

# SNC<sup>®</sup>

## *Excalibur IPA*



The SNC Excalibur Integrated Processing Assembly (IPA) is a digitally channelized High Probability of Intercept (HPOI) Electronic Support (ES) receiver that supports mono-pulse Precision Direction Finding (PDF) and geolocation of every signal intercept. The Excalibur IPA supports interfacing with up to four existing platform PDF antenna arrays. Excalibur is designed for remote or local operator control and provides continuous full 16 GHz bandwidth starting ranging from 0.5-18GHz frequency coverage with multiple narrow band drop channels using highly integrated RF Downconverter and Digital Signal Processing (DSP) cards supporting the Sensor Open Systems Architecture (SOSA) standard.

# Excalibur IPA



The Excalibur IPA interfaces with a four-element Antenna Panel Assembly (APA) arrays and an RF Electronics Assembly (REA) which provides 120 degrees Field of View (FOV) to support precision geolocation. Up to four APA arrays may be connected to the Excalibur IPA chassis which includes integrated switching to allow manual array selection or fast commutation over a 360 degrees FOV. The IPA can be easily interfaced with existing or other arrays.

This Digital HPOI system divides antenna array inputs into eight 2GHz RF subbands using four RF Downconverter modules with a total of 32 processed 2GHz RF subbands. Each RF subband is sampled and digitally channelized to enable excellent signal detection sensitivity and selectivity. A state-of-the-art Single Board Computer runs SNC's Real Time Sorter (RTS) application, producing emitter reports including signal identification and geolocation.

## IPA SPECIFICATIONS

• Type	¾ ATR Chassis
• Open Systems Architecture	3U VPX, SOSA 1.0
• Size	19.5" x 10.6" x 7.5"
• Weight	60 lbs
• Power	850W, +28V DC
• Cooling	Forced Air-Over-Conduction
• Frequency Range	0.5-18 GHz
• Instantaneous Bandwidth	16 GHz
• Receiver Bandwidth	Digitally channelized
• Control Interface	4x 10G Ethernet
• Data Interface	8x 100G Ethernet

## RELATED EQUIPMENT

- APA – 0.5 to 18 GHz Antenna Panel Assembly
- REA – RF Electronics Assembly
- ILA – In-Line Amplifier (Optional)

## EXCALIBUR FUNCTIONS



Pulsed radar signal detection & Pulse Descriptor Word (PDW) generation



Frequency Modulated Continuous Wave (FMCW) & other Low Probability of Intercept (LPI) radar signal detection & Segment Descriptor Word (SDW) generation



Signal deinterleaving, emitter identification



Emitter geolocation with accuracy supporting long-range targeting



Excalibur can be used as a streaming IQ data server providing:

- Full, continuous, starting across 16GHz frequency coverage
- Eight 2GHz digitized channels over 8x 100G ethernet links or
- Multiple Virtual Tuners with variable frequency & bandwidth in VITA 49.2 Format



Simultaneously support Op ELINT with Tech ELINT accuracy with BandsCan display



Manual Analysis Displays include PDW Sparkle Plot, Running PDW Time Plots, DF Polar Plot, Oscope & IF Pan.



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