

List of FTDX10 Settings for FT8/FT4/MSK144 at VE3SMA Jan.2, 2022

The following settings appear to work for me and produce a reasonably clean signal (Note 6).

Windows 10

Sounds/Playback/USB AUDIO CODEC/Properties/Levels = 29 (See Note 5)

Sounds/Playback/USB AUDIO CODEC/Properties/Enhancements:

“Disable all enhancements” box checked

Sounds/Playback/USB AUDIO CODEC/Properties/Advanced:

16 bit 48000 bps (DVD Quality) selected

Exclusive mode: both boxes checked

Sounds/Playback/USB AUDIO CODEC/Properties/Spatial Sound = Off

Sounds/Recording/USB AUDIO CODEC/Properties/Levels = 47

Sounds/Recording/USB AUDIO CODEC/Properties/Advanced:

16 bit 48000 bps (DVD Quality) selected (as recommended in WSJT-X manual)

Exclusive mode: both boxes checked

Enable audio enhancements box checked

WSJT-X v.2.5.1

Settings/Radio:

Rig: FTDX-10

Poll Interval: 1s

Baud Rate: 38400

Data Bits: Default

Stop Bits: Default

Handshake: Default

Force Control Lines: nothing selected

PTT Method: RTS

Port: COM5 (this is what Windows assigned for the USB audio)

Transmit Audio Source: nothing selected, or even selectable

Mode: None

Split Operation: Fake It (but None also works, haven't really experimented with Rig option)

Settings/Audio:

Input: Line (USB AUDIO CODEC) – Mono

Output: Speakers (USB AUDIO CODEC) – Mono

Pwr Slider: -32.0 dB (See Notes 4 & 5)

FTdx10

EXTENSION SETTING (December 2021 update has not been applied yet)

MAIN: V01-08
DISPLAY: V01-03
DSP: V01-01
SDR: V01-00
AF: V01-00

OPERATION SETTING

GENERAL

CAT RATE: 38400 bps
CAT RTS: OFF

TX AUDIO

AMC RELEASE TIME: MID

RADIO SETTING

MODE PSK/DATA

AF TREBLE GAIN: 0
AF MIDDLE TONE GAIN: 0
AF BASS GAIN: 0
DATA SHIFT (SSB): 1500 Hz
LCUT FREQ: OFF
HCUT FREQ: OFF
DATA OUT LEVEL: 0
TX BPF SEL: 50-3050Hz (see note 1)
DATA MOD SOURCE: REAR
REAR SELECT: USB
RPORT GAIN: 70 (see note 2)
RPTT SELECT: RTS

MODE: DATA-U (PRESET not used) (see Note 3)

R.FIL: 3kHz

WIDTH: 3000

DNR: OFF

NB: OFF

SHIFT: 0

NOTCH: OFF

CONT/APF: OFF

AMC LEVEL: 55

DNF: OFF

Notes:

- (1) I use FT8/FT4 and also MSK144, which is a wideband mode that will work better with the maximum transmitter bandwidth setting. However, if you only use FT4/FT8 (with Fake It or Rig split), then the audio frequency will always fall between 1.5 and 2 kHz and using a transmit bandwidth of 400-2600Hz will give more attenuation of the second harmonic of the audio frequency, resulting in a cleaner signal and more margin for setting the audio levels too high while still transmitting a clean signal. If you use Split Operation = None and must cover the full WSJT-X frequency range, then you should probably use 50-3050 Hz bandwidth, but you may need to be more careful in setting the audio levels to avoid generating audio harmonics.
- (2) Others have reported successfully using values of RPORT GAIN as low as 30, with clean signals. I believe you can probably use a value in the lower end of the 30-70 range if you use low transmitter bandwidth and Fake It or Rig split. A value in the higher end of this range appears to be less prone to creating audio harmonic signals, but does appear to increase the level of another spurious signal at 1.0 kHz (and perhaps another at 2.0 kHz).
- (3) DO1YHJ reports that to use Split Operation = Rig in WSJT-X, you must set the mode on both VFO A and VFO B to DATA-U before starting WSJT-X.
- (4) WSJT-X Pwr Slider is adjusted to give the power output set on the FTDX10, with ALC meter reading more than zero, but well within the white segment of the scale.
- (5) Initial indications are that using other combinations of Windows Playback Level and WSJT-X Pwr slider settings that result in the same audio level being sent to the FTDX10 does not result in major changes in signal purity and quality. The spectrum shown on the FTDX10 scope (with Split Operation = None) looks very similar for Windows Playback Level = 5 and WSJT-X Pwr Slider = -10 dB, as compared with the settings in the list above, for example.
- (6) Using the FTDX10's spectrum scope, all spurious signals appear to be below -50 dB with respect to the main signal in WSJT-X Tune mode, at any power level between 5 and 100 watts, when adjusted according to Note 4.

Acknowledgements:

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