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# FDM-DUO

# EDW-DNO

**DUAL MODE SDR TRANSCEIVER:  
STAND-ALONE & PC BASED**

# DUAL OPERATION MODE

Stand Alone Mode

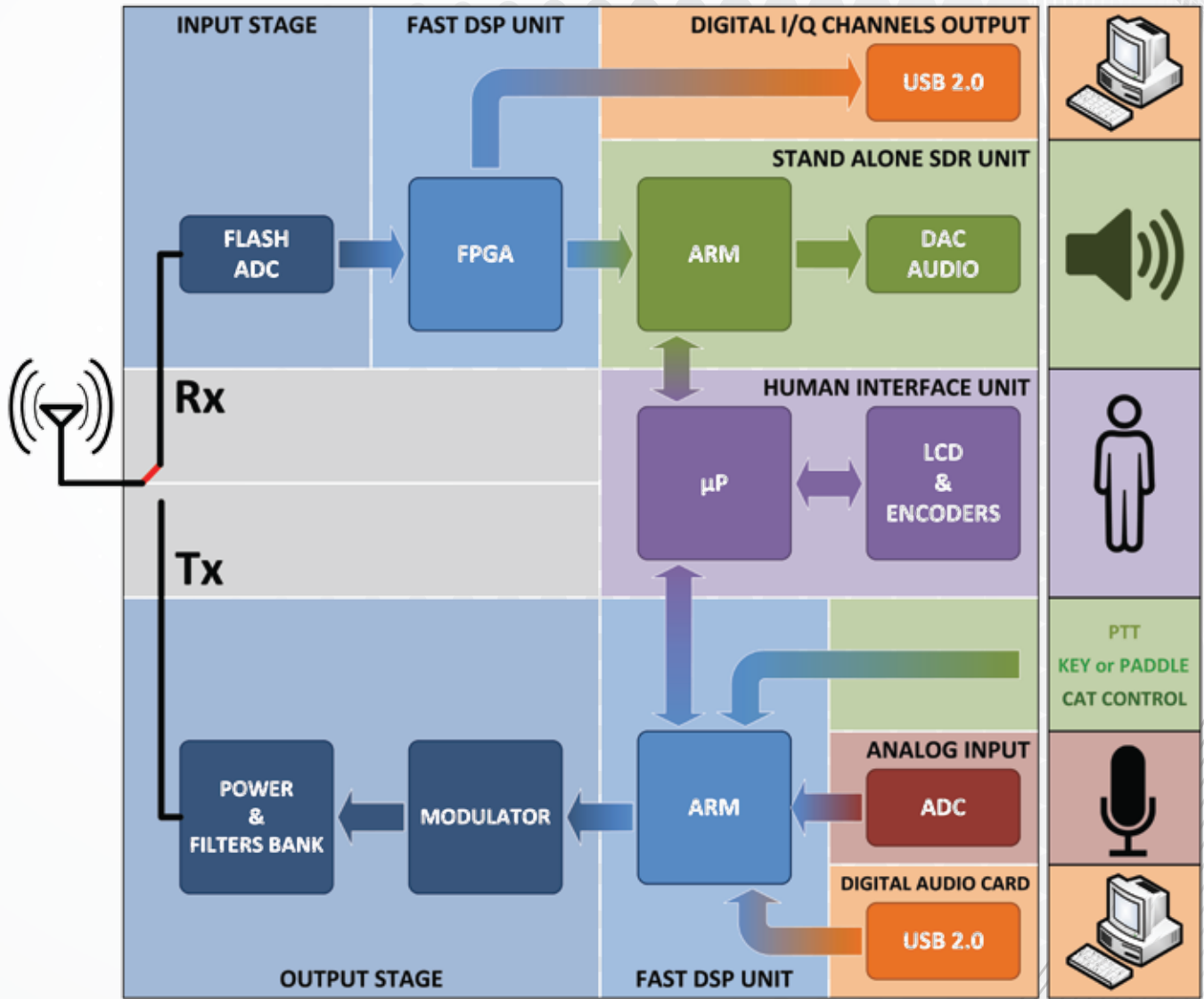
Connected to PC to exploit full potential of FDM software

Stand Alone Main Feature		Connected to PC Main Feature	
Rx	Tx	Rx (with FDM-SW1)	Tx
Modes: A1A (CW), J3E (USB,LSB), A3E (AM), F3E (FM)		Modes: CW, CW SH+, CW SH-, USB, LSB, DSB, AM, SYNC AM, FM, WB FM (Stereo + RDS), RTTY, DRM	Suitable for Analog Modes Using the Integrated USB Digital Audio Card with SDR Softwares (A1A, J3E, A3E and F3E mode)
Sample Rate: 192 kHz	Mic Input	Sample Rate: Up to 6144 MHz	Suitable for the Most Popular Digital Modes Software Using the Integrated USB Digital Audio Card1
Software Defined Filters	Key or Paddle Input	Double IF Notch Filters, Continuous Variable Band Filter	
Noise Blanker	PTT Input	Noise Blanker	
Noise Reducer	Watt Meter	Adaptive Noise Reducer & Auto Notcher	
Analog I/Q Channel Output	Rit and Xit	Spectrum & Waterfall	
Aux. Com Output for Spectrum Visualization	5 W Output Power	Recording and Playback of IF and Audio Data Stream	
CAT Control		CAT Control	

## MAIN FEATURES

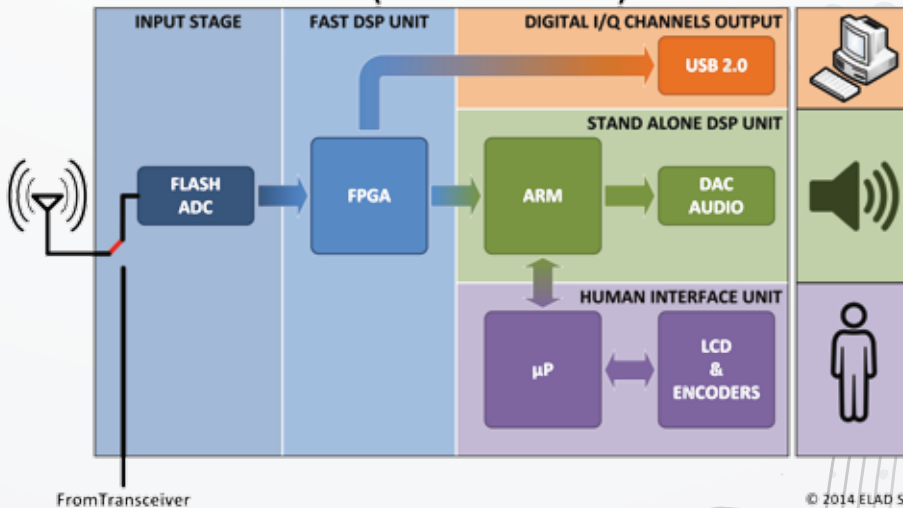
- Frequency range: RX 9kHz to 52MHz direct sampling receiver
- TX 160m to 6m
- Selectable power output 5W on Ham Bands or 0dBm RF Out connector
- Double antenna connectors (RTX or separate RX/TX)
- Stand-alone Modes: CW CW+ CW- LSB USB AM
- ADC Linear LTC2165, 16bit @122.88MHz
- DDC FPGA Spartan 6 XC6SLX25 + Serial Flash for stand-alone mode
- Stand-alone RX demodulator with STM32F4 ARM floating point  $\mu$ Controller
- LPC1766 Cortex M3 for LCD & Keyboard control
- TX modulator with STM32F4 floating point  $\mu$ P + AD9957 DDS @368.64 MHz
- Clocking source Si5338 driven by 10MHz TCXO or External reference input
- TX modulator from I<sup>2</sup>S source: MIC using Cirrus CS5346 or USB integrated Codec (CM6510B codec with customized firmware)
- CAT USB interface with FTDI controller

# ELAD FDM-DUO BLOCK DIAGRAM



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## ELAD FDM-DUOr (Receiver ONLY) BLOCK DIAGRAM



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FDM-DUOr (Receiver Only Version)

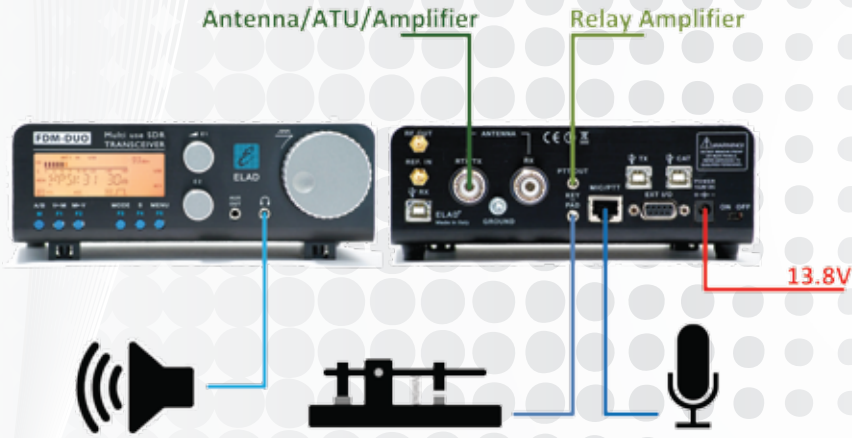




# Applications Scenarios

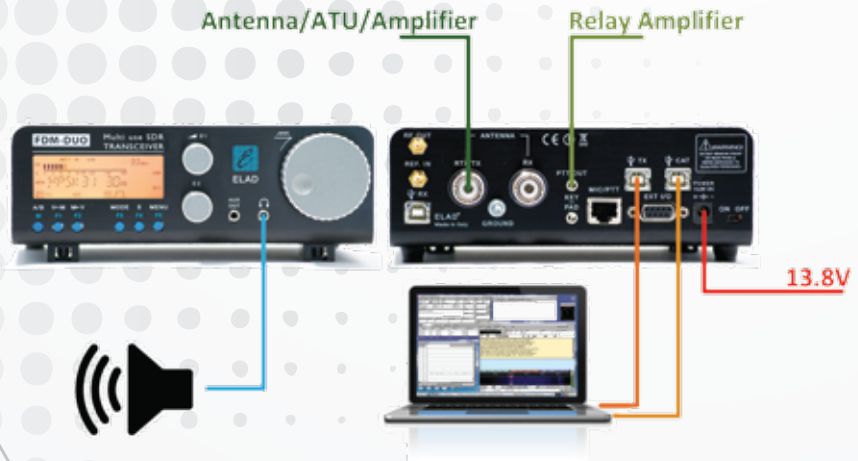
## STAND-ALONE INSTALLATION

for Phone or CW Operation

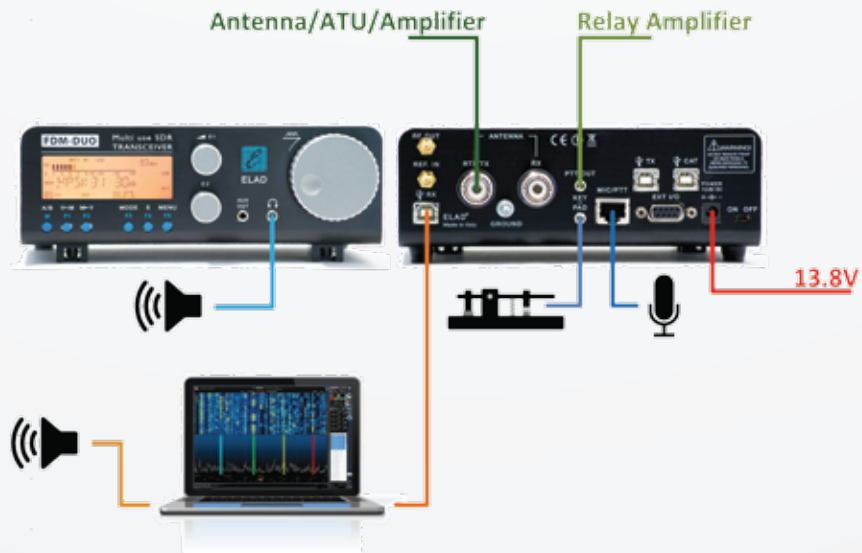


## STAND-ALONE INSTALLATION

for PSK/RTTY/JT/SSTV Operation

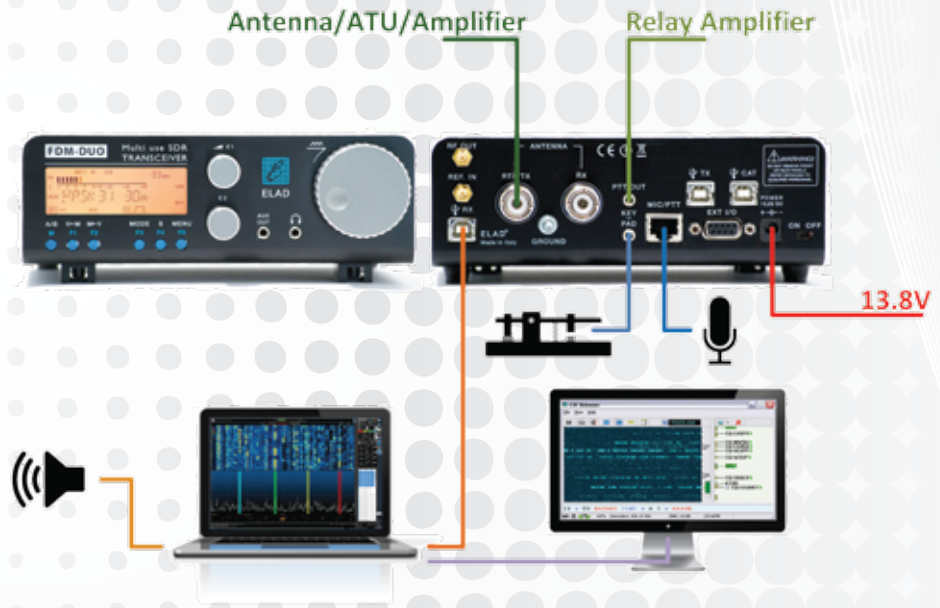


## STAND-ALONE INSTALLATION with 192 kHz Spectrum + 4 Receivers



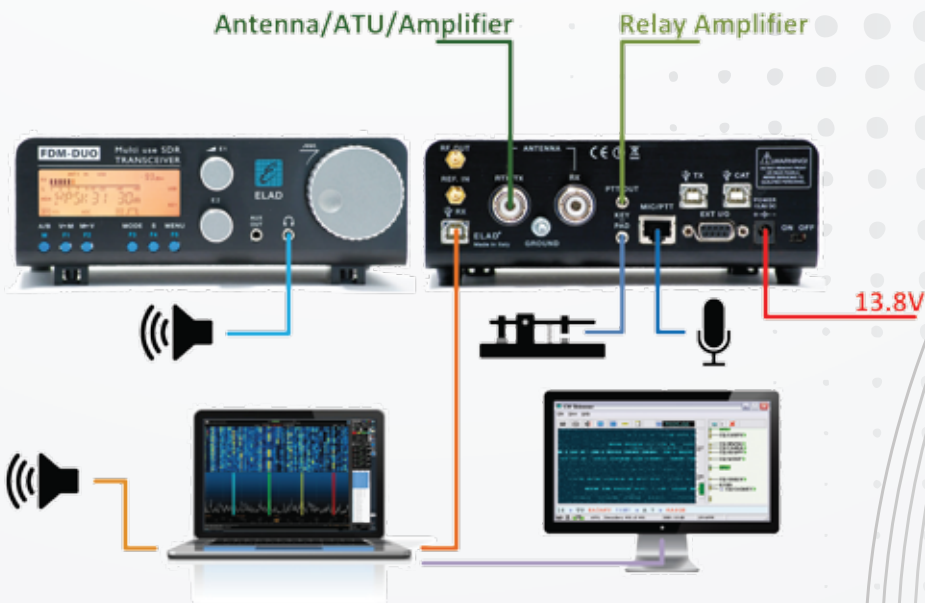
## PC INSTALLATION

with Up to 6 MHz Spectrum or Dual 384 kHz Channel



## MIXED INSTALLATION

with 192 kHz Spectrum + Second Independent 192 kHz Channel



Application Scenarios



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