



Airspace Visualization Display (AViD-Lite)



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AViD-LITE

**Low Cost, Small Footprint, Data Detection,
Collection and Analysis Service**

Airspace Visualization Display (AViD-Lite)

“The Future of Data Collection”

AViD-LITE

- 1U Rackmount SDRR Recorder
- Designed for Limited Space
- Streamlined Cable Management



HARDWARE DESIGN OBJECTIVE

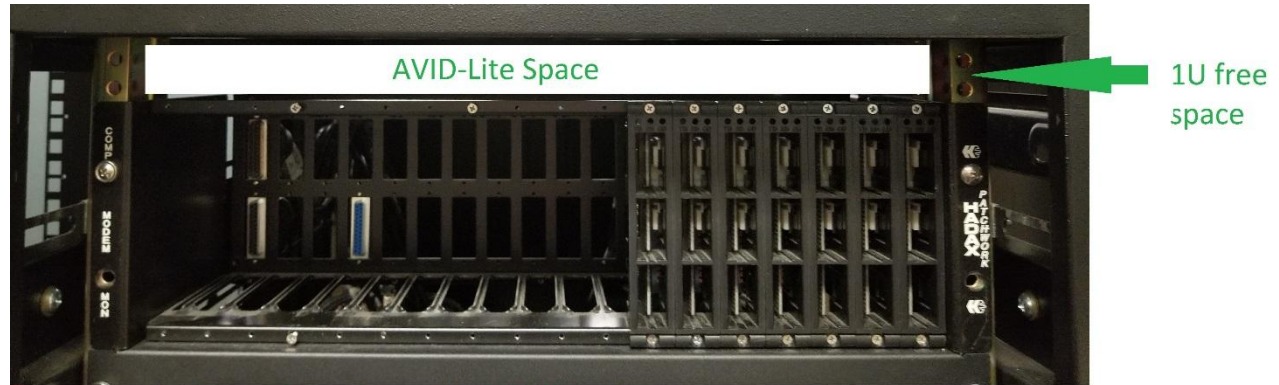
- **Provide a Solution Based on JVN SDRR Software Application**
- **Provide a Reduced Footprint, Fault Tolerant, Rack Mounted Hardware Platform With Solid State Technology**
- **Provide Micro Platform Engineered with No Moving Parts and Embedded Serial Ports**
- **Provide RJ45 Radar and IFDT Ports**
- **Provide Receive Only Ports**

APPLICATION DESIGN OBJECTIVE

- **Provide a Permanent and Inexpensive Solution for Data Detection, Collection and Analysis**
- **Provide a Reliable and Easy to Use Data Recording/Analysis Tool**
- **Provide Stakeholders 24/7 Data Distribution Services to FAA Tech Center & OSF**
- **Provide Data Analysis Tools for Onsite Tech OPS & Engineering Services**
- **Provide a Solution for 2E Transition Sites**

FEATURES

- Requires 1U of Rack Space



Typical Hadax Patch Panel found in COMM racks, the example above shows how little space is required to install the new AVID-Lite Server

- Embedded Serial Ports with RJ45 Interfaces for Easy of Cable Management



Installed AVID-Lite Server

FEATURES

- Provides 12 RJ45 Radar & 4 IFDT Ports
- Direct Connects w/No Adapters - Simply Snap In



12 RJ45 Radar Ch. & 4 IFDT compact Ch.

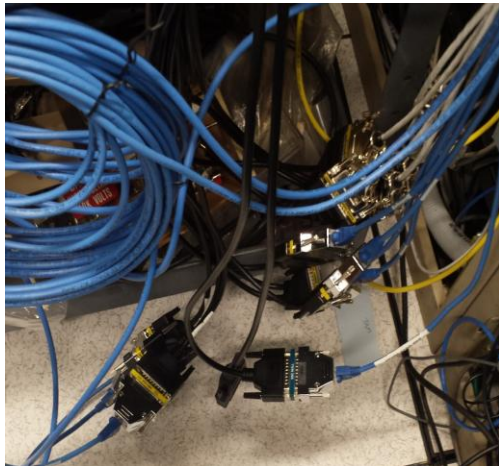
- LED for Each Port - Flashes When Data is Detected
- Easy Detection For Line/Chan Availability



LED Lights flash when radar data is detected on chan 0-11 & IFDT on 12-15

BENEFITS

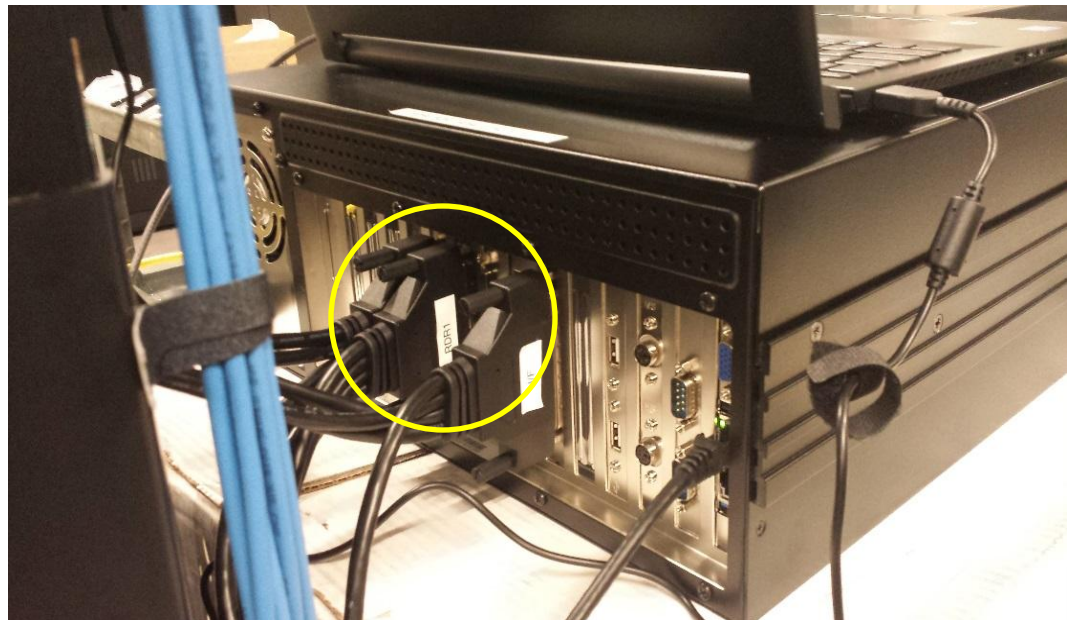
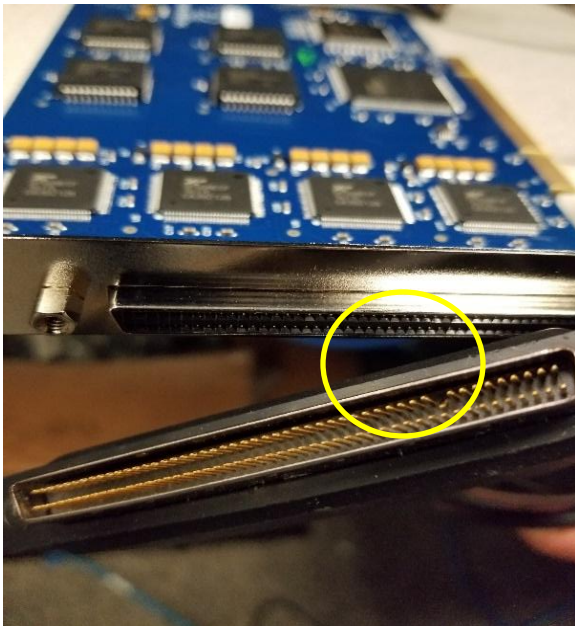
- **Rack Mounted Solution Eliminates Space Floor and Desktop Consumption**



- **Reduced Cable Connection Points with Embedded RJ45 Connections**
- **Eliminated the Need for Custom Serial Cables and DB25 Null Adapters**

BENEFITS

- SDRR Recorders Require Laptop and Second I/O Chassis Connected Across a Network
- Network Failures and Additional Serial Connection Points/Pins Cause Cable and Port Problems that Corrupt Recordings



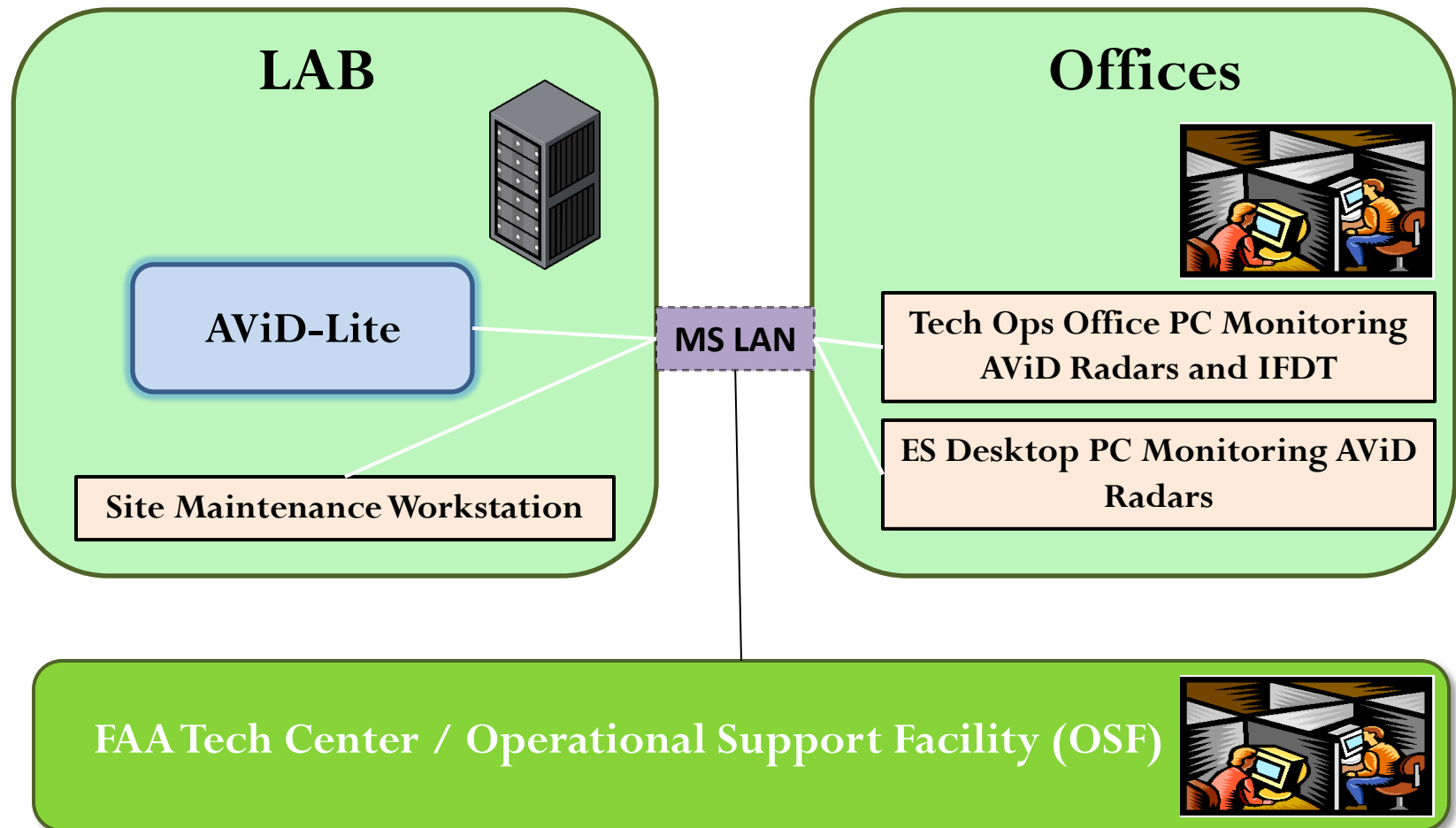
BENEFITS

- Requires No Additional Platforms for Operation
- Auto Boots and Records Without Intervention
- Provides a Digital Video and VGA Port for a Service LCD/Mon
- Provides Multi User Remote Display Capabilities
- Users/Stakeholders Have Remote Display Capabilities On Desktop PC



REMOTE VIEWING

➤ Remote Viewing For Remote and Local Stakeholders



DISPLAY APPLICATION

➤ View and Analyze Surveillance and IFDT Data

	TOT	BCN	SRC	BRTQC	SRTQC	STAT	WX	MARK	SCIP	INV	MALF	SYNC
Chan 0	627207	147744	322947	4261	8541	8107	0	135607	0	0	0	0
Chan 1	627211	148330	322935	4175	8411	8370	0	134990	0	0	0	0
Chan 2	627168	147402	323438	4257	8419	8314	0	135338	0	59	32	17
Chan 3	565594	0	0	0	0	0	541186	0	24408	5	0	0

➤ Detects Invalid and Inverted Data

➤ Displays the IFDT Message Communication Between Two Specified Facilities

```
Monitor: ZCF-DFA
zcf@/dev/ff1 <-> dfa@/dev/ff2

15:30:39.84 DFA1535240ACA -TU ACA 036 ( 7 88.55 50 ) -12,-123 ) -038 ( 12 50.54 62 ) ( 16,-219 ) -*
15:30:40.73 DFA1535241 -TA 006 O1W -*
15:30:40.84 ZCF1535888 -DA 006 DFA1535241 -*
15:30:41.06 ZCF1535000 -TU DFA 672 ( 47 00,-32 75 ) -391,132 ) -673 ( 32 62.43 38 ) -153,-64 ) -*
15:30:42.85 DFA1535242ACA -TU ACA 036 ( 7 75.55 25 ) -14,-124 ) -038 ( 12 50.54 25 ) ( 14,-220 ) -*
15:30:46.55 ZCF1535889 -TI DFA 658 ( -36 125,-46 375 ) ( 164,389 ) -*
15:30:46.67 DFA1535243ACA -TU ACA 036 ( 7 75.55 12 ) -17,-124 ) -038 ( 12 62.54 00 ) ( 25,-220 ) -*
15:30:46.88 DFA1535244 -DA 658 ZCF1535889 DFA1W -*
15:30:47.23 ZCF1535000 -TU DFA 672 ( 46 38,-32 50 ) -391,132 ) -673 ( 32 38.43 12 ) -153,-64 ) -*
15:30:51.77 DFA1535245ACA -TU ACA 036 ( 7 75.55 00 ) -9,-126 ) -038 ( 12 62.53 75 ) ( 21,-221 ) -*
15:30:52.63 DFA1535246 -TA 744 O1W -*
15:30:52.74 ZCF1535890 -DA 744 DFA1535246 -*
15:30:53.17 ZCF1535000 -TU DFA 672 ( 45 62,-32 38 ) -388,133 ) -673 ( 32 12.43 00 ) -153,-65 ) -*
15:30:56.68 DFA1535247ACA -TU ACA 036 ( 7 75.54 88 ) -11,-125 ) -038 ( 12 62.53 38 ) ( 17,-222 ) -*
15:30:58.12 ZCF1535000 -TU DFA 672 ( 45 00,-32 00 ) -388,133 ) -673 ( 31 88.42 88 ) -153,-65 ) -*
15:31:00.70 DFA1535248ACA -TU ACA 036 ( 7 75.54 62 ) -5,-125 ) -038 ( 12 62.53 12 ) ( 12,-223 ) -*
15:31:01.88 ACA1535457DFA -TA DFA 434 O1H -*
15:31:02.41 DFA1535249ACA -DA 537 ACA1535457DFA -*
15:31:05.08 ZCF1535000 -TU DFA 672 ( 44 50,-31 88 ) -385,135 ) -673 ( 31 62.42 88 ) -153,-65 ) -*
15:31:05.58 DFA1535250ACA -TU ACA 036 ( 7 75.54 50 ) -8,-126 ) -*
15:31:07.58 DFA1535251 -DM 207 1535 -*
15:31:07.98 ZCF1535892 -DA 207 DFA1535251 -*
15:31:10.48 DFA1536252ACA -TU ACA 036 ( 7 75.54 38 ) -4,-127 ) -*
15:31:11.02 ZCF1535000 -TU DFA 672 ( 44 00,-31 50 ) -378,139 ) -673 ( 31 38.42 75 ) -153,-65 ) -*
15:31:13.43 ACA1536462DFA -TA DFA 719 O1H -*
15:31:14.20 DFA1536253ACA -DA 538 ACA1536462DFA -*
```

DISPLAY APPLICATION

- Active Monitor for Radar and ADSB
- Triggers Red/Green/Yellow Radar Icon Symbol when Defined Values are In/Out of Tolerance

The screenshot displays a software interface for monitoring radar and ADSB data. At the top, a toolbar contains icons for various stations: ZOA, BAB, FLX, MCC, MRY, NUQ, OAK, PRB, and QMV. The main content area is divided into three sections: 'Message Counts', 'Channel Status', and 'Data Status'.

Message Counts

	TOT	BCN	SRC	BRTQC	SRTQC	STAT	WX	MARK	SCIP	INV	MALF	SYNC
Chan 033947568	8305593	16123602	258069	514778	502483	0	8243043	0	0	0	0	0
Chan 133947546	8303927	16123734	257673	515559	502968	0	8243685	0	0	0	0	0
Chan 233946207	8308069	16119799	257093	514516	503258	0	8243472	0	2565	1515	608	0
Chan 34460490	0	18704	0	0	0	32967301	0	1474485	90	3	0	0

Channel Status

Chan	CLK	DATA	9600
Chan 0	CLK	DATA	9600
Chan 1	CLK	DATA	9600
Chan 2	CLK	DATA	9600
Chan 3	CLK	DATA	9600


Data Status

Type	Status	RX Time
BRTQC (7770)	RANGE	41/19:59:54
SRTQC	STATUS	41/19:59:58
BCN (1271)	STATUS	41/19:59:56
BCN (1272)	STATUS	41/19:59:56
SRC	STATUS	41/19:59:56
STATUS	STATUS	41/19:59:58
MARK	STATUS	41/19:59:58

DISPLAY APPLICATION

➤ Displays Surveillance MSGs in Readable Format

File Applications Sources

ZNY ☐ sv0 Messages ☐ Record 08092010.1228 ☐ Message Summary 

File

Time	Source	Type	MsgType	Mode 3A	Range	Azimuth	Mode C	Position	Data
10-07-06-01	JFK	ASR9-MODES	MARK						0921 0000 0dbe 0
10-07-05-14	PHL	ASR9-MODES	MARK						0921 0000 0abe 0
10-07-05-29	PHL	ASR9-MODES	MARK						0921 0000 0b3e 0
10-07-05-43	PHL	ASR9-MODES	MARK						0921 0000 0bbe 0
10-07-05-57	PHL	ASR9-MODES	MARK						0921 0000 0c3e 0
10-07-05-72	PHL	ASR9-MODES	MARK						0921 0000 0cbw 0
10-07-05-86	PHL	ASR9-MODES	MARK						0921 0000 0d3e 0
10-07-06-01	PHL	ASR9-MODES	MARK						0921 0000 0dbe 0
10-07-05-12	SWF	ASR9-IBI	BCN R	0023	54.39	2644	200	+40.47.20.41,-074.51.39.19	06d0 0d99 0a54 0
10-07-05-14	SWF	ASR9-IBI	MARK						0921 0000 0abe 0
10-07-05-21	SWF	ASR9-IBI	BCN R	3502	23.70	2723	400	+41.13.40.99,-074.28.09.62	06d0 05ed 0aa3 0
10-07-05-29	SWF	ASR9-IBI	MARK						0921 0000 0b3e 0
10-07-05-43	SWF	ASR9-IBI	MARK						0921 0000 0bbe 0
10-07-05-57	SWF	ASR9-IBI	MARK						0921 0000 0c3e 0
10-07-05-59	SWF	ASR9-IBI	BCN R	0003	14.45	3057	360	+41.26.09.18,-074.23.21.80	06d0 039d 0bf1 0
10-07-05-72	SWF	ASR9-IBI	BCN R	0002	27.73	3177	360	+41.27.34.10,-074.42.16.33	06d0 06ef 0c69 0
10-07-05-72	SWF	ASR9-IBI	MARK						0921 0000 0cbe 0
10-07-05-86	SWF	ASR9-IBI	BCN R	0001	41.14	3302	360	+41.34.20.63,-075.00.05.03	06d0 0a49 0ce6 0
10-07-05-86	SWF	ASR9-IBI	MARK						0921 0000 0d3e 0
10-07-05-95	SWF	ASR9-IBI	BCN R	3447	56.92	3375	160	+41.42.26.62,-075.20.04.06	06d0 0e3b 0d2f 0
10-07-06-01	SWF	ASR9-IBI	MARK						0921 0000 0dbe 0
10-07-06-15	JFK	ASR9-MODES	MARK						0921 0000 0e3e 0
10-07-06-21	JFK	ASR9-MODES	BCN R	0023	50.81	3340	200	+40.47.21.18,-074.51.32.98	06d0 0cb4 0d0c 0
10-07-06-26	JFK	ASR9-MODES	BCN R	1274	52.50	3383	000	+40.51.03.31,-074.53.00.75	06c0 0d20 0d37 0
10-07-06-30	JFK	ASR9-MODES	MARK						0921 0000 0ebe 0
10-07-06-44	JFK	ASR9-MODES	MARK						0921 0000 0f3e 0

DISPLAY APPLICATION

- Displays CD2, ADSB, Asterix and MLAT Messages to the FRN level

Time	Information
10:05:35.10	ADSB (1090) (ENVELOPE: Cat=33/Len=53) (Cat=33/Len=46)
10:05:35.10	ADSB (1090) (ENVELOPE: Cat=33/Len=53) (Cat=33/Len=46)
10:05:35.10	ADSB (1090) (ENVELOPE: Cat=33/Len=53) (Cat=33/Len=46)
10:05:35.18	ADSB (1090) (ENVELOPE: Cat=33/Len=66) (Cat=33/Len=59)
10:05:35.71	ADSB (1090) (ENVELOPE: Cat=33/Len=66) (Cat=33/Len=59)
10:05:35.78	ADSB (1090) (ENVELOPE: Cat=33/Len=66) (Cat=33/Len=59)
10:05:35.79	ADSB (1090) (ENVELOPE: Cat=33/Len=66) (Cat=33/Len=59)
10:05:35.94	ADSB (1090) (ENVELOPE: Cat=33/Len=66) (Cat=33/Len=59)
10:05:36.04	ADSB (1090) (ENVELOPE: Cat=33/Len=66) (Cat=33/Len=59)
10:05:35.10	ADSB (Equip) (ENVELOPE: Cat=23/Len=140) (Cat=23/Len=133)
10:05:35.10	ADSB (Equip) (ENVELOPE: Cat=23/Len=140) (Cat=23/Len=133)
10:05:35.10	ADSB (Equip) (ENVELOPE: Cat=23/Len=140) (Cat=23/Len=133)
10:05:35.10	ADSB (Equip) (ENVELOPE: Cat=23/Len=140) (Cat=23/Len=133)
10:05:35.10	ADSB (Equip) (ENVELOPE: Cat=23/Len=62) (Cat=23/Len=55)
10:05:35.10	ADSB (Equip) (ENVELOPE: Cat=23/Len=62) (Cat=23/Len=55)
10:05:36.10	ADSB (UAT) (ENVELOPE: Cat=33/Len=52) (Cat=33/Len=45)
10:05:36.10	ADSB (UAT) (ENVELOPE: Cat=33/Len=52) (Cat=33/Len=45)
10:05:36.10	ADSB (UAT) (ENVELOPE: Cat=33/Len=52) (Cat=33/Len=45)
Details	
Application Envelope	
Category: 33	
Length: 59	
Asterix Record: FRNs: 1,2,3,4,5,6,7,8,9,11,12,13,14,15,16,18,22,23	
FRN 1 (Service Volume Id): SAC=0xab, SIC=0xd	
FRN 2 (Version Number): Status=Normal, Version=2	
FRN 3 (Link Tech Indicator): Version=1, 1090ES=Yes, UAT=No, NonADSB=No, TISBTType=A	
FRN 4 (Time Of Applicability): Position=10:05:35.80, Velocity=10:05:35.80	
FRN 5 (Target Address): Dup=No, Qualifier=ADSB(BCAO24, Address=0x0007ed	
FRN 6 (Integrity And Accuracy): UTCCoupled=Yes, NIC=<0.2NMi, SIL=Major, NACp=GPSSA, TestMode=No, Validation=Valid, NACv=<3m/s, NICb=NotChkd	
FRN 7 (Lat Lon): Position=+40.40.09.27,-074.47.27.89	
FRN 8 (Pressure Altitude): Resolution=25ft, Altitude=20000 ft	
FRN 9 (Air Velocity): VertVelSource=Baro, ScaleFactor=0.25 NMi, NSVelocity=397KnotsS, EWVelocity=48.75KnotsW, VerticalRate=0.00ft/minUp	
FRN 11 (Mode 3/A Code): Validity=Valid, Code=0022	
FRN 12 (Target ID): Code=0022	
FRN 13 (Emitter Category): Category=NoInfo	
FRN 14 (Target Status): RxATCSvc=No, Ident=No, SurvStatus=None, StatusCode=None	
FRN 15 (Geometric Altitude): Altitude=20000.00 ft	
FRN 16 (Modes And Codes): CDTI=No, TCASOperational=No, TCASRAActive=No, IDENTSwitchActive=No, RxATCServices=No	
FRN 18 (Time Of Message Reception): Time=0.84375	
FRN 22 (Data Source Qualifier): RegionalPrefix=EDM, EquipType=HP 1090 Multi, LocationID=38, Instance=1090-1	
FRN 23 (Report Identifier): ReportID=0	
CRC32 OK	
0000:	21 00 42 21 00 3b ff df d1 c0 ab 0d 02 18 46 f7
0010:	e6 00 00 00 07 ed be c0 e8 1c eb 9c ca d0 b3 83
0020:	20 56 35 86 20 01 10 12 89 24 92 68 08 20 00 00
0030:	0c 80 00 00 6c 00 00 00 ed 02 60 00 00 00 69 fe
0040:	75 71

HARDWARE SPECIFICATIONS

Processor

- **Intel Core i7 3517CPU**
- **Includes 8GB of DDR3 RAM**

Storage

- **2x 256GB mSATA SSD Storage**

Power

- **18V-36V DC power input**

Size

- **1U Rackmount Server**

Environmental

- **0-50C Operating Temperature**

HARDWARE SPECIFICATIONS

I/O

- **16 Synchronous Serial Ports (cat6 RJ45) Connections**
- **12 Synchronous Serial Radar Ports - RJ45 connectors**
- **4 Synchronous Serial IFDT Port on RJ45**
- **2 DASI Ports (RJ45)**
- **5 Gigabit Ethernet Ports**
- **2 USB 3.0 Ports**
- **5 USB 2.0 Ports**
- **DisplayPort and/or VGA Video Output**
- **LED Indicators for Synchronous Serial Port Activity**

HARDWARE SPECIFICATIONS



HARDWARE SPECIFICATIONS

**12 Radar Ports w/LED
Indicators for Synchronous
Serial Port Activity**

**4 IFDT Ports w/LED
Indicators**



ADSB/MLAT/ASTERIX

DASI Ports

**ES/Tech Ops
Via LAN from
desk or
RTAD/RBATS
Station**



DV/VGA

**WAN & Private Network for
Stacking AViD-Lite Units**

Sites

- **2E/E-Lite Sites**
- **TRACONS**
- **LARGE TRACONS**
- **D-RAPCON**
- **Remote Locations**