

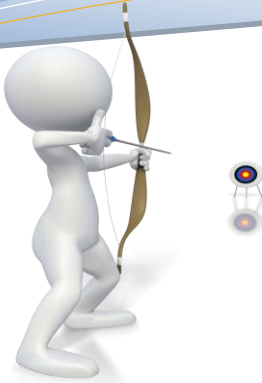


## ARCHER

*When missing your target is not an option!*

**Continuous 500 MHz Real-time  
Spectral Exploitation & Data Acquisition**

*The Flexible Intelligence Platform*



### Features:

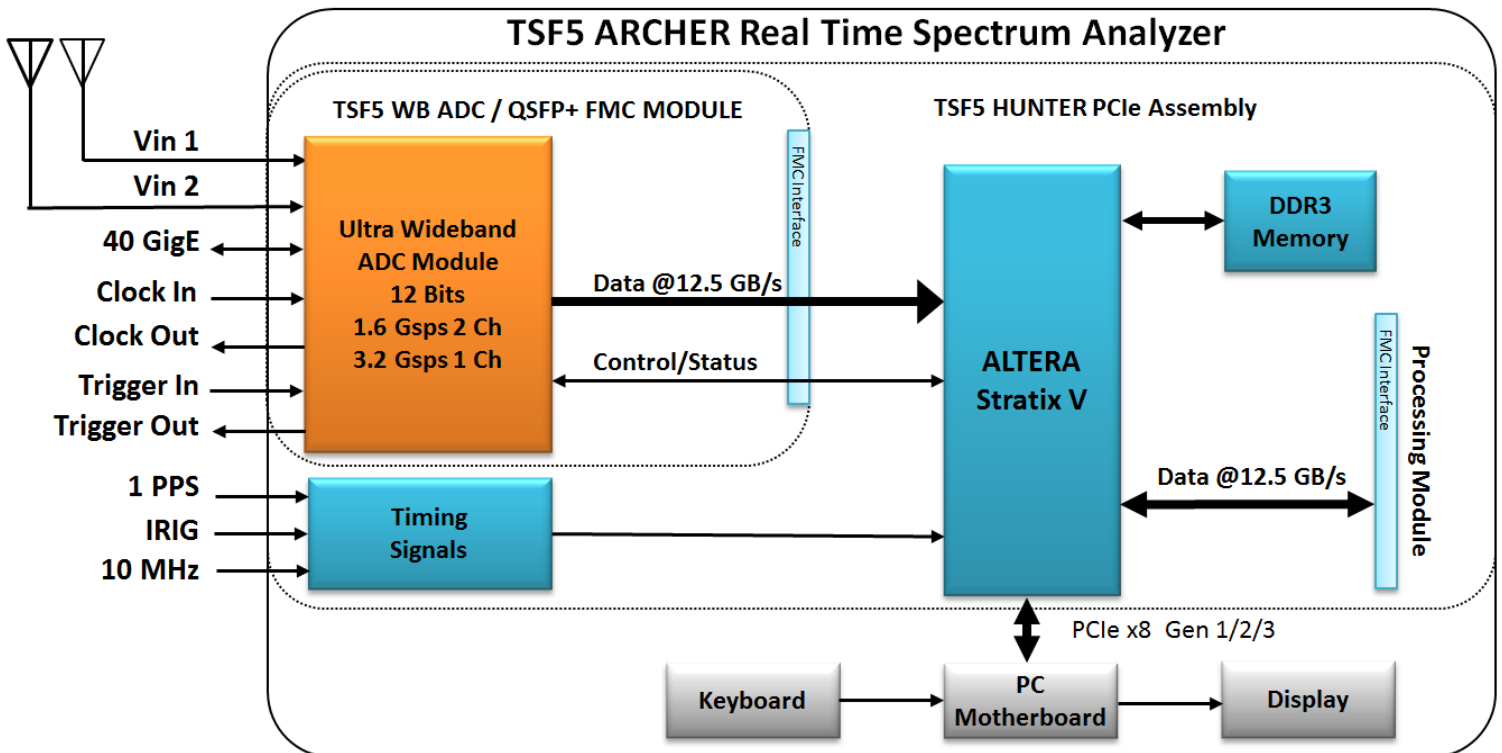
- Flexible rack-mountable or portable system configurations
- Hunter PCIe acquisition card can provide Archer spectral processing capability in your existing server
- Over 500 MHz Ultra Wideband gap-free acquisition and processing
- Record-to-disk capability via high-speed RAID array
- 3dB Labs Sceptre Software suite
- Simultaneous time-frequency and time-time rasters enable joint Velocity and Range Gate Pull-Off (VGPO & RGPO) measurements
- Dual RF inputs 1.6 Gbps @ 12 Bits
- Timing signal inputs
  - IRIG, 1PPS, 10 MHz
- Ext. clock, Reference clock, Clock out
- Trigger In, Trigger Out
- Internal sample clock generation
- 16K WOLA 50% overlap FFT processor at the full input sample rate
- Four Wideband digital downconverter cores output 150, 75, or 37 MHz bandwidths
- VITA-49 formats to host
- Consult factory for other file formats and input types





## Archer Architecture:

TSF5 combines industry leading components to produce the Archer real-time spectral analysis system. At the heart of the system is the TSF5 Hunter PCIe card. It provides the analog input and the digital signal processing power required to keep up with the huge amounts of data produced by its ultra wideband 12-bit ADC. The 3dB Labs Sceptre application provides an intuitive human interface and a wealth of additional backend processing features. The hardware and software can be housed in a rugged portable system or a stationary rack-mount server, depending on customer requirements. Archer provides a computing system that takes advantage of the 3dB Labs Sceptre software package and the wide bandwidth data transferred to host.





*ARCHER Software:*



*Sceptre Inside!*

## *Software Overview –*

The Archer is controlled with the powerful and intuitive Sceptre signal processing suite offered by 3dB Labs. The Sceptre suite not only controls the Hunter PCIe card and all of its features, it also controls several COTs receivers making the Archer a truly integrated turnkey product.

## *Software Features –*

- Capable of both real-time and offline processing
- Interfaces with a variety of receivers
- High-speed oscilloscope, amplitude and frequency, with triggering
- Basic AM and FM demodulation (other advanced demods available)
- Flexible resolution BW and averaging
- Peak hold
- Zoom and pan
- Markers
- Sub-band tuning
- Pause and scroll-back
- Selection of colormaps
- Pulse detection and measurement with PDW generation
- Configurable processing, displays and settings
- Ability to pause real-time, look back, zoom, place markers
- Precision time and frequency tracking throughout
- Four hardware Sub-band tuners of up to 150 MHz Bandwidth
- Flexible software tuners within the wideband streams
- Software tuner bandwidth is variable from 100 Hz to 40 MHz
- Point-and-click tuning with easy bandwidth adjustment
- Multiple record-to-disk options
- Consult 3dB Labs for a full list of features

*Simultaneously Record Spectral data, Pre-D data & Demodulated outputs while viewing over 500MHz of real-time spectrum*

# Specifications –

## Panel Mount Signals

**Vin 1, Vin 2 Analog Inputs**  
SSMC coaxial  
800mVp-p, 50 Ohm Impedance

**Trigger Input**  
SSMC coaxial  
LVTTTL/LVCMOS33, 50 Ohm Impedance  
Adjustable threshold option available

**Trigger Output**  
SSMC coaxial  
LVTTTL, 50 Ohm Driver

**Ext Clock Input**  
SSMC coaxial  
0 dBm typical, 50 Ohm Impedance  
400 MHz to 3000 MHz

**IRIG-B12X Input**  
SSMC coaxial  
1Vp-p to 5Vp-p, 50 Ohm Impedance

**10 MHz Input**  
SSMC coaxial  
200mVp-p to 5Vp-p, 50 Ohm Impedance

**1PPS Input**  
SSMC coaxial  
LVTTTL, 50 Ohm Impedance

**Optional Transition Panel**  
Adapts SSMC connectors to more rugged SMA interface. Standard on portable units.

## A/D Converter

12-Bit 3.2 GSPS / 1.6 GSPS dual  
**ENOB:** 8.6 Bits (typ)  
**SNR:** 53.8 dBFS(typ)  
**SFDR:** 63.4 dBFS (typ)  
(See Hunter Model 1000 Datasheet)

## Physical

**Basic Portable Configuration**  
**Size:** 7.92"(D) x 15.06"(H) x 19.75"(W)  
**Weight:** ~48 lbs.  
**Power:** ~325 Watts

## Environmental

**Operating Temperature:** 0° to 40° Celsius  
**Storage Temperature:** -20° to 65° Celsius  
**Relative Humidity:** 5% to 95%, non-condensing

**Mechanical Shock:** ≤10g, 11ms, Terminal saw-tooth, operating  
**Transit Shock:** 18" drop  
**Vibration:** ≤0.04g<sup>2</sup>/Hz, 20Hz–1,000Hz;  
-6dB/octave 1,000Hz–2,000Hz

## Power

460W or 700W, 110/220V, 50/60 Hz  
Auto-switching power supply

\*For additional information contact us at [info@TSF5.com](mailto:info@TSF5.com)

Specifications are subject to change without notice

