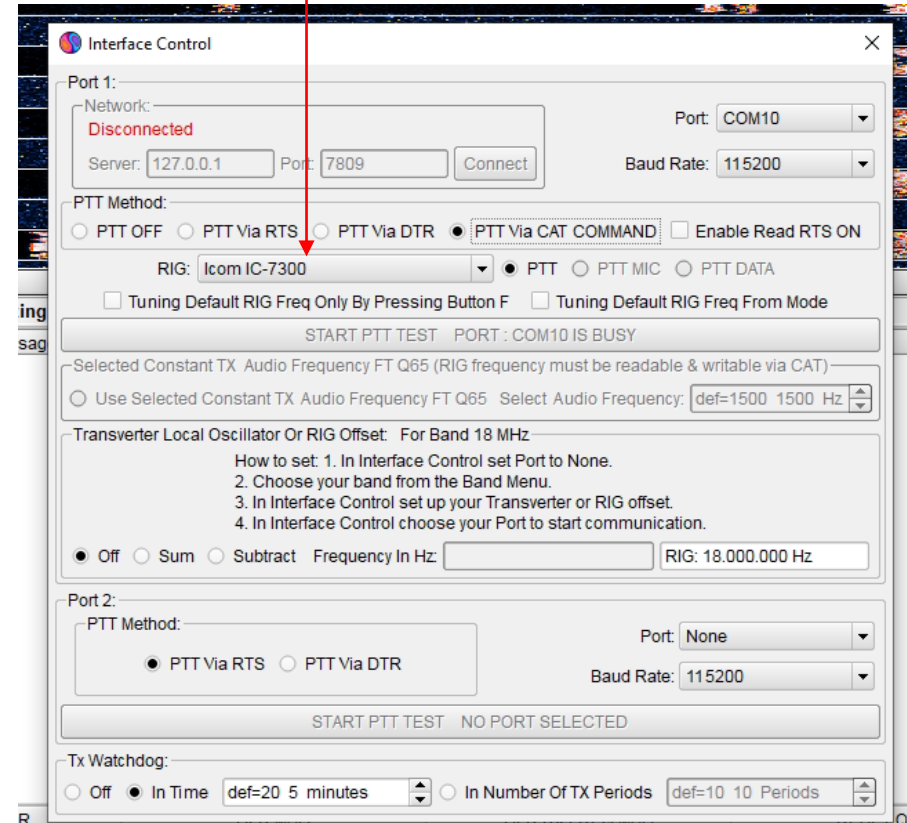


# Configure your MSHV

Open «Options» – «Interface Control» menu



Select IC-7300 as below



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# Configure your MSHV

Select RIG: Icom IC-7300

Select your IC-7300 COM port (COM10 in this example)

Port 1:  
Network: **Disconnected**  
Server: 127.0.0.1 Port: 7809 Connect  
Port: COM10  
Baud Rate: 115200  
PTT Method:  
 PTT OFF  PTT Via RTS  PTT Via DTR  PTT Via CAT COMMAND  Enable Read RTS ON  
RIG: Icom IC-7300  PTT  PTT MIC  PTT DATA  
 Tuning Default RIG Freq Only By Pressing Button F  Tuning Default RIG Freq From Mode

Select your IC-7300 COM speed same as you set in the radio

Set PTT Via RTS or PTT Via CAT COMMAND

CI-V 2/2  
CI-V Output (for ANT) ON ▲  
CI-V USB Port Unlink from [REMOTE]  
CI-V USB Baud Rate 115200 ▼  
CI-V USB Echo Back ON ↻



# Configure your MSHV

Set Transverte OFF  
(if you operate HF)

Selected Constant TX Audio Frequency FT Q65 (RIG frequency must be readable & writable via CAT)

Use Selected Constant TX Audio Frequency FT Q65 Select Audio Frequency: def=1500 1500 Hz

Transverter Local Oscillator Or RIG Offset: For Band 18 MHz

How to set: 1. In Interface Control set Port to None.  
2. Choose your band from the Band Menu.  
3. In Interface Control set up your Transverter or RIG offset.  
4. In Interface Control choose your Port to start communication.

Off  Sum  Subtract Frequency In Hz: RIG: 18.000.000 Hz

Port 2:

PTT Method:  PTT Via RTS  PTT Via DTR

Port: None

Baud Rate: 115200

START PTT TEST NO PORT SELECTED

Tx Watchdog:

Off  In Time def=20 5 minutes  In Number Of TX Periods def=10 10 Periods

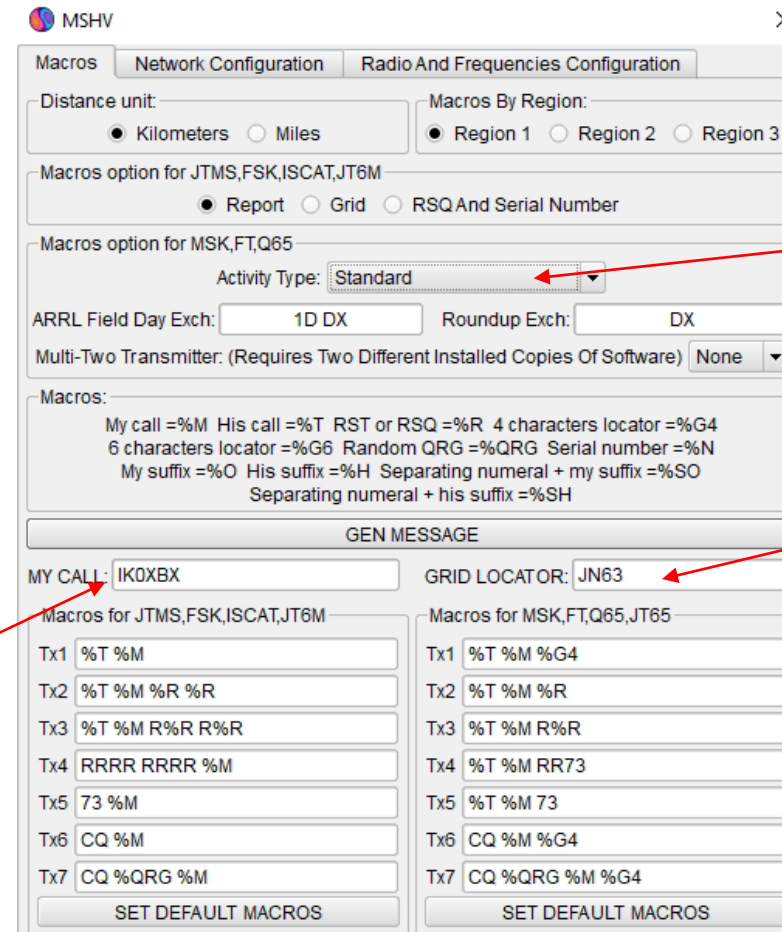
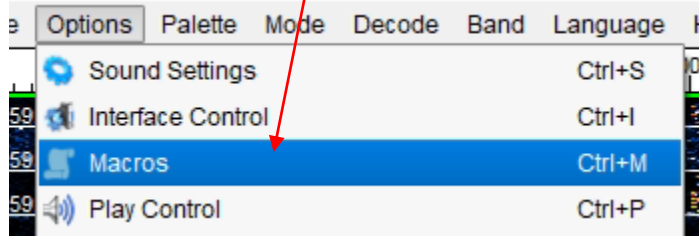
Select Port 2 to NONE

Set TX Watchdog in 5 minutes



# Configure your MSHV

Open menu «Options» – «Macros»



Set Activity Type Standard

Set your GRID

Set your CALL



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# Configure your MSHV

Open menu «Options» – «Macros» - «Network Configuration»

If you have flat Internet connection click on «Enable **PSK Reporter Spotting**» this can be useful to hunters to check if they are received by you

If you want to upload real time your qso on **clublog.org livestreams** you need just to put your email and password here and Enable

The screenshot shows the 'Network Configuration' tab in the MSHV software. It contains several sections with various settings and status indicators:

- PSK Reporter Settings:**  Enable PSK Reporter Spotting,  Use TCP/UDP Protocol. Status: Connected to report.pskreporter.info:4739 Via UDP. Server: report.pskreporter.info, Port: 4739. Reconnect button.
- DX-Spot Settings:** Status: Connected to db0sue.de and logged in as IK0XBX. Server: db0sue.de, Port: 8000. Press To Disconnect button.
- Telnet Clusters:** 4z5lz-2,cqplanet.com:7300
- UDP Broadcast Settings:**  Enable Logged QSO,  Enable Logged QSO ADIF,  Enable Decoded Text. Status: UDP Broadcast Is Disabled And Disconnected. Server: 127.0.0.1, Port: 13238. Reconnect button.
- Simplified UDP Broadcast:**  Enable Logged QSO ADIF. Server: 127.0.0.1, Port: 2233.
- TCP Broadcast Settings:** - DXKeeper Formatted Message - Server: 127.0.0.1, Port: 52001,  Enable Logged QSO.
- Club Log Real-Time Upload Logged QSO:** Server: clublog.org, Port: 443, Post: realtime.php, putlogs.php. E-Mail: xbx@gmail.com, Password: \*\*\*\*\* (masked), Callsign: IK0XBX,  Enable.
- QRZ Logbook Real-Time Upload Logged QSO:** Server: logbook.qrz.com, Port: 443, Post: api. API Key: (empty),  Enable.

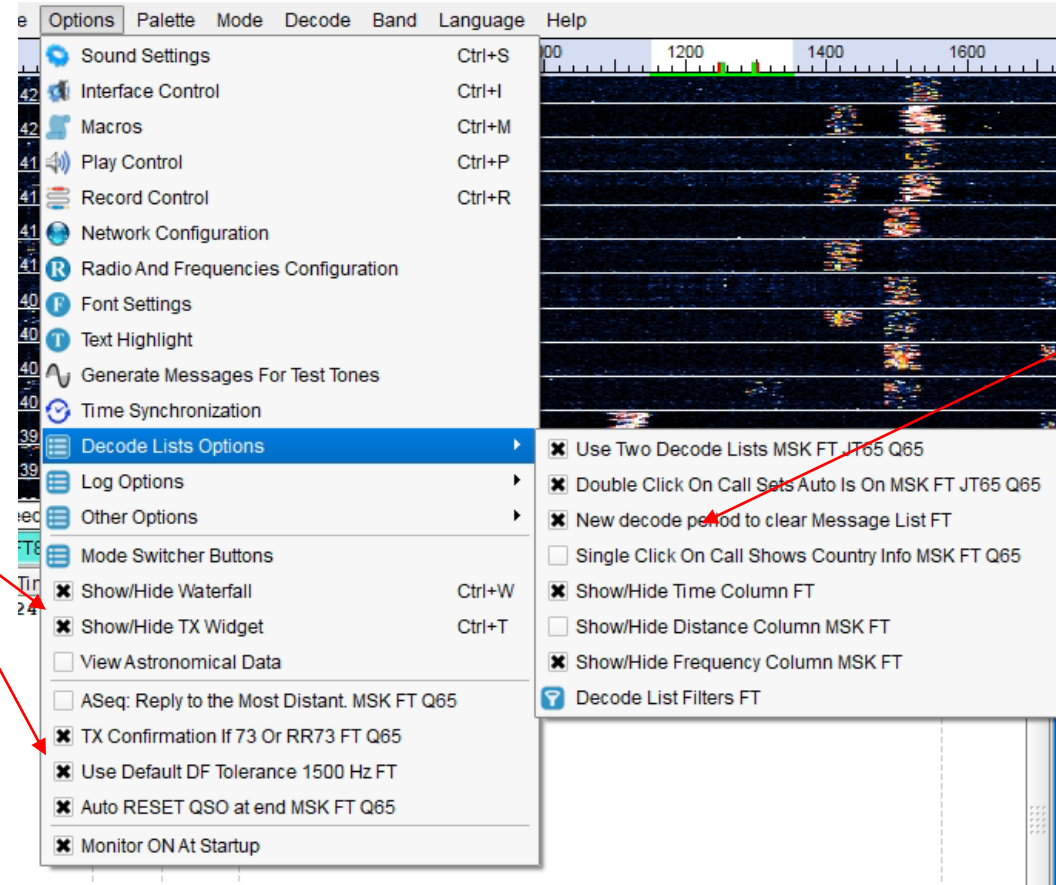
You can abilitate **UDB Broadcast** to send logged qso to your main log

If you want to upload real time your qso on **qrz.com** you need just to put your **QRZ.COM** API key here and Enable



# Configure your MSHV

Open menu «Options» – «Decode Lists Options»



Set flag on «Options» menu as for this image if you have it different

Set flag as for this image if you have it different

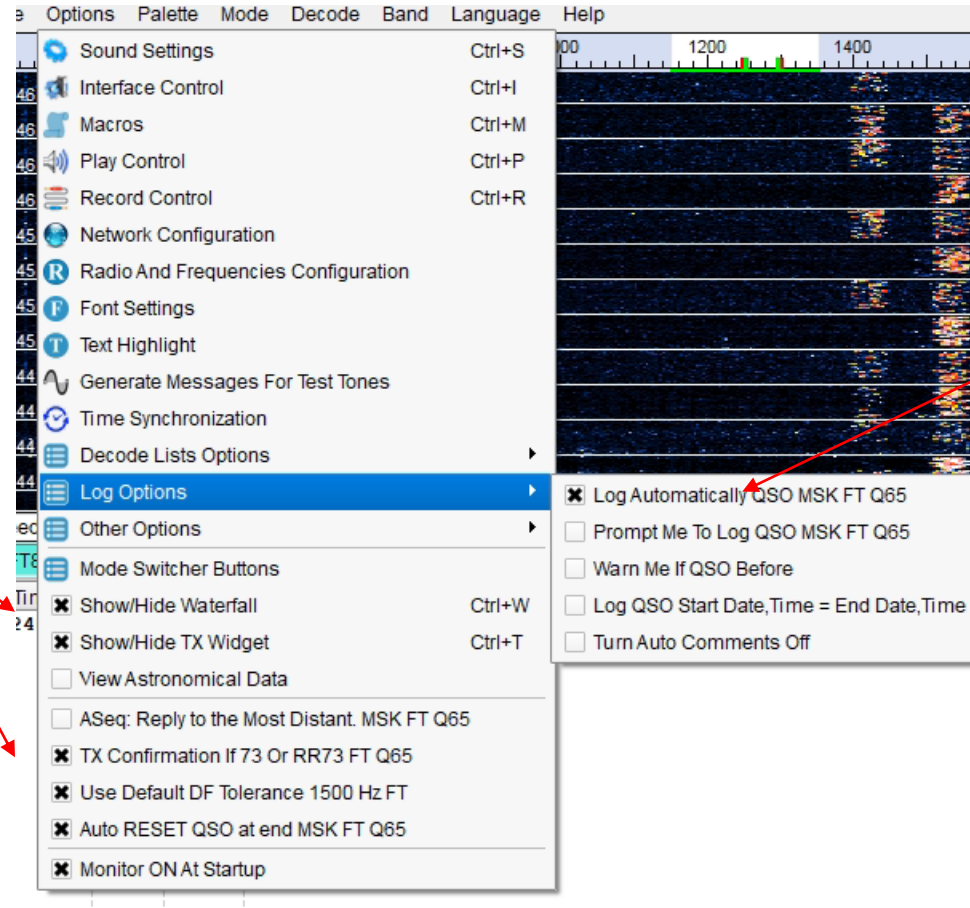


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# Configure your MSHV

Open menu «Options» – «Log Options»



Set flag on «Options» menu as for this image if you have it different

Set flag as for this image if you have it different



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# Configure your MSHV

Open menu «Options» – «Others Options»

Set flag on «Options» menu as for this image if you have it different

Sound Settings Ctrl+S  
Interface Control Ctrl+I  
Macros Ctrl+M  
Play Control Ctrl+P  
Record Control Ctrl+R  
Network Configuration  
Radio And Frequencies Configuration  
Font Settings  
Text Highlight  
Generate Messages For Test Tones  
Time Synchronization  
Decode Lists Options  
Log Options  
**Other Options**  
Mode Switcher Buttons  
 Show/Hide Waterfall Ctrl+W  
 Show/Hide TX Widget Ctrl+T  
 View Astronomical Data  
 ASeq: Reply to the Most Distant. MSK FT Q65  
 TX Confirmation If 73 Or RR73 FT Q65  
 Use Default DF Tolerance 1500 Hz FT  
 Auto RESET QSO at end MSK FT Q65  
 Monitor ON At Startup  
 Skip Tx1 MSK FT Q65 (Uncheck for DXpedition)  
 Use Queue (For Contest Activities Only) MSK FT Q65  
 Recognize Period JTMS FSK ISCAT JT6M  
 Recognize Period MSK FT JT65 Q65  
 View JT65 DF Axis On Display  
 Turn Off JT65 Display Markers  
 Turn On Mouse Markers FT Q65  
 Turn On RX Markers FT Q65  
 Turn On TX Markers FT Q65  
 Multi Answering Auto Seq Protocol DXpedition FT Q65 Ctrl+\*  
 Multi Answering Auto Seq Protocol Standard FT Q65 Ctrl+Q

Set flag as for this image if you have it different

**Flag this, is fundamental for DX station!!!**

Hunters stations should deflag it





# Configure your MSHV

Open «Settings» on bottom right menu of main window

In this window you can see all stations calling in your filter bandpass

The screenshot displays the MSHV software interface. At the top is a waterfall plot showing frequency over time. Below it is a list of stations with columns for Time, dB, DT, and Message. The bottom section contains a control panel with various settings, including a 'Settings' button and a 'Max Time' dropdown menu set to 1 min.

Time	dB	DT	Message	Freq
125245	6	0.0	E51D EA3W JN01	1619
125245	8	0.0	E51D UK8IF M439	1066
125245	23	0.1	E51D MM0SAJ IO86	1220
125245	6	0.1	E51D DL9MRF J052	2502
125245	22	0.0	E51D SV8OVH KM27	2395
125245	-4	0.0	E51D SM2VSD JF93	1554
125245	-8	0.1	E51D WSWI R-18	421
125245	4	0.0	E51D 4Z5LX KM71	1118
125245	-10	0.0	E51D IK6OIN JN72	2026
125245	-8	-0.6	E51D OM2DX JN88	2310
125245	7	0.2	E51D 4Z1TL KM72	1178

In this window you can see all message in your RX (60 Hz channel) window, identified by green bar on waterfall and all send messages by you.

Open Settings to set number of streams and other important parameters

This is the time you call a station without answer from him. 1 min. is enough if you have pileup! Don't waste time, other stations are calling you!



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# Configure your MSHV

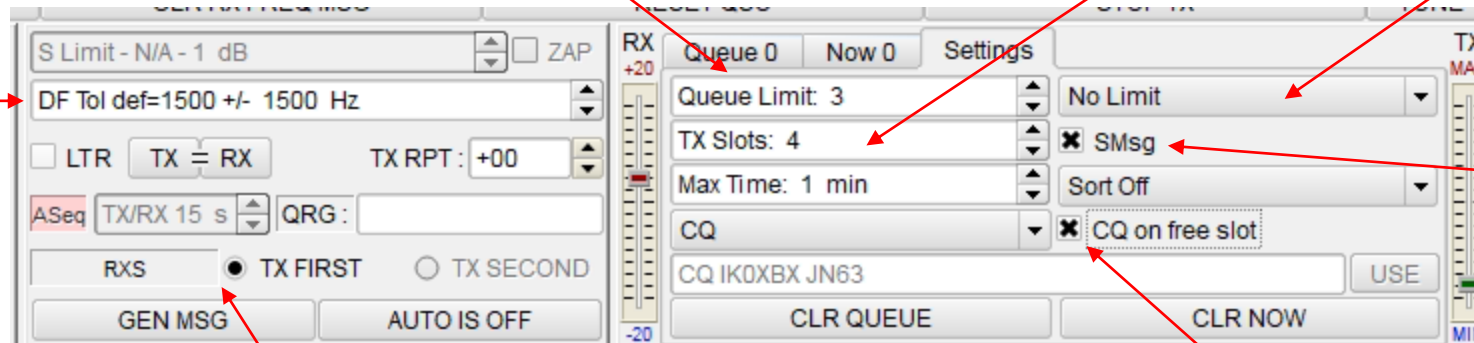
Open «Settings» on bottom right menu of main window

Select this box as on the picture to have larger RX window and to decode as many stations as possible between 0Hz and 3000Hz

Set number of stations in queue, usually same number or little more than TX Slot number is best for huge pileup

Set number of slots for answering, this work only in not standard frequency, in standard frequency the number of slots will be reset to 1

If you don't want to work dupes select a value on this box



Check always «TX FIRST» to respect Dxpediton standard

SMsg flagged is best when you have huge pileup, you can use same frequency to answer to a new station and to send RR73 to the one you put in the log

Flag this to call CQ on free slot when you have an empty queue



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# Configure your MSHV

Set with this control RX level to -10 to +10 range in upper colored bar to avoid audio card intermodulation

The screenshot shows the MSHV software interface. At the top, there is a 'SAVE PREVIOUS' button and a dB scale from -40 to +20. Below this is a table of RX Frequency Messages. At the bottom, there are two vertical sliders: 'RX' on the left and 'TX' on the right. Red arrows point from the text on either side to these sliders.

RX Frequency Message	Freq
.O83	1261
.P00 -20	1254
.O83	1260
.O83	1261
.O83	1261
.J053	1247
.O83	1260
.R-08	1247
.O83	1260
.EN82	1261
.EN82	1261
.EN82	1261
.EN82	1260
.EN82	1260
.Z -10	1260
.Z RR73	1260
.EN82	1260
.BX JN63	1979
.SD +01	2439

Set with this control TX audio level to have in IC-7300 ALC right level near to 0 to avoid audio TX intermodulations



# MSHV «Multistream» DX side

DF: +852 Hz

Speed 7 Start 200 Hz BW 3000 Hz FD \* AF

FT8 \* Auto Dec RT Dec DECODE RECEIVE Txing: 2 Slot Messages

Time	dB	DT	Message	Freq
121815	13	-0.7	DD6AJ IZONPM JN61	1159
121815	18	0.3	DL8CKL JO64	1827
121815	14	0.1	OZ2PJ IK0AOC RR73	2691
121815	9	0.1	IIOPEG IK0CHU +31	1299
121815	2	0.1	II5GRO SP2ERZ +10	673
121815	10	0.2	II1ALB SP9DHY R+14	523
121815	16	0.2	SP9ADG IK5RMX R+00	1595
121815	7	0.1	IK0AOC DL7VAI JO62	1744
121815	2	0.1	DF9ES DL2ROB -17	1424
121815	3	0.1	II1ALB SP9TBT JO90	1460
121815	-13	0.1	SP9JCN JO90	1033
121815	-7	0.1	II4BRI LA9DAA JO48	735
121815	-17	0.1	YL2LW KO26	2064
121815	-4	0.1	SV2HJW SP8AWL KO11	1640
121815	-16	0.6	IU0AFW SP1TJ -18	467
121815	-19	0.1	IIOPEG SP5NOF R-08	2120
121815	-8	0.1	G4VPD SP9LCW 73	1269
121815	-13	0.4	IIOPEG SP5MNT R-14	1871

Time	dB	DT	RX Frequency Message	Freq
121700			SP1TJ IIOPEG -13	1155
121715	14	-0.7	DD6AJ IZONPM JN61	1159
121715	8	0.1	IIOPEG IK0CHU +31	1299
121715	-8	0.7	IIOPEG SP1TJ R-18	465
121715	-17	0.2	IIOPEG SP5NOF KO02	2118
121730			SP1TJ RR73; SP5NOF <IIOPEG> -18	1155
121715	-15	0.4	IIOPEG SP5MNT KO02	1868
121745	13	-0.7	DD6AJ IZONPM JN61	1460
121745	8	0.1	IIOPEG IK0CHU -31	1298
121745	-13	0.1	IIOPEG SP5NOF KO02	2119
121745	-18	0.6	IIOPEG SP1TJ 73	466
121745	-10	0.4	IIOPEG SP5MNT KO02	1869
121800			SP5NOF IIOPEG -13	1155
121800			SP5MNT IIOPEG -10	1215
121815	13	-0.7	DD6AJ IZONPM JN61	1159
121815	9	0.1	IIOPEG IK0CHU +31	1299
121815	-19	0.1	IIOPEG SP5NOF R-08	2120
121830			SP5NOF RR73; IK0CHU <IIOPEG> +08	1155
121830			SP5MNT IIOPEG -10	1215
121815	-13	0.4	IIOPEG SP5MNT R-14	1871

MONITOR STOP MONITOR CLR MSG CLR RX FREQ MSG RESET QSO STOP TX

IIOPEG JN63 DIGU 50.313.000 F

ADD TO LOG TO RADIO: YB4GBF RX RPT: +00

LOCATOR: DB:NA LOOKUP ADD

Hot: NA\* Azimuth: NA\* Elevation: NA\* Dist: NA km

MONITOR R1: R2:

25 Apr 2023 12:18:35

S Limit - N/A - 1 dB ZAP

DF Tbl def=1500 +/- 1500 Hz

LTR TX = RX TX RPT: +00

ASeq TX/RX 15 s QRG: 500

RXS TX FIRST TX SECOND

GEN MSG AUTO IS ON

12:17:45  
SP5MNT call IIOPEG at 1868 Hz  
SP5NOF call IIOPEG at 2119 Hz

12:18:00  
IIOPEG answer to SP5NOF at 1155 Hz and  
to SP5MNT at 1215 Hz (60 Hz up)

12:18:15  
SP5NOF send his report to IIOPEG at  
2120 HZ  
SP5MNT not received by IIOPEG covered  
by IZONPM at 1159 Hz

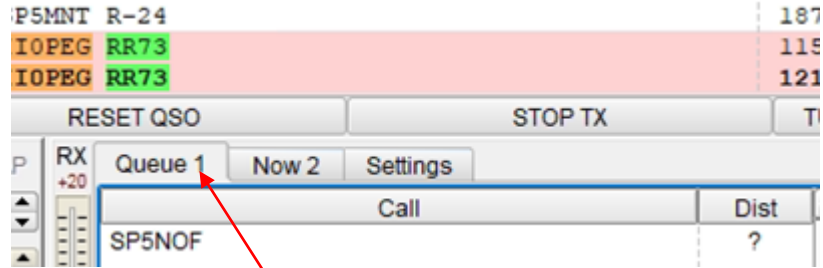
12:18:30  
IIOPEG at 1155 Hz send his 73 to SP5NOF  
and answer to IK0CHU (SMsg activated)  
Sending again report to SP5MNT at  
1215 HZ



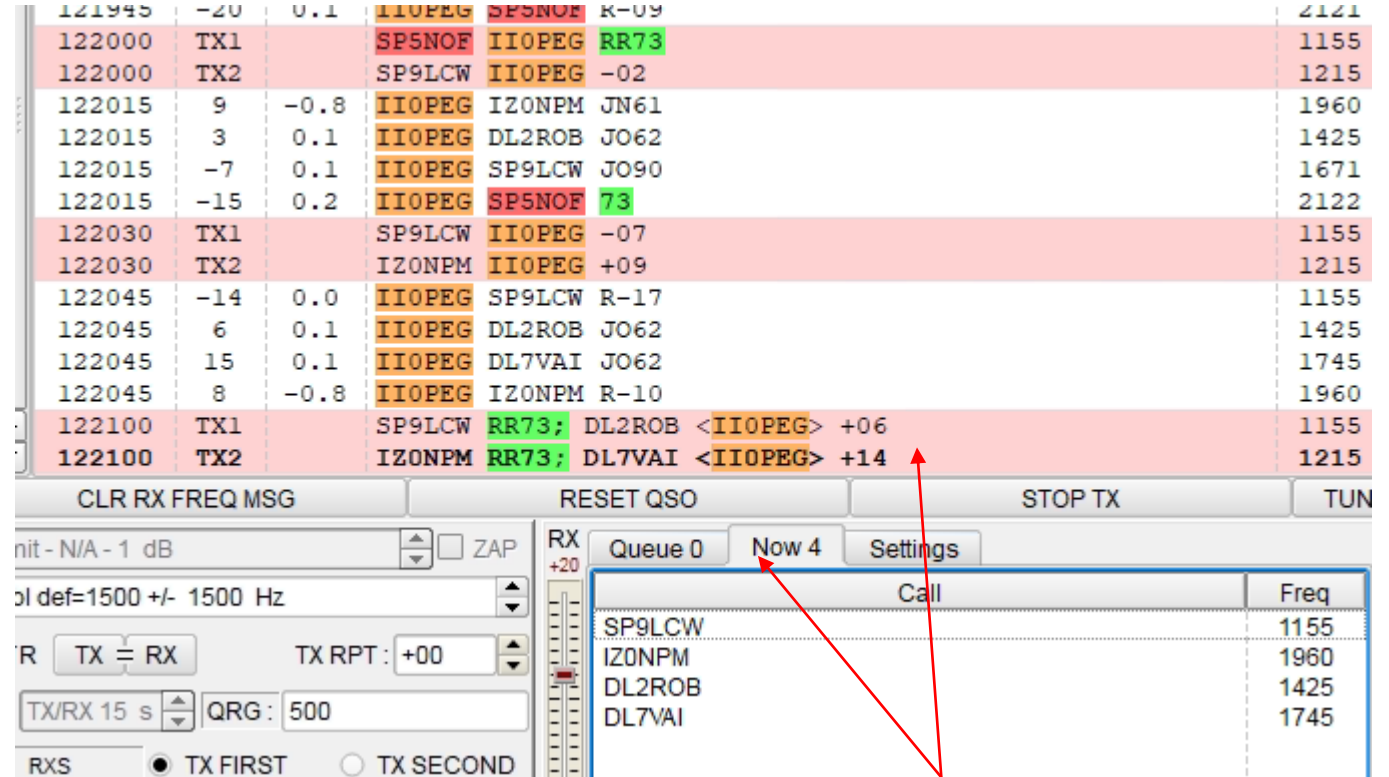
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# MSHV «Multistream» DX side



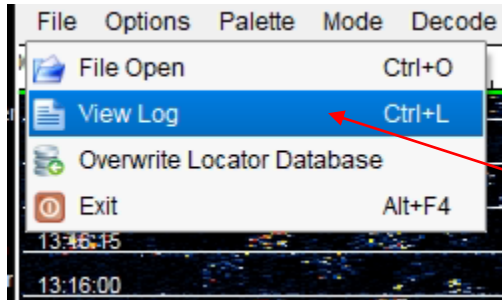
Queue 1 mean that we have 1 stations waiting for an FT8 contact with us (maximum number settend on settings)



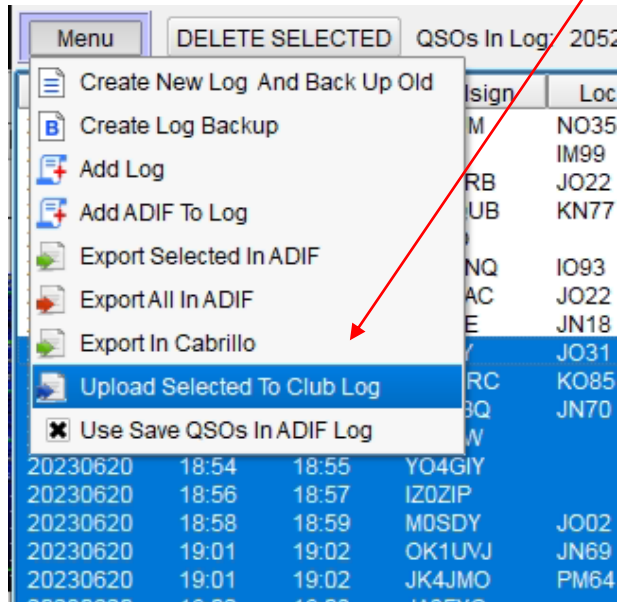
«Now 4» mean that we are answering simultaneously to 4 stations, this is maximum number of slots settend + number of RR73 sent id SMsg is flagged



# MSHV «Multistream» DX side



Opening «File» - «View Log»  
You open all log of contact made.  
If you select contact and click on  
«Menu» you can export qso or  
upload it to Clublog, if you  
enabled this function, to  
synchronyze it



The screenshot shows the 'Log MSHV version 2.72 64-bit' window. The 'Menu' is open, and the 'DELETE SELECTED' button is highlighted. The log table contains the following data:

Date	Start	End	Callsign	Locator	TXRpt	RXRpt	Distance	Mode	Band	Freq kHz	Pro
20230620	17:27	17:28	RK9UM	NO35	+00	-07	5242	FT4	14 MHz	14.080	
20230620	18:38	18:39	EB5R	IM99	+04	+06	1247	FT8	10 MHz	10.136	
20230620	18:38	18:39	PA0QRB	JO22	-05	+00	1163	FT8	10 MHz	10.136	
20230620	18:40	18:41	US5QUB	KN77	+08	-02	1766	FT8	10 MHz	10.136	
20230620	18:42	18:43	R4QO		-09	-08		FT8	10 MHz	10.136	
20230620	18:45	18:46	GR0JNQ	IO93	-11	-02	1512	FT8	10 MHz	10.136	
20230620	18:47	18:48	PA3CAC	JO22	+04	+03	1163	FT8	10 MHz	10.136	
20230620	18:49	18:49	F5POE	JN18	-12	+02	951	FT8	10 MHz	10.136	
20230620	18:50	18:51	DJ7XY	JO31	+08	+12	997	FT8	10 MHz	10.136	
20230620	18:50	18:51	RX3DRD	KO85	-03	+00	2170	FT8	10 MHz	10.136	
20230620	18:51	18:52	IU8NBQ	JN70	-18	-14	372	FT8	10 MHz	10.136	
20230620	18:53	18:54	A65CW		-16	-17		FT8	10 MHz	10.136	
20230620	18:54	18:55	YO4GIY		+10	-01		FT8	10 MHz	10.136	
20230620	18:56	18:57	IZ0ZIP		-05	-12		FT8	10 MHz	10.136	
20230620	18:58	18:59	M0SDY	JO02	-14	+04	1338	FT8	10 MHz	10.136	
20230620	19:01	19:02	OK1UVJ	JN69	-07	-05	667	FT8	10 MHz	10.136	
20230620	19:01	19:02	JK4JMO	PM64	-22	-17	9434	FT8	10 MHz	10.136	
20230620	19:02	19:03	JA3FYC		-01	-10		FT8	10 MHz	10.136	
20230620	19:17	19:17	SP9EVL	K000	+00	-10	986	FT8	10 MHz	10.136	
20230620	19:18	19:18	SP9EVL	K000	+00	-10	986	FT8	10 MHz	10.136	
20230620	19:32	19:33	UA3NFG	LO28	-02	-04	2751	FT8	10 MHz	10.136	
20230620	19:35	19:36	G0THY	IO91	-20	-09	1374	FT8	10 MHz	10.136	
20230620	19:42	19:42	JE2PMC		-05	-08		FT8	10 MHz	10.136	
20230620	19:42	19:43	RA2FU		-03			FT8	10 MHz	10.136	
20230620	19:44	19:45	RA2FU		-03			FT8	10 MHz	10.136	



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I am Francesco IK0XBX on air since 1994

I love DX

DXCC HR (335/340) – 10 Band DXCC – 2735 Challenger – 10 Band WAZ – 160 WAZ – 6 WAZ – 9 band WAS – 160 WAS – WAS TRIPLE PLAY

Member of A.R.I. since 1994 – President of A.R.I. Perugia since 2020 – Member of A.R.I. Contest Committee – Field Day HF IARU Reg.1 for Italy since 2006 – Member of Coordination Group of Italian Contest Club – Member of Mediterraneo DX Club.

I love Contest, antenna and station accessories project and building, i am active from 160 meters to QO-100 operating ALL modes without prejudices and difficults, in my LOTW i have over 300.000 qso in total: 122K in SSB, 93K in CW, 55K in FT8/FT4 and 32K in RTTY

I operate from IO0A, IQ0PG, IO5O, IO5HQ, IIOPEG, IIOWRTC, IB0/IK0XBX, IH9/IK0XBX, IS0/IK0XBX, EI/IK0XBX, EJ/IK0XBX, YO/IK0XBX, TK/IK0XBX ...

You can find me in every Dxpeditons Pileup and in most Contest !

73 de Francesco IK0XBX

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