

ELAD Application Note AN-003 Using FDM-DUO with WSJT-X (Ver. 1.8.0)

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Introduction

This application note describes how to use FT8 Protocol using WSJT-X and FDM-DUO.

1 Pre-requirements

USB Serial Port driver from FTDI must be installed on the computer you are using. Then you need to identify the CAT USB port number. Open the Windows "Device Manager" and expand the "Ports (COM &LPT)" node. The CAT USB port is listed as "USB Serial Port".

📇 Device Manager	_	\times
File Action View Help		
V 🗄 DELL-VOSTRO15		^
> 🖺 Audio inputs and outputs		
> 🦢 Batteries		
> 💈 Bluetooth		
> 👰 Cameras		
> 💻 Computer		
> 👝 Disk drives		
> 🖙 Display adapters		
> 🔐 DVD/CD-ROM drives		
> 🏺 ELAD Samplers		
> 🛺 Human Interface Devices		
> 🦏 IDE ATA/ATAPI controllers		
> 🚡 Imaging devices		
> 🖵 Intel WiUSB		
> 🥅 Keyboards		
Mice and other pointing devices		
> 🛄 Monitors		
> 🖶 Network adapters		
🗸 🗍 Ports (COM & LPT)		
USB Serial Port (COM11)		
> 🚍 Print queues		
> 🚍 Printers		
> Processors		
> Software devices		
Sound, video and game controllers		~

In this case the CAT USB port number is COM11.

Check if the computer detects the input and output audio lines of the FDM-DUO. You can find them under the "Audio inputs and outputs" node of the Device Manager.

₫ 0	📇 Device Manager					\times
File	Action	View	Help			

	-		
~	봂	DELL-VOSTRO15	~
	\sim	🚺 Audio inputs and outputs	
		Altoparlanti / cuffie (Realtek High Definition Audio)	
		😅 Linea (FDM-DUO Audio v1.04)	
		😅 Linea (FDM-DUO Audio v1.04)	
		🖳 Microfono (FDM-DUO Audio v1.04)	
		🖳 Microfono (Realtek High Definition Audio)	
	>	🝃 Batteries	
	>	8 Bluetooth	
	>	Cameras Cameras	
	>	💻 Computer	
	>	Disk drives	
	>	🔙 Display adapters	
	>	DVD/CD-ROM drives	
	>	🏺 ELAD Samplers	
	>	🐺 Human Interface Devices	
	>	na IDE ATA/ATAPI controllers	
	>	a Imaging devices	
	>	🚽 Intel WiUSB	
	>	🔤 Keyboards	
	>	Mice and other pointing devices	
	>	Monitors	
	>	🚽 Network adapters	
	>	Ports (COM & LPT)	
	>	🚍 Print queues	~

Check also the volume of the playback and recording devices.

Sound	× 🌛 Linea Properties ×
Playback Recording Sounds Communications	General Levels Advanced Spatial sound
Select a playback device below to modify its settings:	
Linea FDM-DUO Audio v1.04 Default Communications Device Altoparlanti / cuffie Realtek High Definition Audio Default Device	Linea 100 ()) Balance
Configure Set Default V Properties OK Cancel Apply Sound	OK Cancel Apply
	Clinea Properties
Playback Recording Sounds Communications	General Listen Levels Advanced
Select a recording device below to modify its settings: Microfono FDM-DUO Audio v1.04 Default Device Linea FDM-DUO Audio v1.04 Currently unavailable	Linea 100 () Balance
Microfono Realtek High Definition Audio Ready	
Missaggio stereo Realtek High Definition Audio Disabled	
Configure Set Default 💌 Properties	

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2 Settings

When opening the software it will show these two windows.

Main Window : WSJT-X v1.8.0 by K1JT × File Configurations View Mode Decode Save Tools Help Band Activity Rx Frequency UTC dB DT Freq Message UTC dB DT Freq Message Log QSO Stop Monitor Erase Decode Enable Tx Halt Tx Tune Menus 40m 100 ~ 7.074 Pwr Generate Std Msgs Next Now Tx even/1st DX Grid ON3EDG IW3SR JN65 Ο Tx 1 DX Call Tx 1310 Hz ≑ Tx ← Rx -80 0 Tx 2 ON3EDG IW3SR -15 ON3EDG JO20 Rx 1310 Hz 🖨 Rx ← Tx -60 Az: 315 750 km 0 Tx 3 ON3EDG IW3SR R-15 Hold Tx Freq 40 Lookup Add Report -15 韋 ON3EDG IW3SR RRR 0 Tx 4 ·20 Auto Seq Call 1st ON3EDG IW3SR 73 Ο Tx 5 ~ 2017 nov 28 -0 NA VHF Contest CQ IW3SR JN65 Tx 6 ۲ 11:14:16 20 dB 1/15 WD:6m Receiving FT8



Wide Graph :

© 2018 ELAD S.r.l. All rights reserved. No part of this document may be reproduced, published, used, disclosed or disseminated in any form or by any means, electronic, photocopying or otherwise, without prior written permission of ELAD S.r.l. On the Main Window, go to the Mode menu and select FT8.



After that you have to set WSJT-X to work with the FDM-DUO, go to File and then Settings.

0	WSJT-X v1.8.0 I	by K1JT	r						
File	Configurations	View	Mode	Decode	Save				
	Open			Ctrl+	o				
	Open next in direc	ctory		F6	Ī				
	Decode remaining files in directory Shift+F6								
	Delete all *.wav & *.c2 files in SaveDir								
	Erase ALL.TXT								
	Erase wsjtx_log.a	idi			1				
	Open log director	y			1				
	Settings			F2					
	Exit			11.00	I				

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Set the General tab of the Settings window as follows.

Settings							?	×
General	Radio	Audio	Tx Macros	Reporting	Frequencies	Colors	Adva	lice
Station D	Details							
My Call:	IW3SR		My Grid:	JN65fw	IARU Reg	jion: All	•	
Message	e generatio	on for type	2 compound o	allsign holders:	Full call in Tx3		•	
Display								_
🗌 Blan	k line betw	een decodi	ng periods			Font		
Displ	lay distanc	e in miles			Dec	coded Text	Font	
∠ Tx m	iessages to	o Rx freque	ency window					
Shov	v DXCC en	tity and wo	orked before s	tatus				
Behavior								
🗌 Moni	itor off at s	startup		Enable VHF	/UHF/Microwave	features		
🗌 Moni	itor returns	s to last use	ed frequency	Allow Tx fr	equency changes	while trans	smitting	
🗹 Doub	ole-click on	call sets To	x enable	Single deco	ode			
🗹 Disat	ble Tx afte	r sending 7	73	Decode aff	ter EME delay			
					Tx watchdo	og: 6 minut	tes 韋	
	ID after 73	3			Periodic CW I	D Interval:	0 韋	
					Oł	K	Cancel	

Note: "My Call" and "My Grid" have to be set with your personal information.

General Radio Audio Tx Macros Repo	rting Frequencies Colors Advalue
Rig: Kenwood TS-480	▼ Poll Interval: 1s 🖨
CAT Control	PTT Method
Serial Port: COM7 ~	○ VOX ○ DTR
Serial Port Parameters	◯ CAT
Baud Rate: 38400 🔻	Port: COM7 ~
Data Bits O Seven Eight Stop Bits One Two	 Rear/Data Front/Mic Mode None USB Data/Pkt
Handshake None () XON/XOFF () Hardware Earce Control Lines	Split Operation None Rig Fake It
DTR: RTS:	Test CAT Test PTT
	OK Cancel

Set the Radio tab of the Settings window as follows. Be careful to choose the right COM port.

You can test the CAT connection using the "Test CAT" button.

If "PTT Method" is set to "RTS", the "PTT" setting on the FDM-DUO (menu 54) has to be set on "PTT IN + RTS".

Set the Audio tab of the Settings window as follows.

General Radio Audio Tx Macros Reporting Frequencies Colors Soundcard Input: Linea (FDM-DUO Audio v1.04) Mathematical Mathematical Mathmatical Mathmatical Mathmatical Mathematical Mathematical Mathmat	Advaluce
Soundcard Input: Linea (FDM-DUO Audio v1.04) Output: Linea (FDM-DUO Audio v1.04) Save Directory	ono 🔻
Input: Linea (FDM-DUO Audio v1.04) Output: Linea (FDM-DUO Audio v1.04) Save Directory	ono 🔻
Output: Linea (FDM-DUO Audio v1.04) Ma Save Directory	ono 🔻
Save Directory	
Location: C:/Users/Giambattista/AppData/Local/WSJT-X/save Sel	lect
AzEl Directory	
Location: C:/Users/Giambattista/AppData/Local/WSJT-X Sel	lect
Remember power settings by band	
Transmit Tune	
OK	Canad

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3 Receive and transmit

On the Main Window the Band Activity area shows the messages and the requests from other people.

Band Activity									
UTC	dB	DT	Freq		Message				
110/45	U	-0.1	1297	~	CQ IZCZQ JN55	!ITALY			
110800	-18	0.7	503	~	BG7BDB OG5N KP00				
110800	10	1.2	911	~	G7KFQ DJ7TH RRR				
110800	-14	0.0	1201	~	ONSEDG DG0OS R+07				
110815	-13	0.8	1202	~	DG0OS ON3EDG RRR				
110815	-9	0.8	1256	~	CQ SP1HN J073	!Poland			
110815	-17	0.1	1297	~	CQ I2CZQ JN55	!Italy			
110830	11	1.4	911	~	G7KFQ DJ7TH 73				
110830	-10	0.7	1052	~	CQ SP6TRW J071	!Poland			
110830	-12	0.0	1201	~	ONSEDG DG0OS 73				
110845	-13	0.7	1202	~	DG0OS ON3EDG 73				
110845	-12	0.8	1256	~	CQ SP1HN J073	Poland			
110845	-16	0.0	1297	~	CQ I2CZQ JN55	!Italy	\checkmark		

You can answer to a request by double clicking on their name.

Rx Frequency									
UTC	dB	DT	Freq		Message				
110145	-6	0.8	1310	~	CQ ONSEDG JO20	1			
110202	Тx		1310	~	ONSEDG IWSSR JN65				
110215	-2	0.8	1310	~	IW3SR ON3EDG -07				
110230	Тx		1310	~	ONSEDG IWSSR R-02				
110245	4	0.8	1310	~	IW3SR ON3EDG RRR				
110300	Tx		1310	~	ONSEDG IWSSR 73				
110315	-7	0.8	1309	~	IW3SR ON3EDG 73				
110415	-7	0.8	1309	~	CQ ON3EDG JO20				
110445	-12	0.8	1310	~	CQ ONSEDG JO20				
						1			
<					>				

Generate Std Msgs Next Now ON3EDG IW3SR JN65 Ο Tx 1 ON3EDG IW3SR -15 Ο Tx 2 0 ON3EDG IW3SR R-15 Tx 3 0 ON3EDG IW3SR RRR Tx 4 ON3EDG IW3SR 73 \sim Ο Tx 5 IW3SR JN65 ۲ Tx 6

A sequence of messages will start and if you selected Auto Seq will send those messages automatically.

on the Main Window the software

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