How to connect and use WFView and the Icom 705 to do digital modes wireless (via WIFI).

Version 1.01

In the context of this document, Wireless = Wifi = WLAN.

No Bluetooth is used or mentioned. Virtual audio cable, free and paid version can be just and should be installed already.

Tested on Icom 705 version 1.26

- 1. How to setup your IC-705 to act like a WIFI Access Point, and connect your PC to it. (point to point)
- 2. How to setup your IC-705 to connect to your WIFI (or hotspot)
- 3. Use WFView via virtual comport?
- 4. Use WFView via rigctld (easier)?
- 5. How to configure JTDX with use of the virtual comport?
- 6. How to configure JTDX with use of rigctld to have IC-705 access?

Links to all software on last page.

1. How to setup your IC-705 to act like a WIFI Access Point, and connect your PC to it.

In this mode, the IC-705 will act like an Access Point and broadcast a SSID for a client to connect to.

This means, point to point. The PC you use will only be able to communicate with the IC-705 not with other devices in the network.

You will need to configure the name of the SSID and the password and encryption type in the IC-705.

After you have configured the SSID ,the SSID password and encryption type, you also need to add a username and password to get access to the radio controls.

Power the IC-705 on and press Menu

Then choose "SET"



Then with the down arrow go to the third (3/3) menu.



Now select "WLAN Set"

WLAN SET	1/2
WLAN ON	
Connection Type	
Station (Connect to Network)	
Connection Settings (Station)	▼
Network Name	IJ

And then select "WLAN" and set it to ON. After that press the exit button and power off the IC-705. It needs a restart to enable WLAN. So switch of the IC-705 and power it back on. When the IC-705 is powered on again, we continue, Press again, Menu, Settings, WLAN Set. Choose "Connection Type



Choose "Access Point (Connect to Phone, PC)" with this mode the IC-705 is acting like an Access Point.

CONNECTION SET	TTINGS (ACCESS POINT)	1/1
SSID		
	IC-705	
Password		

Inactivity WLAN OFF	Timer	▼
	20min	
IP Address		
	192.168.59.1	ŋ

The next step is to configure which SSID (WLAN) and password the IC-705 will used and broadcasted.

So in the above screenshot configure the "SSID" or leave it at IC-705, and configure your own password.

With this SSID and password, your PC can connect to the IC-705 as access point.

Next step is to setup an username and password to access the IC-705 from remote.

This username and password will be used by WFView to get access to the IC-705.

Go back to the menu "WLAN Set"

SET	• 3/3
Bluetooth Set	
🛜 WLAN Set	
sD SD Card	
etc. Others	ŋ
WLAN SET	1/2
WLAN SET	1/2
WLAN SET ON	1/2
WLAN SET ON Connection Type	▲ 1/2
WLAN SET WLAN ON Connection Type Station (Connect to Network)	■ 1/2
WLAN SET WLAN ON Connection Type Station (Connect to Network) Connection Settings (Station)	1/2▲

Then go to page 2/2, It will show "Remote Settings"

WLAN SET	2/2
Remote Settings	
	▼
	ŋ

Click on "Remote Settings"



Then first you need to allow (enable) remote access to the IC-705, change "Network Control" to ON.

The restart you can do when we finished all steps.

Then go to page 2/2, and select "Network User1"



Then configure at "Network User1 ID" the username you want to use to remote control the IC-705 and with "Network User1 Password" fill in a password. Write them down as you need them later with WFView again.



Next step is to redirect, that the Audio of the IC-705 goes via WLAN instead of MIC, USB.

For this go from the main menu, back to SET and select



Select "Connectors"

CONNECTORS	2/3
MOD Input	
SEND Output	
USB SEND/Keying	
External Keypad	U

Then select " Mod Input"



Then select "DATA MOD" and change it to WLAN.

Now power off the IC-705 and power it back on.

You have now the IC-705 configured to access it via Wifi.

One more setting needs to be done to enable transmit via CAT / remote control.

Press Menu, then Set, and go to the second screen, and click on Connectors.



Now go to menu 3/3 and click on CI-V.



Now change the CI-V Transceive to ON.



You can now continue with the WFView settings.

2. How to setup your IC-705 to connect to your WIFI (or hotspot) and connect your PC to it.

In this mode, the IC-705 connect to an Access Point as a wireless client. So your PC will connect to the IC-705 via your local wifi network.

You will need to configure enable WLAN, select the SSID WLAN you want to connect to and the password of that WLAN. Default it uses DHCP (automatic IP address).

The advantage is that you can use your PC still to the internet, and make sure your time sync is working for FT4/FT8.

In the field I use my mobile as hotspot.

MENU SCOPE AUDIO VOICE METER SWR MEMORY SCAN MPAD ECORD SET 1 2 2 5

Power the IC-705 on and press Menu

Then choose "SET"



Then with the down arrow go to the third (3/3) menu.



Now select "WLAN Set"



And then select "WLAN" and set it to ON.

After that press the exit button and power off the IC-705.

It needs a restart to enable WLAN.

When the IC-705 is power on again, we continue,

Press again, Menu, Settings, WLAN Set.

Choose "Connection Type"



As in this section we are going to connect the IC-705 to the Wifi, we select "Station (Connect to



Network) and then press the previous button.

Choose then "Connection Settings"



And then select "Access Point"

After this you will get a list of your local Wifi access points that the IC-705 can see.

Select your own local wifi (or mobile hotspot).



Click on your own Wifi, I have clicked here on mine "PA0KGB"

CONNECT	1/1
Password	
< <connect>> 2</connect>	
	U

First select "Password" and then fill in the password of your wifi.

Then select "<<Connect>>"

The IC-705 will now be connected to your already existing own wifi.

Next step is to setup an username and password to access the IC-705 from remote.

This username and password will be used by WFView to get access to the IC-705.

Go back to the menu "WLAN Set"





Then go to page 2/2, It will show "Remote Settings"



Click on "Remote Settings"



Then first you need to allow (enable) remote access to the IC-705, change "Network Control" to ON.

The restart you can do when we finished all steps.

Then go to page 2/2, and select "Network User1"

REMOTE SETTINGS	2/2
Internet Access Line (Valid after Restart)	
Network User1	
Network User2	
Network Radio Name	
IC-705	Ð

Then configure at "Network User1 ID" the username you want to use to remote control the IC-705 and with "Network User1 Password" fill in a password. Write them down as you need them later with WFView again.



Next step is to redirect that the Audio of the IC-705 goes via WLAN instead of MIC, USB.

For this go from the main menu, back to SET and select



Select "Connectors"

CONNECTORS	2/3
MOD Input	
SEND Output	
USB SEND/Keying	
External Keypad	U

Then select " Mod Input"

MOD INPUT			1/1
USB MOD Level			
		50%	
WLAN MOD Level			
		50%	
DATA OFF MOD			▼
	MIC	, USB	
DATA MOD			
	١	NLAN	ŋ

Then select "DATA MOD" and change it to WLAN.

Now power off the IC-705 and power it back on.

You have now the IC-705 configured to access it via Wifi.

One more setting needs to be done to enable transmit via CAT / remote control. Press Menu, then Set, and go to the second screen, and click on Connectors.



Now go to menu 3/3 and click on CI-V.



Now change the CI-V Transceive to ON.



You can now continue with the WFView settings.

3. Use WFView via virtual comport?

- 1. Connect your IC-705 to your local wifi (or hotspot), and write down it's IP address (this line will be extend later with details on how to setup your IC-705 for WIFI.
- 2. Start VSPE.



4. Then make sure it says, connector and press next (it takes a few seconds before you can continue on point.

Specify device type	×
VIRTI	Device type Connector Unlike regular serial port, connector is a virtual device that can be opened twice. When opened, it creates data pipe between its clients. That allows separate applications use the same serial port to exchange data.
New serial port	💾 Existing serial port
	< Back Next > Cancel Help

5. Now select the comport you want to virtual create. I have chosen COM16, as this is a high port and normally not used for other programs. Then press next.

Specify device characteristics	×	
Virtual serial port COM16 Emulate baud rate (optional)		
	N	
	λ3 	
<u>Back</u> Finish Now you will see that the virtual comport is active.	Cancel Help	
Virtual Serial Ports Emulator (64 bit) (Emulation started) : UNREGIS	TERED	- 🗆 X
File View Language Helpers Emulation Device Help		*
Title	Device	Status
COM16	Connector	Ready
(16:18:50) [COM16] InitializationOK		

- 7. The next step is to configure WFview.
- 8. Start WFView and go to the Settings menu.
- 9. Fill in the marked items as below.

6.

W	IC-705 -	wfview

View Band Frequency Settings			
Draw Peaks When tuning, set lower digits to zero			
Use System Theme 🔳 Waterfall Dark Theme 🗌 Anti-A	lias Waterfall 🔳 Inter	polate Waterfall 🗌 Show full screen	
Vojust Reference Modulation Input: Mic 🔻 Dat	a Mod Input: Mic		
PTT On PTT Off Enable PTT Controls			
	Baud: 19200	Server Setun	CF-V Address:
Connect over LAN Disconnect			Virtual Serial Port COM16
Radio IP Address 192.168.10.85	2	Radio Control Port 50001	
Username pa0kgb	3	Password •••••••	4
RX Latency (ms) 150 TX I	atency (ms)	150 RX Codec	LPCM 1ch 16bit 🔻 TX Codec LPCM 1ch 16bit 🔻
Sample Rate 48000 Audio Output	5 CABLE Input (VB-	-Audio Virtual Cable) 🔻 Audio Input	6 CABLE Output (VB-Audio Virtual Cable) 🔹
Polling			About Save Settings Exit Program
Please note: Changing the built-in network server requires pr	ressing "Save Settings"	, closing wfview, and re-opening.	
Please see the User Manual for more information.			
			•
		rx latency: 117 ms / rtt:	8 ms / loss: 9/1914 🔴 🔵 [C-705

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- 1 = The virtual comport you just created.
- 2 = The IP Address of the IC-705.
- 3 & 4 = The username and password you have configured in the IC-705.
- 5 & 6 = Where the audio input and output should go to, select the CABLE input/output.
- 7 = To save the settings.
- 10. Now press on Connect (which is next to the line "Connect over LAN"
- 11. On the bottom line you should see rx latency information coming and also green and blue ball with IC-705 as seen above.
- 12. You now have WFView working.

4. Use WFView via rigctld (easier)?

Start WFview and go to the settings menu.

1 = Click on "Connect to LAN" don't click on the connect button behind it yet !.

2 = Enable Rigctld and make sure that with point 3 the virtual serial port is set to None.

4 = Put in the IP address of the radio. (check the Menu, Settings, WLAN Set, for the IP address)

5 = Fill in the username you have configured in the IC-705 as Network user 1, and with 6, fill in the password.

7 and 8 = set to Cable input and Cable output.

9 = Save settings.

10 = Click on the connect button

W IC-705	- wfview
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	View Band Frequer	ncy Settings	►		
	Draw Peaks When Use System Theme	tuning, set lower dig Waterfall Dark Ther	its to zero me 🗌 Anti-Alias Waterfall 🔳 Interpol	ate Waterfall 🗌 Show full screen	
	Adjust Reference Modu	lation Input: Mic	▼ Data Mod Input: LAN		
	PTT On PTT Off 🔳 E	nable PTT Controls S	Gecondary Meter Selection: None		
	O Connect over USB (ser	ial) Serial Device: 🛛	Auto 🔻 Baud: 19200	- Server Setup 🗌 Manual Radio	O CI-V Address: auto 🗌 Use as Model too
1	Connect over LAN Dis	connect 10	2 Enable RigCtld 🔳 Port	4533	3 irtual Serial Port None 💌
	Radio IP Address 192.168	.10.85	4	Radio Control Port 50001	
	Username pa0kgb		5	Password •••••••• 6	
	RX Latency (ms)		150 TX Latency (ms)	150 RX Code	C LPCM 1ch 16bit - TX Codec LPCM 1ch 16bit -
	Sample Rate 48000	- Audio Output	CABLE Input (VB-Audio Virtual Cable)	Audio Input CABLE Output (VB-	Audio Virtual Cable) 👻
	Polling			8	About Save Settings Exit Program
	Please note: Changing the Please see the <u>User Manual</u>	built-in network serv for more informatio	er requires pressing "Save Settings", cl n.	osing wfview, and re-opening.	9
			rx	latency: 32 ms / rtt:	6 ms / loss: 7/3867 😔 🤵 IC-705

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You can see if you have a correct connection via wifi if this line is visible

rx latency: 71 ms / rtt: 18 ms / loss: 161/85301 😑 🧲 IC-705

The numbers will be different, but it will have a green and blue ball and IC-705.

Click on the "View" tab and you have your WFView connection working.

5. How to configure JTDX with use of the virtual comport?

To setup for example JTDX, start JTDX.

Go to File then Settings.

My settings are as follows

Genera <u>l</u>	<u>R</u> adio	A <u>u</u> dio	Sequencing	Tx <u>M</u> acros	Reporting	Frequencies	Notifications	Filters	Scheduler	Adv ∢ ►
Rig: Icom	n IC-705			▼ Poll Inter	val: 1 s 🌲	On	Off Rig power	✓ S meter	V Out	out power
CAT Contro	ol					PTT Method				
Serial Po	ort: COM1	6			•	_ vo <u>x</u>			ι	
Serial Po	ort Parame	ters				● C <u>A</u> T		() R <u>T</u> S	;	
Baud R	ate: 9600				•	Port: COM	13			-
Data Bi	ts					Transmit Aud				
• De	efault	0	Se <u>v</u> en	O Eight				0 -		
Stop Bit	ts					O Rear/D	ata	Eror	nt/Mic	
• De	efault	0	On <u>e</u>	⊖ T <u>w</u> o		Mode				
Handsh	iake					O None	U 9	5 <u>B</u>	Data/P	ţt
• De	efault ON/XOFF		O <u>N</u> one	e Iware		Split Operatio	n			
Force C	Control Line	s				None	🔘 Ri	ig	🔵 Fake It	
DTR:			▼ RTS:		-					
						Te	st CAT		Test PTT	•
					Ş	Tx delay:		0.1 s		\$
					Select t	ab to change o	onfiguration p	parameters.		
									<u>0</u> K	<u>C</u> ancel

But configure as above and press "Test CAT"

And then go to the Audio tab, and change audio input and output as shown below.

		_								
ienera <u>l</u>	<u>R</u> adio A <u>u</u> dio	Sequencing	Tx <u>M</u> acros	Reporting	Frequencies	Notifications	Filters	Schedule	r A	d
oundcard										
Refresh										
Input:	CABLE Output	t (VB-Audio Virtu	al Cable)					•	Mono	,
Output:	CABLE Input	(VB-Audio Virtual	Cable)					•	Mono	,
										_
udio files sav	ve directory									
udio files sav Loc <u>a</u> tion: C	ve directory C:/Users/mmoerm	an/AppData/Loca	l/JTDX/save						S <u>e</u> lect	
udio files sav Loc <u>a</u> tion: C emember po	ve directory C:/Users/mmoerm ower settings by ba	an/AppData/Loca and and mode	l/JTDX/save						S <u>e</u> lect	t

Now JTDX should receive, and you should be able to send.

6. How to configure JTDX with use of rigctld to have IC-705 access?

To setup for example JTDX, start JTDX.

Go to File then Settings.

My settings are as follows

🗚 Settings

General <u>R</u> adio	Audio Sequencing	Tx Macros	Reporting	Frequencies	Notifications	Filters	Scheduler	Adv ∢
Rig: Hamlib NET rigctl		▼ Poll Inter	val: 1 s 🌲	On	Off Rig power	V S meter	• V Out	put power
CAT Control				PTT Method				
Network Server: 12	7.0.0.1:4533		-	_ vo <u>x</u>			1	
Serial Port Parameter	rs			● C<u>A</u>T			1	
Baud Rate: 9600			-	Port: COM	13			-
Data Bits								
 Default 	🔘 Se <u>v</u> en	🔘 Eight		Transmit Audi	io Source			
Stop Bits				O Rear/D	ata	• <u>F</u> ror	nt/Mic	
 Default 	() On <u>e</u>	<u></u> о		Mode				
Handshake				O None		5 <u>B</u>	Data/P	<u>t</u>
Default		one		Split Operatio	n			
○ XON/XOFF	<u>О н</u>	ardware		Nana		-	🔿 Eaka It	
Force Control Lines				• None		y		
DTR:	RTS:		-					
				Tes	st CAT		Test PTT	
				Tx delay:		0.1 s		*
		Select	tab to change	configuration	parameters.			
							ОК	<u>C</u> ancel

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But configure as above and press "Test CAT"

And then go to the Audio tab, and change audio input and output as shown below.

Genera <u>l</u> <u>R</u> a	dio A <u>u</u> dio	Sequencing	Tx <u>M</u> acros	Reporting	Frequencies	Notifications	Filters	Schedule	r A
oundcard			1				1		
Refresh									
Input:	CABLE Output	: (VB-Audio Virtua	al Cable)					•	Mono
Ou <u>t</u> put:	CABLE Input (VB-Audio Virtual	Cable)					•	Mono
Audio files save	directory								
	lleeve/manaeeven	an/AnnData/Loca	l/JTDX/save						S <u>e</u> lect
Location: C:/	users/mmoerma	any reported zoed							
Loc <u>a</u> tion: C:/	er settings by ba	and and mode							

Now JTDX should receive, and you should be able to send.

Links to software:

WFVIEW:

https://wfview.org/download/

For **rigctld** control use minimum version 1.2 or higher.

VSPE (for virtual comport)

http://www.eterlogic.com/Products.VSPE.html

JTDX

https://www.jtdx.tech/en/

Virtual Audio cable:

https://vb-audio.com/Cable/index.htm