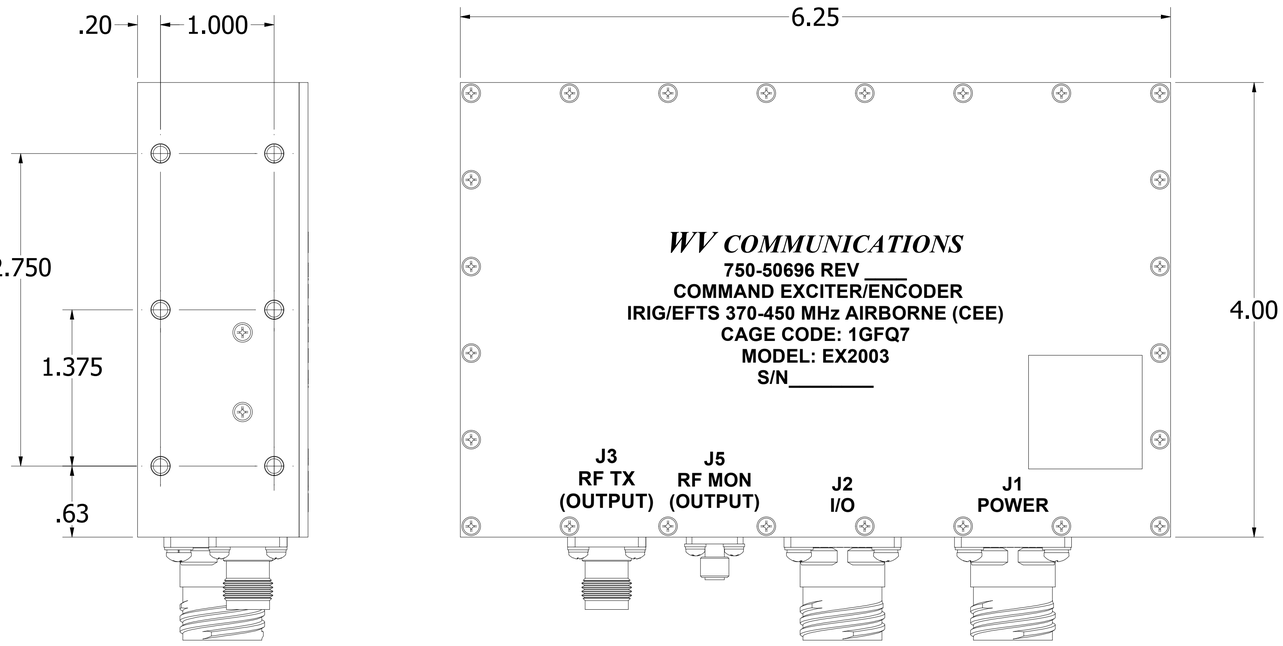
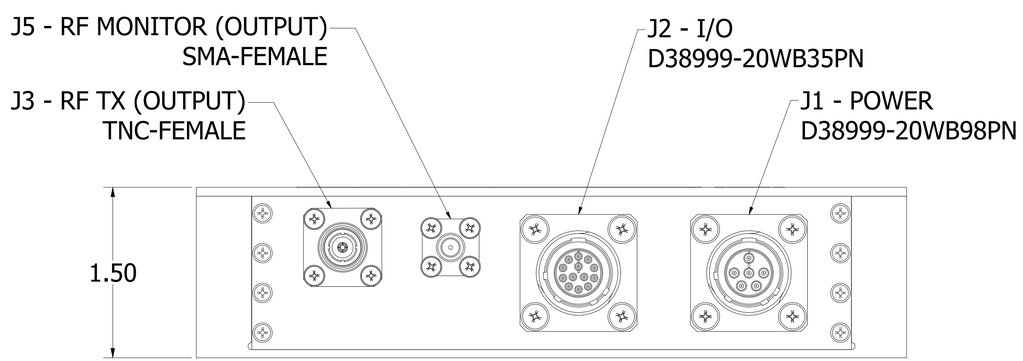
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A	RELEASED	06/16/22	TT/LU/DB

6X .164-32 UNC-3B HELICAL COIL
INSERT THD PER NASM33537
.29 MIN FULL THD DEPTH
(BOTH SIDES)

6X MS21209C0810L
INSTALL INSERT .25-.50 TURNS
BELOW SURFACE. REMOVE TANG
(BOTH SIDES)





RF EXCITER

Carrier RF Frequency:	370.0-380.0 & 400.0-450.0MHz in 1.0kHz Steps
RF Output Power:	-5 to +10dBm in 0.5dB Steps
Carrier Frequency Stability:	±0.0005% (±5PPM) Maximum over environmental conditions and 24 hours
RF Output Impedance:	50Ω Nominal
RF Output VSWR:	1.50:1 Maximum (Ref 50Ω)
Deviation Ranges:	IRIG: ±10 to ±35kHz / Tone Adjustable EFTS: ±45kHz to ±55kHz
RF Output Harmonics/Spurious:	60dBc Minimum rejection
FM Deviation Response:	±0.5dB Maximum over 5-75kHz Tones

ENCODER

Types:	IRIG & EFTS
Number of Tones: IRIG:	20 Tones Up to 6 Simultaneous Tones
Tone Frequency Stability:	±0.01% Maximum
Turn On Stability:	Frequency Stable within 0.1% after 1 second
Tone Output Amplitude Variation:	±10% Maximum
Tone Output Distortion:	1% Maximum with any Tone Enabled
Tone Output Signal Delay:	5mSec Maximum from ACS to Stable Output within 0.1%sec.
Tone Output Monitor Impedance:	50Ω Nominal
EFTS Command Format:	64-bit Digital word per RCC 208-06
EFTS Message Format:	144-bit message frame per RCC 208-06
EFTS Bit & Message Rate:	50 messages per second
EFTS Encoding:	Manchester Bi-Phase Level Encoding per IRIG 106
EFTS Pre-Modulation Filtering:	4-pole linear phase filter with a bandwidth of 14.4kHz at the -3dB points.
EFTS Bit Rate Stability:	1,000 ppm Maximum
Status & Control:	Remote via USB Virtual Serial and Ethernet UDP/IP

ENVIRONMENTAL:

Operating Temperature Range:	-40 to +72°C
Operating relative Humidity:	0 – 100 % Condensing
Operating Altitude:	0-50,000 Feet
MTBF:	30,000 hours Minimum
DC Input:	+28VDC / 350mA Maximum
Weight:	1.5 lbs. Maximum

J1 - POWER			
PIN	SIGNAL NAME	I/O	ELECRICAL CHARACTERISTICS
A	28VDC	IN	28VDC Power Input per MIL-STD-704D
B	28VDC	IN	28VDC Power Input per MIL-STD-704D
C	28VDC	IN	28VDC Power Input per MIL-STD-704D
D	28VDC_RTN	REF	28VDC Power Input Return
E	28VDC_RTN	REF	28VDC Power Input Return
F	28VDC_RTN	REF	28VDC Power Input Return
SHELL	SHIELD	SLD	EMI Shield

J2 - I/O			
PIN	SIGNAL NAME	I/O	ELECRICAL CHARACTERISTICS
1	USB D+	BIDIR	Virtual COMM port +
2	USB +5V	OUT	
3	Discrete - BIT	OUT	Active Low
4	Discrete - Equipment Ready	OUT	Active Low
5	Signal Gnd	GND	Signal Ground (GND)
6	ETH 1 Rx +	BIDIR	Ethernet #1 10/100 Port
7	ETH 1 Tx +	BIDIR	Ethernet #1 10/100 Port
8	ETH 1 Tx -	BIDIR	Ethernet #1 10/100 Port
9	Signal Gnd	GND	Signal Ground (GND)
10	Spare		
11	USB D-	BIDIR	Virtual COMM port -
12	Signal Gnd	GND	Signal Ground (GND)
13	ETH 1 Rx -	BIDIR	Ethernet #1 10/100 Port
SHELL	SHIELD	SLD	EMI Shield

EXTERNAL INTERFACE CONNECTORS			
REF DES	DESCRIPTION	CONN TYPE	CONN MATE
J1	POWER	D38999-20WB98PN	D38999-26WB98SN
J2	I/O	D38999-20WB35PN	D38999-26WB35SN
J3	RF TX (OUT)	TNC-TYPE FEM	TNC-TYPE MALE
J5	RF MONITOR (OUT)	SMA-TYPE FEM	SMA-TYPE MALE

750-50696	EX2003
NEXT ASSEMBLY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
FRACTIONS ± 1/64 | DECIMALS .X± .1, .XX± .01, .XXX± .005 | ANGLES ±0°30' | HOLES .XX± .005, .XXX +.003 -.001
MACHINED FINISH: 32 RMS
REMOVE BURRS .005 MAX
MATERIAL: -
FINISH: -
DO NOT SCALE DRAWING

APPROVALS	DATE
DRAWN TONY T	6/16/2022
CHECKED DB	6/16/2022
MECH ENGR TT	6/16/2022
ELEC ENGR LU	6/16/2022
PRODUCTION AM	6/16/2022
Q.A. SG	6/16/2022

WV Communications
1125 A Business Center Circle
Newbury Park, CA

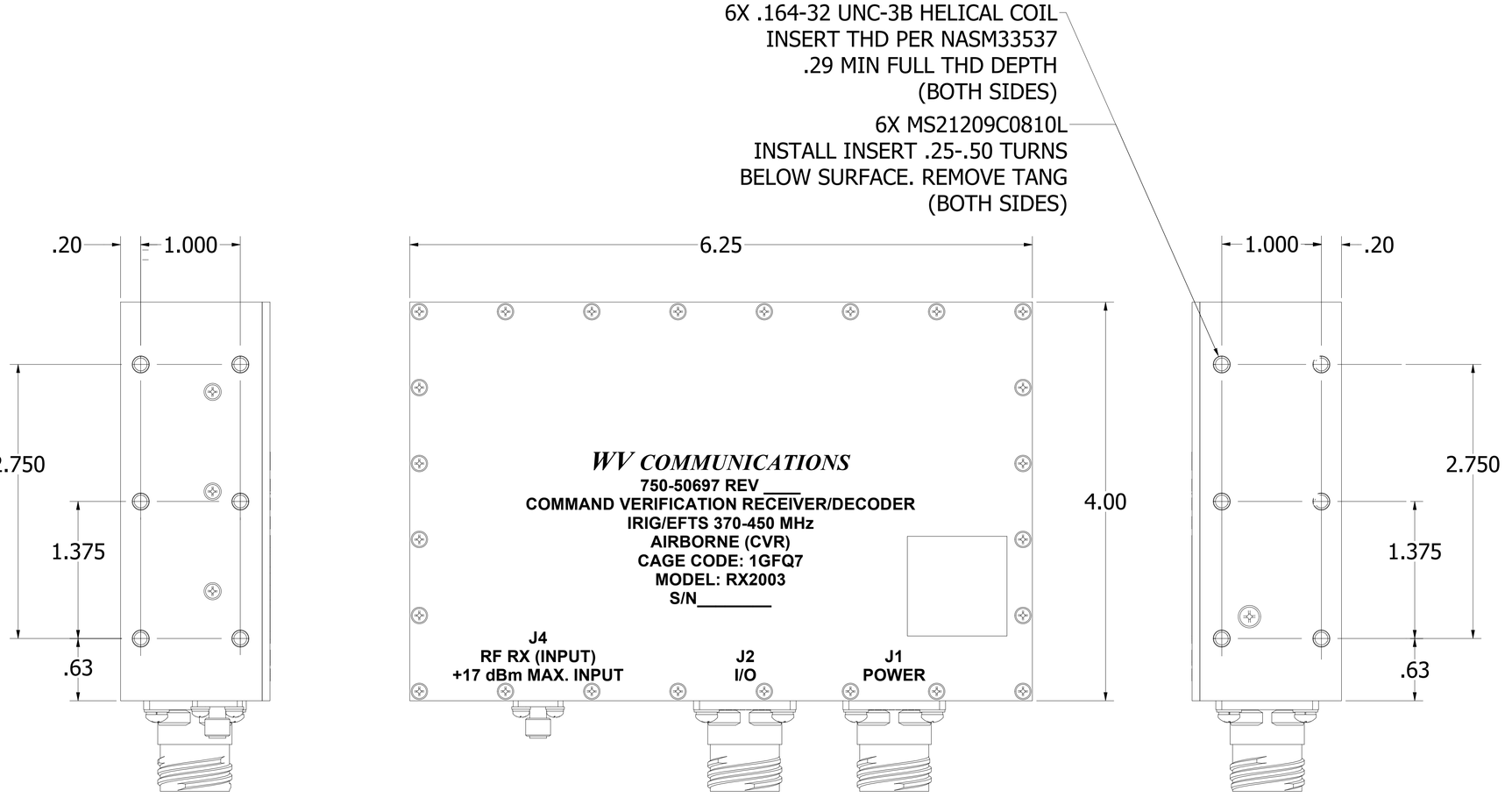
MODULE COMMAND EXCITER/ENCODER
IRIG/EFTS 370-450 MHz AIRBORNE (CEE)
MODEL: EX2003

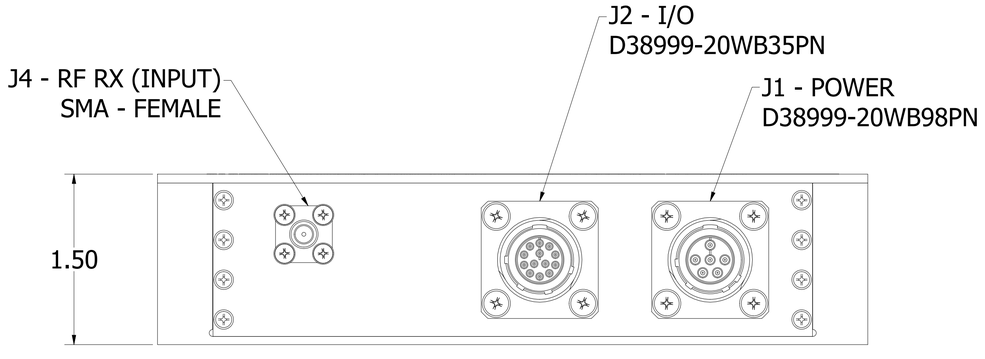
SIZE	CAGE CODE	DWG. NO.	REV
D	1GFQ7	050-51169	A

SCALE	MODEL NO.	SHEET
NONE	EX2003	1 OF 1

REV A
DWG NO. 050-51169

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A	RELEASED	06/16/22	TT/LU/DB





Frequency Range: 370-380 & 400-450MHz in 1.0kHz Steps
LO Frequency Stability: ±0.0005% (±5PPM) Maximum over 24 hours
Noise Figure: 6dB Maximum
Spurious & Image Rejection: -60dBc Maximum
LO Re-radiation: -60dBm Maximum
RF Input Impedance: 50Ω Nominal
RF Input VSWR: 1.50:1 Maximum (Ref 50Ω)
RF Input Dynamic Range: 0 to +13dBm
Sig. Strength/Dev. Indication: Ethernet
Sig. Strength Accuracy: ±2dB Maximum
Peak Dev. Reporting Accuracy: ±10% Maximum of received carrier dev.
IF Filter 3 dB Bandwidth: 290 ± 50kHz (Virtual)
IF Filter 60 dB Bandwidth: 1500 ± 150kHz (Virtual)

IRIG DECODER

Number of Tones: 20 IRIG Tones
-2 dB Tone Bandwidth: ±1% Minimum
-20 dB Tone Bandwidth: ±4% Minimum
Simultaneous Tone Detection: Up to 6 Tones
Decoder Carrier Deviation: ±30kHz/Tone Nominal (±20 to ±35kHz range)
Decoder Response Time: 10ms Maximum
Decoder Output: Via Ethernet
Decoder Action: Continuous indication while a tone is received
Tone Duration: 20ms Minimum

EFTS DECODER

Three Modes: Decrypted, Error corrected raw decrypted, Decoded to commands & fields
Decoder Carrier Deviation: ±50kHz Nominal (±45kHz to ±55kHz range)
Command Format: 64-bit digital word per RCC 208-06
Message Format: 144-bit msg frame per RCC 208-06
Bit & Message Rate: 50 messages/second
Decoding: Manchester Bi-Ø Level 1 Decoding per IRIG 106

ENVIRONMENTAL:

Operating Temperature Range: -40 to +72°C
Operating relative Humidity: 0 – 100 % Condensing
Operating Altitude: 0-50,000 Feet
MTBF: 24,000 hours Minimum
DC Input: +28VDC / 350Ma Maximum
Weight: 1.5 lbs. Maximum

J2 - I/O			
PIN	SIGNAL NAME	I/O	ELECRICAL CHARACTERISTICS
1	USB D+	BIDIR	Virtual COMM port +
2	USB +5V	OUT	
3	Discrete - BIT	OUT	Active Low
4	Discrete - Equipment Ready	OUT	Active Low
5	Signal Gnd	GND	Signal Ground (GND)
6	ETH 1 Rx +	BIDIR	Ethernet #1 10/100 Port
7	ETH 1 Tx +	BIDIR	Ethernet #1 10/100 Port
8	ETH 1 Tx -	BIDIR	Ethernet #1 10/100 Port
9	Signal Gnd	GND	Signal Ground (GND)
10	Discrete - Carrier detect	IN	Discrete - Carrier detect
11	USB D-	BIDIR	Virtual COMM port -
12	Signal Gnd	GND	Signal Ground (GND)
13	ETH 1 Rx -	BIDIR	Ethernet #1 10/100 Port
SHELL	SHIELD	SLD	EMI Shield

J1 - POWER			
PIN	SIGNAL NAME	I/O	ELECRICAL CHARACTERISTICS
A	28VDC	IN	28VDC Power Input per MIL-STD-704D
B	28VDC	IN	28VDC Power Input per MIL-STD-704D
C	28VDC	IN	28VDC Power Input per MIL-STD-704D
D	28VDC_RTN	REF	28VDC Power Input Return
E	28VDC_RTN	REF	28VDC Power Input Return
F	28VDC_RTN	REF	28VDC Power Input Return
SHELL	SHIELD	SLD	EMI Shield

EXTERNAL INTERFACE CONNECTORS			
REF DES	DESCRIPTION	CONN TYPE	CONN MATE
J1	POWER	D38999-20WB98PN	D38999-26WB98SN
J2	I/O	D38999-20WB35PB	D38999-26WB35SB
J4	RF RX (INPUT)	SMA-TYPE FEM	SMA-TYPE MALE

750-50697	RX2003
NEXT ASSEMBLY	USED ON
APPLICATION	DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
FRACTIONS ± 1/64 | DECIMALS X± .1, XX± .01, XXX± .005 | ANGLES ± 0°30' | HOLES XX± .005, XXX +.003 -.001
MACHINED FINISH: 32 RMS
REMOVE BURRS .005 MAX
MATERIAL: -
FINISH: -

APPROVALS	DATE
DRAWN TONY T	6/16/2022
CHECKED DB	6/16/2022
MECH ENGR TT	6/16/2022
ELEC ENGR LU	6/16/2022
PRODUCTION AM	6/16/2022
Q.A. SG	6/16/2022

WV Communications
1125 A Business Center Circle
Newbury Park, CA

MODULE COMMAND VERIFICATION RECEIVER/DECODER
IRIG/EFTS 370-450 MHz AIRBORNE (CVR)
MODEL: RX2003

SIZE	CAGE CODE	DWG. NO.	REV
D	1GFQ7	050-51170	A

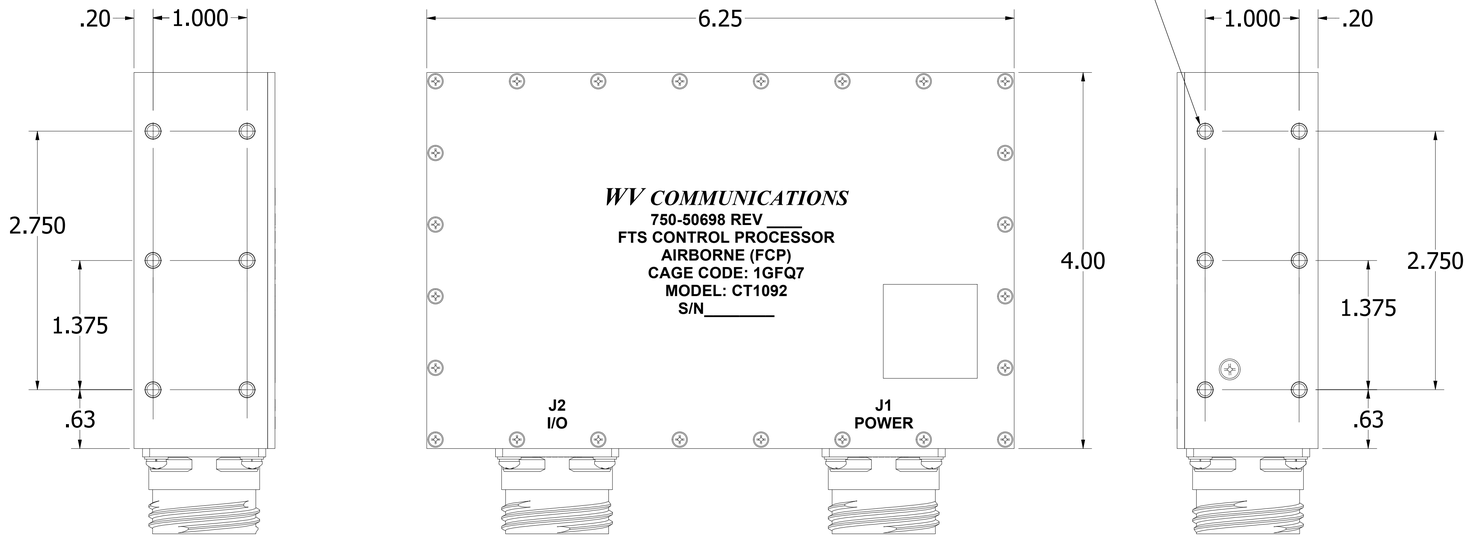
SCALE	MODEL NO.	SHEET
NONE	EX2003	1 OF 1

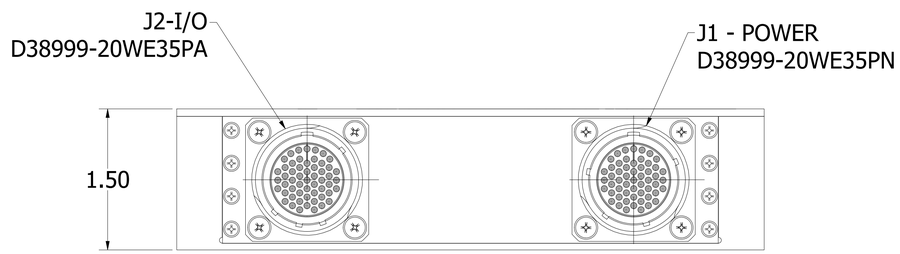
REV A
050-51170
DWG NO.

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A	RELEASED	06/16/22	TT/LU/DB

6X .164-32 UNC-3B HELICAL COIL
INSERT THD PER NASM33537
.29 MIN BOTTOM TAP DEPTH
(BOTH SIDES)

6X MS21209C0810L
INSTALL INSERT .25-.50 TURNS
BELOW SURFACE. REMOVE TANG
(BOTH SIDES)





SPECIFICATIONS:

ENCRYPTION DEVICE:	Triple Data Encryption Standard (DES) Unit (TDU)
STATUS AND CONTROL:	Remote via RS-232 and Ethernet UDP/IP

ENVIROMENTAL:

OPERATING TEMPERATURE RANGE:	-40 to +72°C
OPERATING RELATIVE HUMIDITY:	0-100 % Condensing
OPERATING ALTITUDE:	0-50,000 feet
MTBF:	30,000 hours Minimum
DC INPUT:	+28VDC (120mA)
WEIGHT	1.5 lbs. Maximum

J2 - I/O			
PIN	SIGNAL NAME	I/O	ELECTRICAL CHARACTERISTICS
1	Spare		
2	Spare		
3	Signal Gnd	GND	Maintenance RS-232 Signal Ground (GND)
4	Spare		
5	Spare		
6	Spare		
7	Signal Gnd	GND	Signal Ground (GND)
8	Signal Gnd	GND	Signal Ground (GND)
9	RS-232 TX	OUT	TDU Red RS-232 TX (FCP Reply to TDU)
10	Spare		
11	Spare		
12	Spare		
13	Spare		
14	Spare		
15	Spare		
16	RS-232 RX	IN	TDU Red RS-232 (TDU Reply to FCP)
17	Signal Gnd	GND	Signal Ground (GND)
18	ETH 1 Tx +	BIDIR	Ethernet #1 10/100 Port (Tx+)
19	ETH 1 Tx -	BIDIR	Ethernet #1 10/100 Port (Tx-)
20	Spare		
21	Spare		
22	Signal Gnd	GND	Signal Ground (GND)
23	Signal Gnd	GND	Signal Ground (GND)
24	Signal Gnd	GND	Signal Ground (GND)
25	Signal Gnd	GND	Signal Ground (GND)
26	ETH 1 Rx +	BIDIR	Ethernet #1 10/100 Port (Rx+)
27	ETH 1 Rx -	BIDIR	Ethernet #1 10/100 Port (Rx-)
28	Spare		
29	Spare		
30	Signal Gnd	GND	Signal Ground (GND)
31	IRIG TIMECODE AC In	IN	IRIG Time Code (B) AC In
32	Signal Gnd	GND	Signal Ground (GND)
33	ETH 2 Tx +	BIDIR	Ethernet #1 10/100 Port (Tx+)
34	ETH 2 Tx -	BIDIR	Ethernet #1 10/100 Port (Tx-)
35	Spare		
36	Spare		
37	Spare		
38	Signal Gnd	GND	Signal Ground (GND)
39	Signal Gnd	GND	Signal Ground (GND)
40	ETH 2 Rx +	BIDIR	Ethernet #2 (Rx+) 10/100 Port
41	ETH 2 Rx -	BIDIR	Ethernet #2 (Rx-) 10/100 Port
42	Spare		
43	Spare		
44	Signal Gnd	GND	Signal Ground (GND)
45	Signal Gnd	GND	Signal Ground (GND)
46	RS-232 TX	OUT	TDU Black RS-232 (FCP Reply to TDU)
47	Signal Gnd	GND	Signal Ground (GND)
48	USB +5V	OUT	
49	Signal Gnd	GND	Signal Ground (GND)
50	Signal Gnd	GND	Signal Ground (GND)
51	Spare		
52	RS-232 RX	IN	TDU Black RS-232 (TDU Reply to FCP)
53	USB D+	BIDIR	Virtual COMM port +
54	USB D-	BIDIR	Virtual COMM port -
55	Signal Gnd	GND	Signal Ground (GND)

J1 - POWER			
PIN	SIGNAL NAME	I/O	ELECTRICAL CHARACTERISTICS
1	28VDC	IN	28VDC Power Input per MIL-STD-704D
2	28VDC	IN	28VDC Power Input per MIL-STD-704D
3	28VDC	IN	28VDC Power Input per MIL-STD-704D
4	28VDC_RTN	REF	28VDC Power Input Return
5	28VDC_RTN	REF	28VDC Power Input Return
6	28VDC	IN	28VDC Power Input per MIL-STD-704D
7	28VDC	IN	28VDC Power Input per MIL-STD-704D
8	TDU Sense	IN	Grounded on TDU to provide sense detection
9	Discrete - BIT	OUT	Active Low
10	28VDC_RTN	REF	28VDC Power Input Return
11	28VDC_RTN	REF	28VDC Power Input Return
12	28VDC_RTN	REF	28VDC Power Input Return
13	Signal Gnd	GND	Signal Ground (GND)
14	TDU Power Return	GND	TDU power/signal return
15	TDU Power	OUT	12 Volts to TDU
16	Discrete - Equipment Ready	OUT	Active Low
17	Signal Gnd	GND	Signal Ground (GND)
18	Discrete - Command Bit 0	OUT	EFTS Mode: User Command Bit 0 IRIG Mode: Tone 1, Active Low
19	Discrete - Command Bit 1	OUT	EFTS Mode: User Command Bit 1 IRIG Mode: Tone 2, Active Low
20	Discrete - Command Bit 2	OUT	EFTS Mode: User Command Bit 2 IRIG Mode: Tone 3, Active Low
21	Discrete - Command Bit 3	OUT	EFTS Mode: User Command Bit 3 IRIG Mode: Tone 4, Active Low
22	TDU Power Return	GND	TDU power/signal return
23	TDU Power	OUT	12 Volts to TDU
24	Signal Gnd	GND	Signal Ground (GND)
25	Signal Gnd	GND	Signal Ground (GND)
26	Discrete - Command Bit 4	OUT	EFTS Mode: User Command Bit 4 IRIG Mode: Tone 5, Active Low
27	Discrete - Command Bit 5	OUT	EFTS Mode: User Command Bit 5 IRIG Mode: Tone 6, Active Low
28	Discrete - User Defined Bit 0	OUT	EFTS Mode: User Defined Bit 0 IRIG Mode: Tone 7, Active Low
29	Discrete - User Defined Bit 1	OUT	EFTS Mode: User Defined Bit 1 IRIG Mode: Tone 8, Active Low
30	Discrete - User Defined Bit 2	OUT	EFTS Mode: User Defined Bit 2 IRIG Mode: Tone 9, Active Low
31	Signal Gnd	GND	Signal Ground (GND)
32	Signal Gnd	GND	Signal Ground (GND)
33	Discrete – IRIG Tone 13	OUT	EFTS Mode: Not used IRIG Mode Only – Tone 13, Active Low
34	Discrete – IRIG Tone 14	OUT	EFTS Mode: Not used IRIG Mode Only – Tone 14, Active Low
35	Discrete – IRIG Tone 15	OUT	EFTS Mode: Not used IRIG Mode Only – Tone 15, Active Low
36	Discrete - User Defined Bit 3	OUT	EFTS Mode: User Defined Bit 3 IRIG Mode: Tone 10, Active Low
37	Discrete - User Defined Bit 4	OUT	EFTS Mode: User Defined Bit 4 IRIG Mode: Tone 11, Active Low
38	Discrete - User Defined Bit 5	OUT	EFTS Mode: User Defined Bit 5 IRIG Mode: Tone 12, Active Low
39	Signal Gnd	GND	Signal Ground (GND)
40	Signal Gnd	GND	Signal Ground (GND)
41	Discrete – IRIG Tone 16	OUT	EFTS Mode: Not used IRIG Mode Only – Tone 16, Active Low
42	Discrete – IRIG Tone 17	OUT	EFTS Mode: Not used IRIG Mode Only – Tone 17, Active Low
43	Discrete – IRIG Tone 18	OUT	EFTS Mode: Not used IRIG Mode Only – Tone 18, Active Low
44	Discrete – IRIG Tone 19	OUT	EFTS Mode: Not used IRIG Mode Only – Tone 19, Active Low
45	Discrete – IRIG Tone 20	OUT	EFTS Mode: Not used IRIG Mode Only – Tone 20, Active Low
46	Signal Gnd	GND	Signal Ground (GND)
47	Signal Gnd	GND	Signal Ground (GND)
48	TDU Lamp Test	IN	
49	Spare		
50	Spare		
51	Spare		
52	Signal Gnd	GND	Signal Ground (GND)
53	Signal Gnd	GND	Signal Ground (GND)
54	Signal Gnd	GND	Signal Ground (GND)
55	Signal Gnd	GND	Signal Ground (GND)
Shell	SHIELD	SLD	EMI Shield

EXTERNAL INTERFACE CONNECTORS			
REF DES	DESCRIPTION	CONN TYPE	CONN MATE
J1	POWER	D38999-20WE35PN	D38999-26WE35SN
J2	I/O	D38999-20WE35PA	D38999-26WE35SA

750-50698	CT1092
NEXT ASSEMBLY	USED ON
APPLICATION	DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
FRACTIONS ± 1/64 | DECIMALS .X ±.1, .XX ±.01, .XXX ±.005 | ANGLES ±0°30' | HOLES .XX ±.005, .XXX +.003 -.001
MACHINED FINISH: 32 RMS
REMOVE BURRS .005 MAX
MATERIAL: -
FINISH: -

APPROVALS	DATE
DRAWN TONY T	6/16/2022
CHECKED DB	6/16/2022
MECH ENGR TT	6/16/2022
ELEC ENGR LU	6/16/2022
PRODUCTION AM	6/16/2022
Q.A. SG	6/16/2022

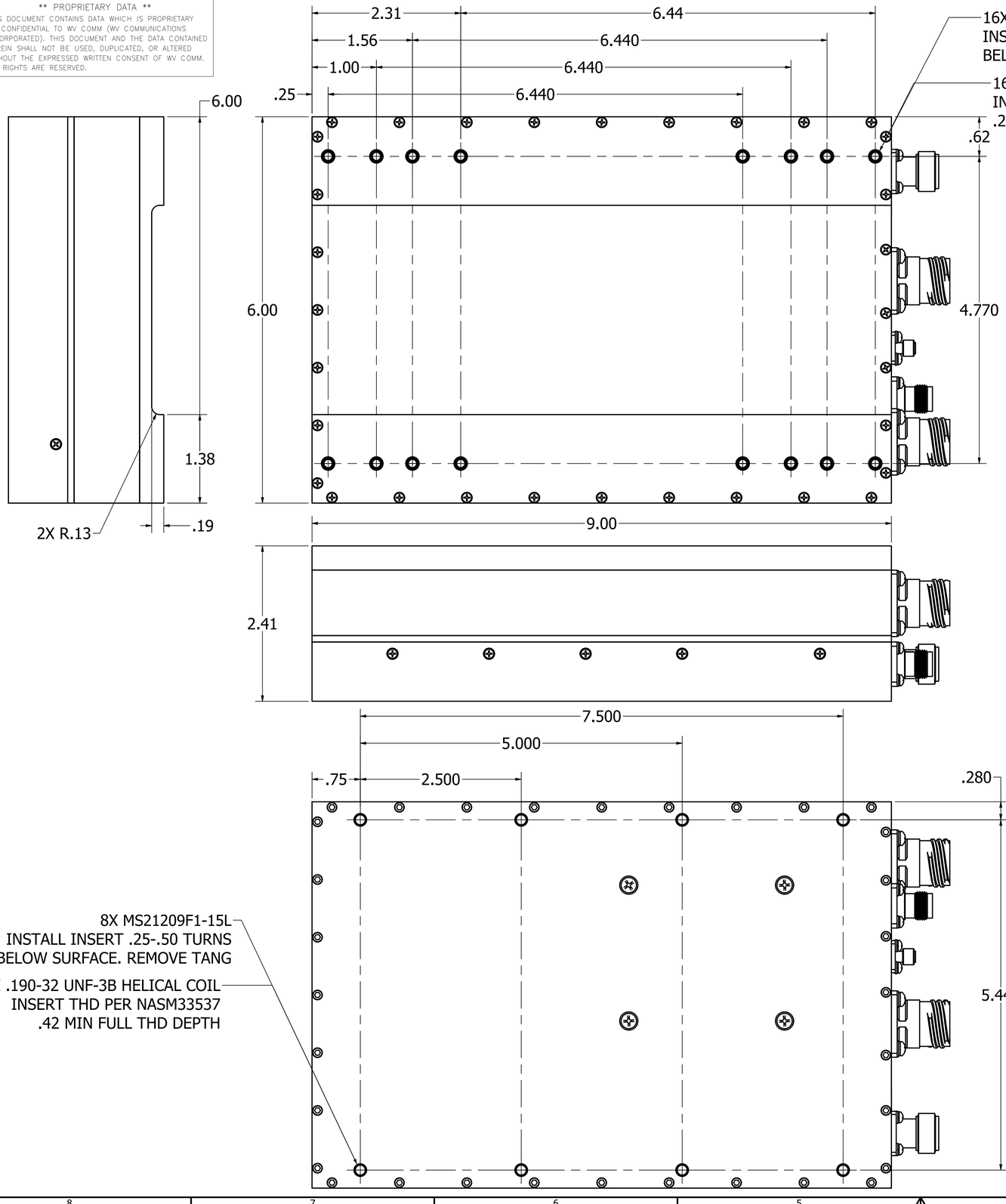
WV Communications
1125 A Business Center Circle
Newbury Park, CA

MODULE FTS CONTROL PROCESSOR
AIRBORNE (FCP)
MODEL: CT1092

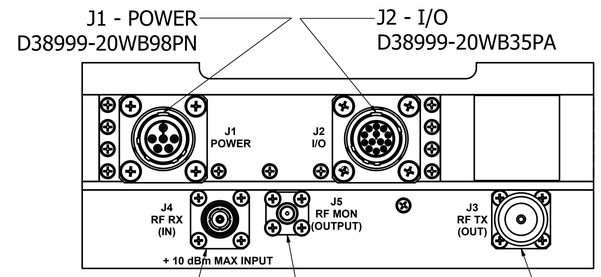
SIZE	CAGE CODE	DWG. NO.	REV
D	1GFQ7	050-51171	A
SCALE NONE	MODEL NO. CT1092	SHEET 1 OF 1	

REV A
050-51171
[DWG TYPE]

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A	RELEASE	06/15/22	TT/LU/DB



OPERATING FREQUENCY RANGE:	370-450MHz
RF OUTPUT POWER (COMBINED):	200W Minimum @ P1dB Comp Pt
GAIN:	58dB Minimum @ P1dB Comp Pt
RF INPUT POWER RANGE:	-5 to +3dBm (0dBm Nominal)
RF INPUT POWER W/O DAMAGE:	+10dBm Maximum
SMALL SIGNAL GAIN FLATNESS:	±1dB Maximum Into 1.25:1 VSWR
INPUT AND OUTPUT IMPEDANCE	50Ω Nominal
INPUT VSWR	2.0:1 Maximum
HARMONIC SIGNAL LEVELS	-80dBc Maximum over 750-2750MHz
SPURIOUS SIGNAL LEVELS:	-60dBc Maximum
TEMPERATURE RANGES:	Operating -20 to +50°C
COOLING REQUIRED:	Via Baseplate Conduction
OVERTEMPERATURE PROTECTION:	Thermostat Shut-Off & Indication at +100°C Heatsink Temperature
ALTITUDE	MSL to 50,000 Ft
DC INPUT POWER:	+28±2Vdc at 500W Maximum at 200W output power



J1 - POWER			
PIN	SIGNAL NAME	I/O	ELECRICAL CHARACTERISTICS
A	28VDC	IN	28VDC Power Input per MIL-STD-704D
B	28VDC	IN	28VDC Power Input per MIL-STD-704D
C	28VDC	IN	28VDC Power Input per MIL-STD-704D
D	28VDC_RTN	REF	28VDC Power Input Return
E	28VDC_RTN	REF	28VDC Power Input Return
F	28VDC_RTN	REF	28VDC Power Input Return
SHELL	SHIELD	SLD	EMI Shield

EXTERNAL INTERFACE CONNECTORS			
REF DES	DESCRIPTION	CONN TYPE	CONN MATE
J1	POWER	D38999-20WB98PN	D38999-26WB98SN
J2	I/O	D38999-20WB35PA	D38999-26WB35SA
J3	RF TX (OUT)	N-FEMALE	N-MALE
J4	RF RX (IN)	TNC-FEMALE	TNC-MALE
J5	RF MONITOR (OUT)	SMA-FEMALE	SMA-MALE

J2 - I/O			
PIN	SIGNAL NAME	I/O	ELECRICAL CHARACTERISTICS
1	USB D+	BIDIR	Virtual COMM port +
2	USB +5V	OUT	
3	Discrete - BIT	OUT	Active Low
4	Discrete - Equipment Ready	OUT	Active Low
5	Signal Gnd	GND	Signal Ground (GND)
6	ETH 1 Rx +	BIDIR	Ethernet #1 10/100 Port
7	ETH 1 Tx +	BIDIR	Ethernet #1 10/100 Port
8	ETH 1 Tx -	BIDIR	Ethernet #1 10/100 Port
9	Signal Gnd	GND	Signal Ground (GND)
10	Discrete - HPA RF Out Inhibit	IN	Optically Isolated 28VDC Active High
11	USB D-	BIDIR	Virtual COMM port -
12	Discrete - Inhibit Return	RTN	Isolated Return
13	ETH 1 Rx -	BIDIR	Ethernet #1 10/100 Port
SHELL	SHIELD	SLD	EMI Shield

750-50695	PA1055
NEXT ASSEMBLY	USED ON
APPLICATION	DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
FRACTIONS ± 1/64 | DECIMALS .X± .1, .XX± .01, .XXX± .005 | ANGLES ± 0°30' | HOLES .XX± .005, .XXX +.003 -.001
MACHINED FINISH: 32 RMS REMOVE BURRS .005 MAX
MATERIAL: - / -
FINISH: - / -

APPROVALS	DATE
DRAWN TONY T.	6/9/2022
CHECKED TT	6/9/2022
MECH ENGR TT	6/9/2022
ELEC ENGR LU	6/9/2022
PRODUCTION AM	6/9/2022
Q.A. SG	6/9/2022

WV Communications 1125 A Business Center Circle Newbury Park, CA

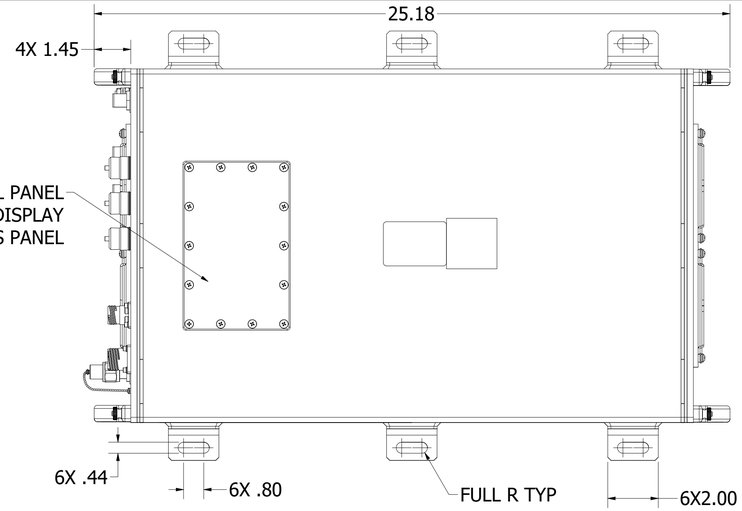
MODULE POWER AMPLIFIER SOLID STATE
370-450 MHz 200W AIRBORNE (HPA)
MODEL: PA1055

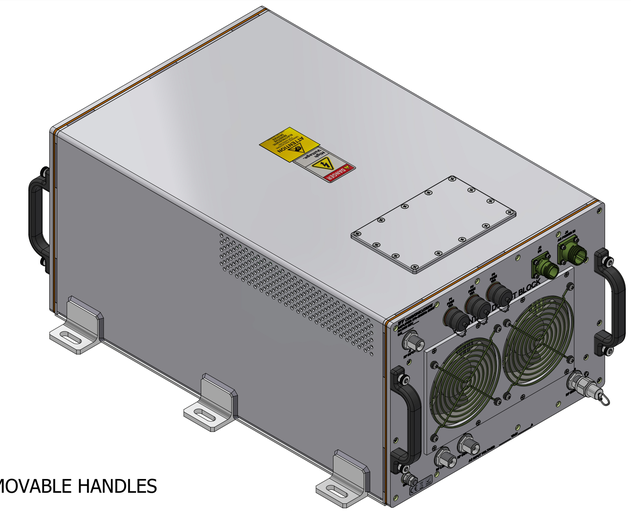
SIZE	CAGE CODE	DWG. NO.	REV
D	1GFQ7	050-51168	A

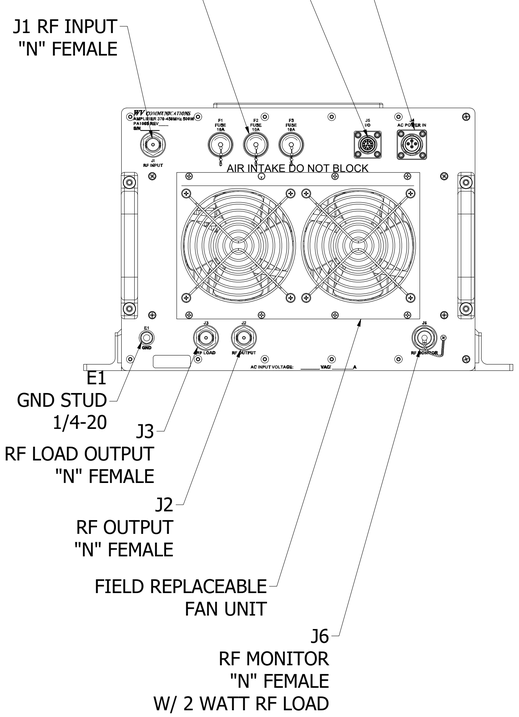
SCALE	MODEL NO.	SHEET
NONE	PA1055	1 OF 1

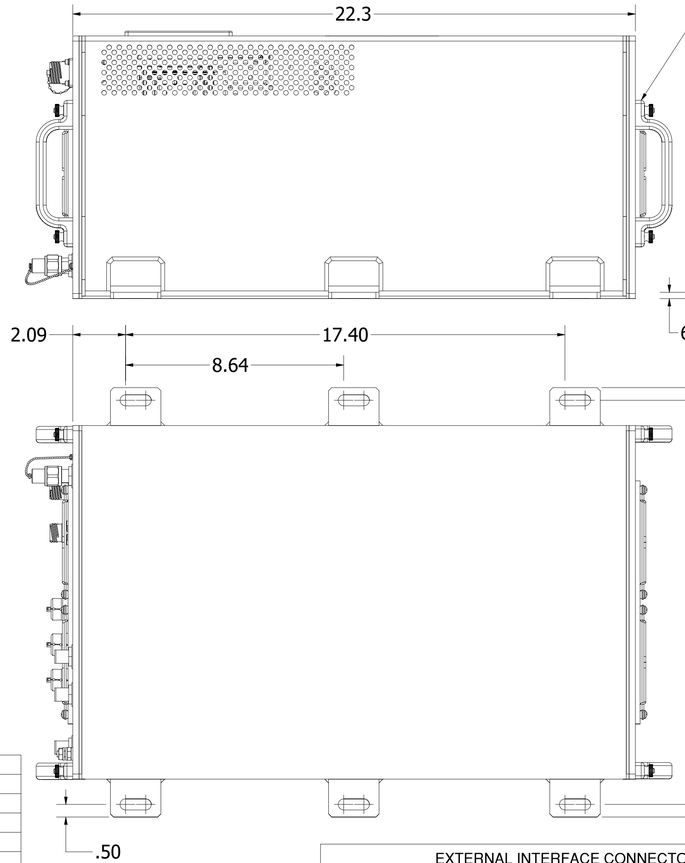
REV A
050-51168
DWG NO.

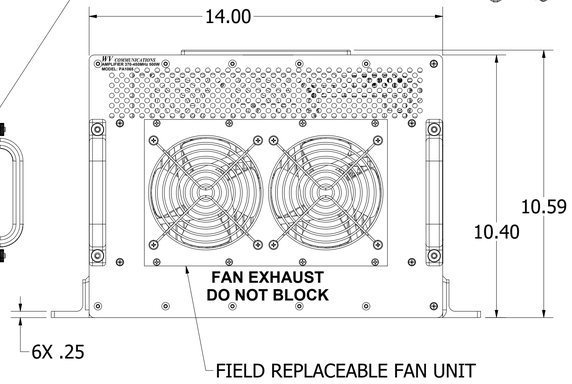
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A	RELEASED	7/10/2024	TT











SPECIFICATIONS SUMMARY

OPERATING FREQUENCY RANGES:	370-450MHz
RF OUTPUT POWER:	500W Minimum at P1dB Compression Point
RF OUTPUT PROTECTION:	Integral Output Isolator protected No Oscillation at any Phase Angle at any Load Impedance
RF INPUT POWER:	-5dBm to +3dBm Nominal Range
MAXIMUM RF INPUT POWER:	+10dBm Maximum W/O Damage
SMALL SIGNAL GAIN FLATNESS:	±1.5dB Maximum Into 1.05:1 VSWR
INPUT AND OUTPUT IMPEDANCE:	50Ω Nominal
INPUT VSWR:	2.0:1 Maximum (Ref 50Ω)
HARMONIC SIGNAL LEVELS:	Integral Low Pass Filter -60dBc Maximum from 740 – 2750MHz
SPURIOUS SIGNAL LEVELS:	-55dBc Maximum
RF OUTPUT CONNECTOR:	Type N Female
OUTPUT POWER CONTROL:	23dB Minimum
RF OUTPUT TURN-ON-TIME:	50mSec Maximum after RF power command received
LOCAL CONTROL:	Via Color Touchscreen LCD Display
REMOTE CONTROL:	Via Ethernet UDP, Virtual Serial USB
COOLING:	Forced air via integral Front Panel Intake and Rear Panel Exhaust Fans
OVER TEMPERATURE PROTECTION:	System shut down when Heatsink temperature reaches 85°C
TEMPERATURE RANGES:	Operating 0 to +50°C Storage -40 to +70°C
ALTITUDE:	MSL to 30,000 Ft
CHASSIS DEPTH:	26.75" Maximum
AC INPUT POWER:	180-264VAC, 47-400Hz 3 Phase, 1.5kW Maximum
WEIGHT:	100 LBs Nominal
FRONT PANEL PAINT:	Grey 26307 FED-STD-595A

J5 - I/O			
PIN	SIGNAL NAME	I/O	ELECRICAL CHARACTERISTICS
1	USB D+	BIDIR	Virtual COMM port +
2	USB +5V	OUT	
3	Discrete - BIT	OUT	Active Low
4	Discrete - Equipment Ready	OUT	Active Low
5	Signal Gnd	GND	Signal Ground (GND)
6	ETH 1 Rx +	BIDIR	Ethernet #1 10/100 Port
7	ETH 1 Tx +	BIDIR	Ethernet #1 10/100 Port
8	ETH 1 Tx -	BIDIR	Ethernet #1 10/100 Port
9	Signal Gnd	GND	Signal Ground (GND)
10	Discrete - HPA RF Out Inhibit	IN	Optically Isolated 28VDC Active High
11	USB D-	BIDIR	Virtual COMM port -
12	Discrete - Inhibit Return	RTN	Isolated Return
13	ETH 1 Rx -	BIDIR	Ethernet #1 10/100 Port
SHELL	SHIELD	SLD	EMI Shield

AC POWER CONNECTOR - J4	
PIN LTR	DESCRIPTION
A	LINE 1
B	LINE 2
C	LINE 3
D	SAFETY GROUND

EXTERNAL INTERFACE CONNECTORS			
REF DES	DESCRIPTION	CONNECTOR TYPE	MATING CONNECTOR TYPE
J1	RF INPUT	N-F	N-M
J2	RF OUTPUT	N-F	N-M
J3	RF LOAD OUTPUT	N-F	N-M
J4	AC POWER INPUT	D38999/20MC4PN	D38999/26MC4SN
J5	I/O	D38999/20WB35PA	D38999/26WB35SA
J6	RF MONITOR	N-F	N-M

900-50592	PA1065
NEXT ASSEMBLY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
FRACTIONS ± 1/64 | DECIMALS X± .1, XX± .01, XXX± .005 | ANGLES ± 0° 30' | HOLES XX± .005, XXX +.003 -.001
MACHINED FINISH: 32 RMS
REMOVE BURRS .005 MAX
MATERIAL -
FINISH -
DO NOT SCALE DRAWING

APPROVALS	DATE
DRAWN TONY T	7/10/2024
CHECKED TT	7/10/2024
MECH ENGR TT	7/10/2024
ELEC ENGR LU	7/10/2024
PRODUCTION AM	7/10/2024
Q.A. SG	7/10/2024

WV Communications 1125 A Business Center Circle Newbury Park, CA

AMPLIFIER 370-450MHz 500W
AIRBORNE COMPACT SSPA
MODEL: PA1065

SIZE	CAGE CODE	DWG. NO.	REV
D	1GFQ7	050-51233	A
SCALE NONE	Model No. PA1065	SHEET 1 OF 1	

REV A
050-51233
DWG NO. A