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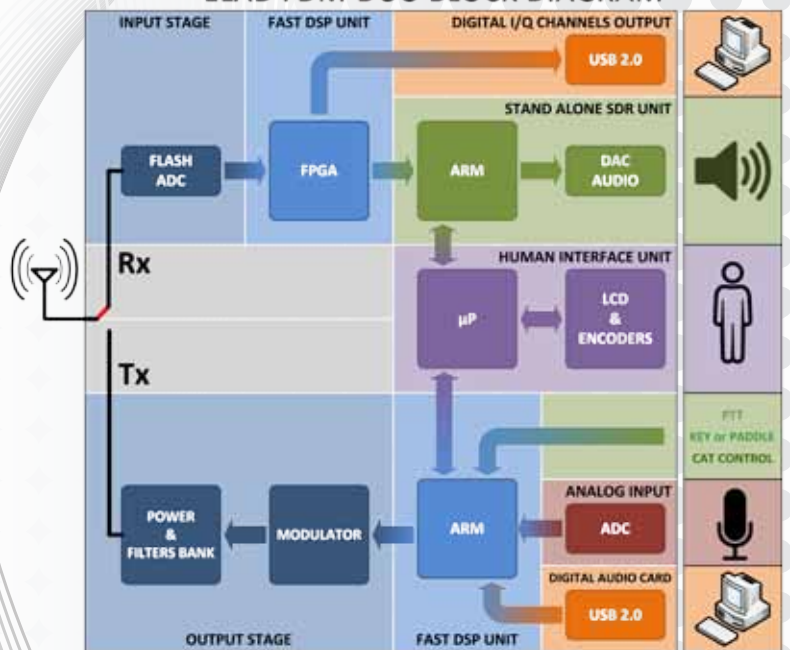


# FDM-DUO

# EDW-DNO

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

## ELAD FDM-DUO BLOCK DIAGRAM



## Block Diagram

## DUAL OPERATION MODE

Stand Alone Mode

Connected to PC to exploit full potential of FDM software

## Stand-Alone & PC modes

Stand Alone Main Feature		Connected to PC Main Feature	
Rx	Tx	Rx (with FDM-SW1)	Tx
Modes: CW, USB, LSB, AM		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
Sample Rate: 192 kHz	Mic Input	Sample Rate: Up to 6.144 MHz	Suitable for the Most Popular Digital Modes Software Using the Integrated USB Digital Audio Card
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	
CW Utilities	Rit and Xit	Spectrum & Waterfall	
Aux. Com Output for Spectrum Visualization	5 W Output Power / 0dBm Output	Recording and Playback of IF and Audio Data Stream	
CAT Control		CAT Control	

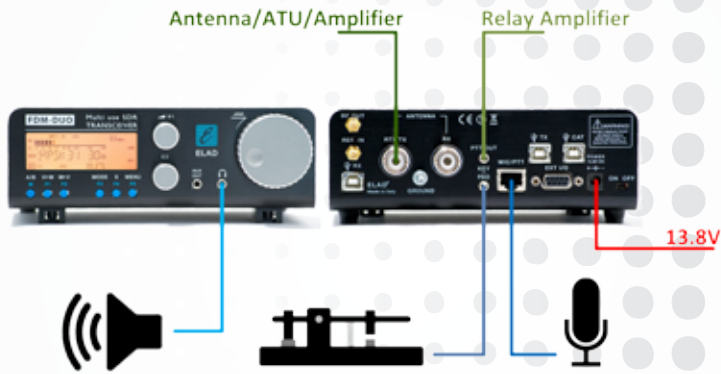
- Frequency range: RX 9kHz to 54MHz direct sampling receiver
- TX 160m to 6m allowed amateurs band frequencies
- Selectable power output 5W on Ham Bands or 0dBm RF Out connector
- 0dBm output to be used as test equipment becoming a Digital RF Generator
- CW simplified operations and decoder
- Double antenna connectors (RTX or separate RX/TX)
- Stand-alone Modes: CW CW+ CW- LSB USB AM
- ADC Linear LTC2165, 16bit clocked @122.88MHz
- DDC FPGA Spartan 6 XC6SLX25 + Serial Flash for stand-alone mode
- Stand-alone RX demodulator with STM32F4 ARM floating point µController
- LPC1766 Cortex M3 for LCD & Keyboard control
- TX modulator with STM32F4 floating point µP + 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
- Fully managed by FDM-SW2 software (included)

## Main Features

# Application Scenarios

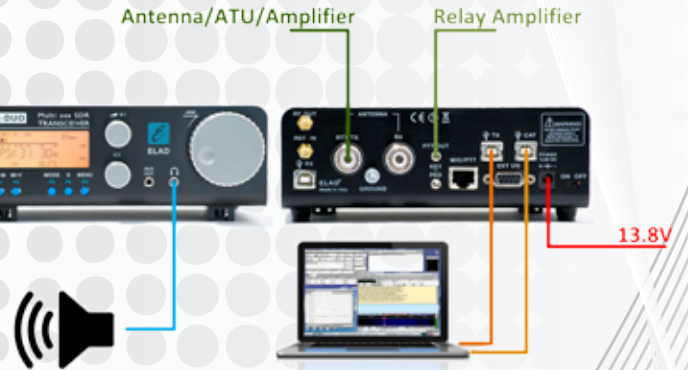
## STAND-ALONE INSTALLATION

for Phone or CW Operation



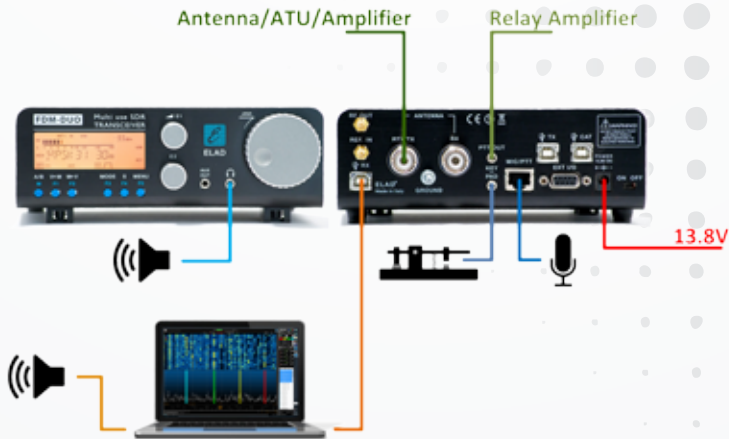
## STAND-ALONE INSTALLATION

for PSK/RTTY/JT/SSTV Operation



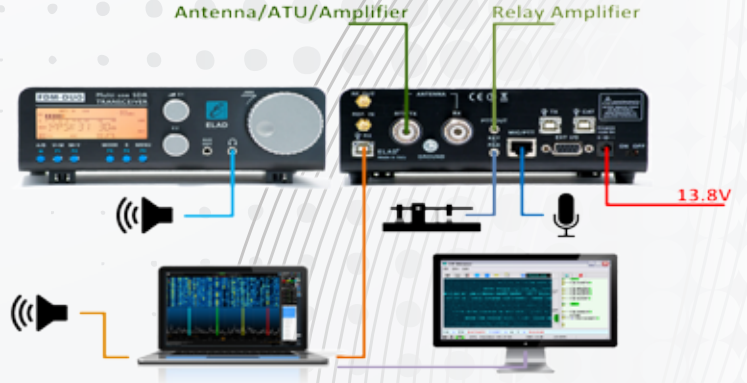
## STAND-ALONE INSTALLATION

with 192 kHz Spectrum + 4 Receivers



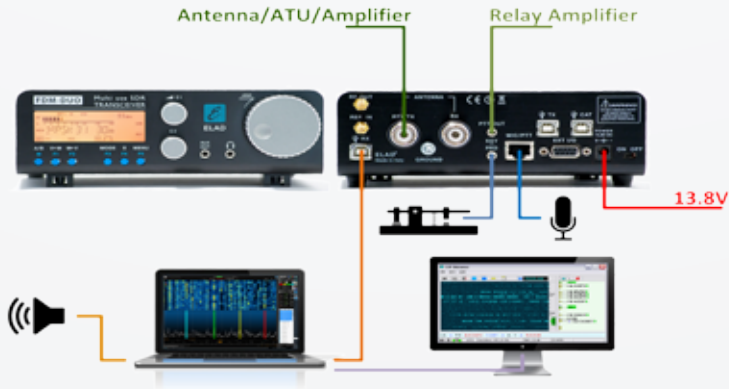
## MIXED INSTALLATION

with 192 kHz Spectrum + Second Independent 192 kHz Channel



## PC INSTALLATION

with Up to 6 MHz Spectrum or Dual 384 kHz Channel



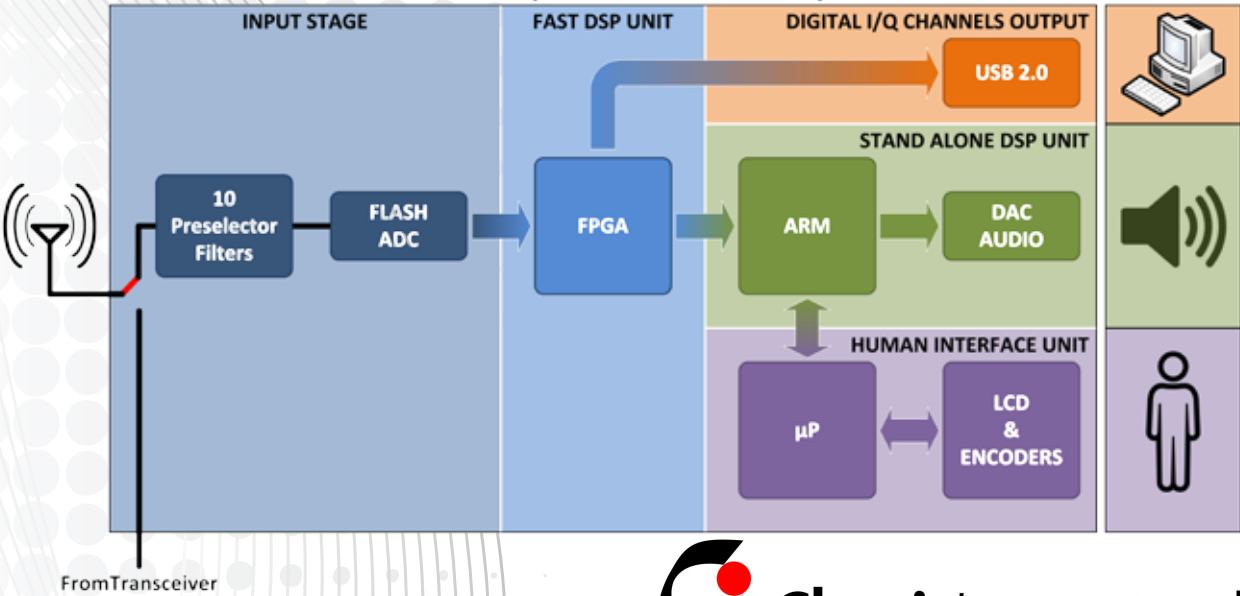
FDM-DUOr Receiver only version



- Frequency range: RX 9kHz to 54MHz direct sampling receiver + VHF undersampling reception
- 10 selectable and customizable filter preselectors
- Internal switch box for use with an external transceiver
- Stand-alone Modes: CW CW+ CW- LSB USB AM
- ADC Linear LTC2165, 16bit clocked @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
- Clocking source Si5338 driven by 10MHz TCXO or External reference input
- CAT USB interface with FTDI controller
- Fully managed by FDM-SW2 software (included)

# Main Features

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



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*Experts in Wireless Communication*



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