

TA4010

4400-5000MHz 50W POWER AMPLIFIER

DESCRIPTION

This class AB GaN module is designed for both military and commercial applications. It is capable of supporting any signal type and modulation format, including but not limited to 3-4G telecom, WLAN, OFDM, DVB, and CW/AM/FM. The latest device technologies and design methods are employed to offer high power density, efficiency, and linearity in a small, lightweight package.



FEATURES

Forward Power Measurement	Over-Temperature Protection
Temp. Monitor Output	Optional Heatsink
Status Monitor	
Over / Under / Reverse Voltage Protection	

Specifications subject to change without notice. Typical performance at VDC +25°C, and in a 50Ω system.

RF / ELECTRICAL				
PARAMETER	MIN	TYP.	MAX	UNIT
Operating Frequency	4400		5000	MHz
PSat Power Output		+47.0		dBm
Gain		28.0		dB
Gain Flatness		1.0		dB ¹
Input Return Loss	-15			dB
Operating Voltage	+12		+28	VDC
Switching Time		1.0	2.0	uS

1 – Gain flatness recorded represents a peak-peak measurement across the **entire operating band**. Gain flatness is typically much lower across significant portions of this band. Consult the gain response plots for details if available.

MECHANICAL

PARAMETER	VALUE	UNIT
Dimensions (L x W x H)	5.3 x 3.25 x 0.6	in
RF Connectors (Input / Output)	SMA-F / SMA-F	--
DC / Control Connector	21 Pin Micro-D	--
Cooling	Baseplate Conduction - Optional Heatsink Available	--
Mounting	4-40 Thru Holes	--
Weight	13	oz.
Weight with Heatsink	35	oz.

ENVIRONMENTAL / PROTECTIONS

PARAMETER	MIN	MAX	UNIT
Operating Temp. (Housing Temp.)	-40	+85	°C
Humidity Range	0-95		%
Altitude	0-30,000		ft.
Shock / Vibration	MIL-STD-810 and equivalents		--
Max RF Input	+17		dBm
PA Baseplate Shutoff Temperature	+ 85		°C

INPUT/OUTPUT PINS

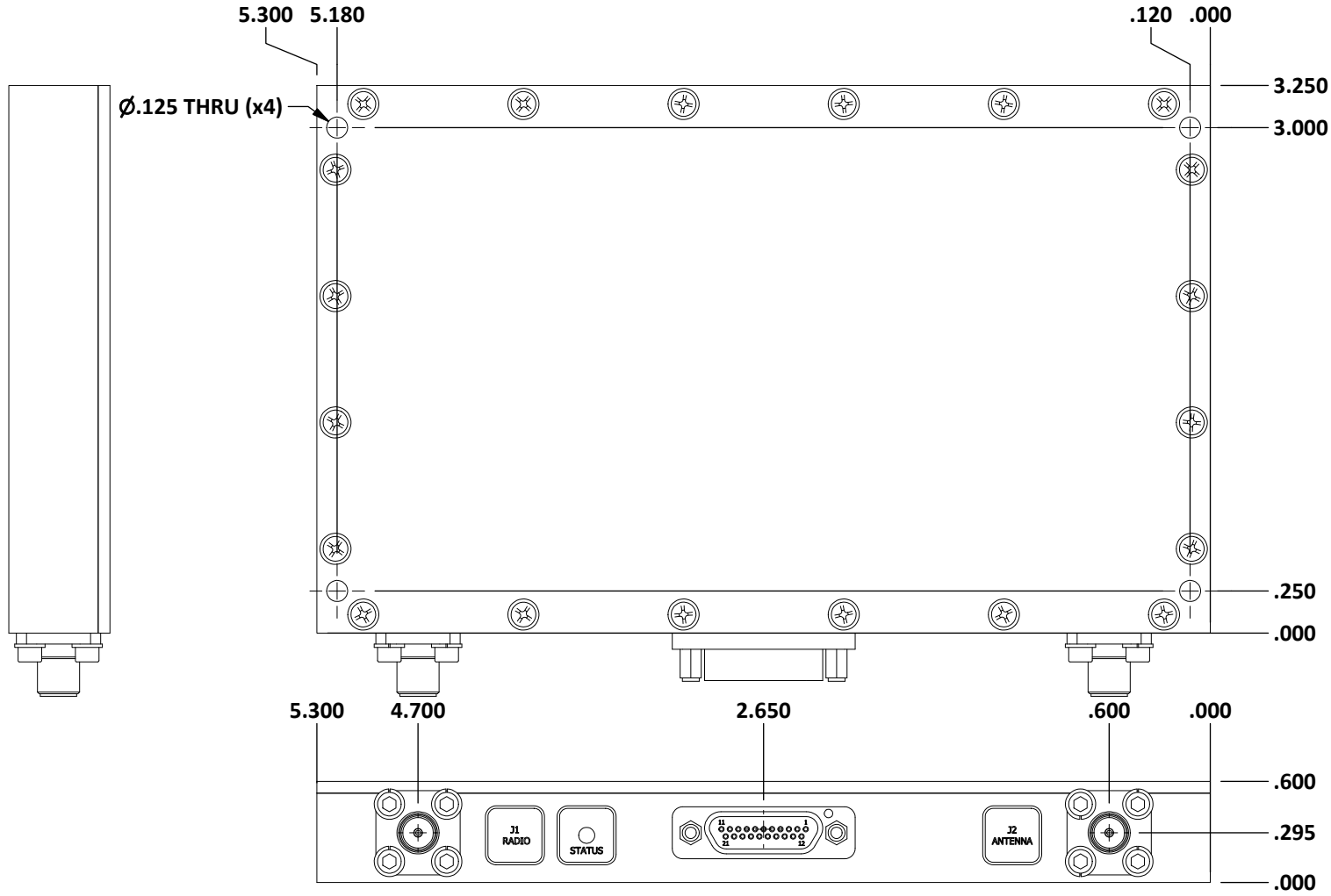
AMPLIFIER CONNECTOR TYPE:		21 PIN MICRO-D FEMALE
TRIAD CABLE PART NUMBER:		CBL58
PIN NUMBER	LABEL	DESCRIPTION
1-3,12-13	+VDC	Supply Voltage - Range Specified in Datasheet
4	FWD DET	Tx Amp RMS Power Detector
5	TEMP	Temp Monitor: Temp in DegC = (Vout - 0.5V) * 100
6	RAD DET	Radio Input RMS Power Detector
9-11,20-21	GND	+VDC Supply Return
7	Status	Amplifier Status - TTL High = Normal Operation, TTL Low = Error Condition
8	Amp Enable	TTL Hi or No Connection = Enable, TTL Lo = Disable
19	SGND	Signal Ground
14-18	Reserved	Reserved for future use

Configuration Options

Model Number	Description
TA4010	No Heat Sink Included
TA4010 – HS	Standard Heat Sink
TA4010 – HSF	Heat Sink with Integrated Cooling Fan
TA4010 – HSX	Custom Heat Sink Configuration
TA4010 – DOX	Custom Amplifier Configuration (issued by Triad upon customer request)

MATERIAL: ALLOY 6061 FINISH: MIL-DTL-5541 TYPE 2 CLASS 3

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	INITIAL RELEASE	01/31/18	SC
1	E18365	08/13/18	SC
2	E20567	02/18/20	AK



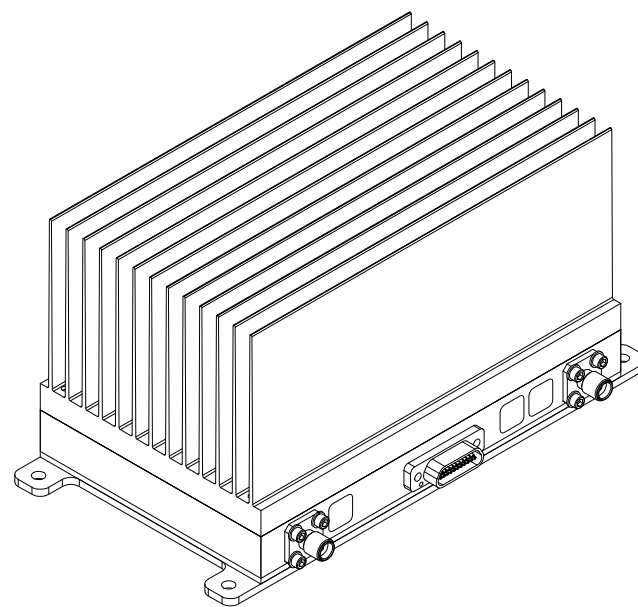
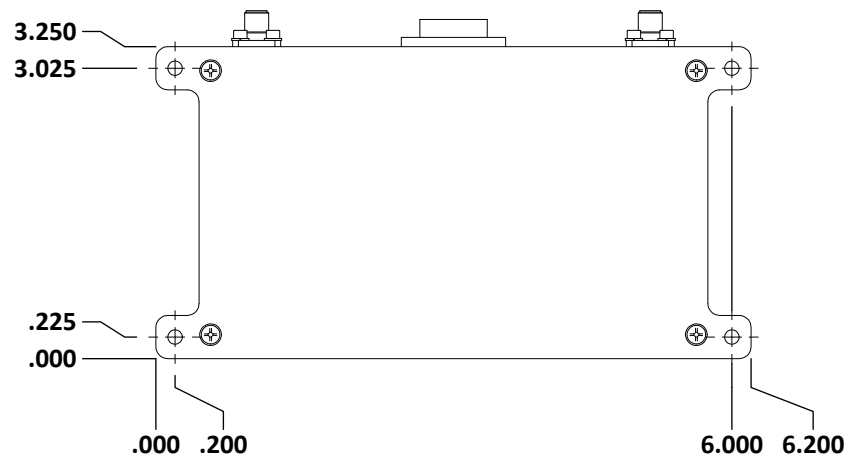
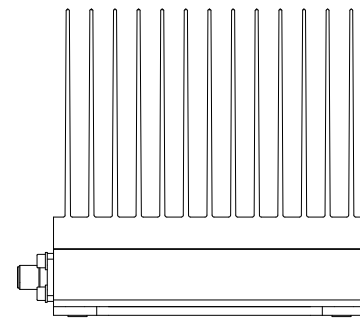
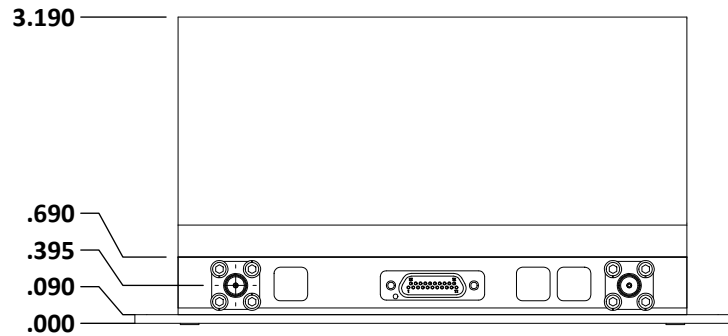
DRAWN	Anthony	2/18/2020
DESIGNED	DMC	5/11/2017
CHECKED		
ENG APPROVED		11/27/2019
MFG APPROVED		11/27/2019

TRIAD RF SYSTEMS
 11 HARTS LANE SUITE 1
 EAST BRUNSWICK, NJ 08816
 855-558-1001

DIMENSIONS ARE IN INCHES
 UNLESS SPECIFIED OTHERWISE
 TOLERANCES
 DECIMALS FRACTIONS ANGLES
 .XX ±.01 ± 1/32 ± 2°
 .XXX ±.005

SIZE	DWG NO.	REV
A	OL_170	
SCALE: NONE	CAGE CODE 67DZ3	SHEET 1 OF 5

HEATSINK



DRAWN	Anthony	2/18/2020			
DESIGNED	DMC	5/11/2017			
CHECKED			SIZE	DWG NO.	REV
ENG APPROVED		11/27/2019	A	OL_170	
MFG APPROVED		11/27/2019	SCALE: NONE	CAGE CODE 67DZ3	SHEET 2 OF 5

A

B

C

D

E

1

1

2

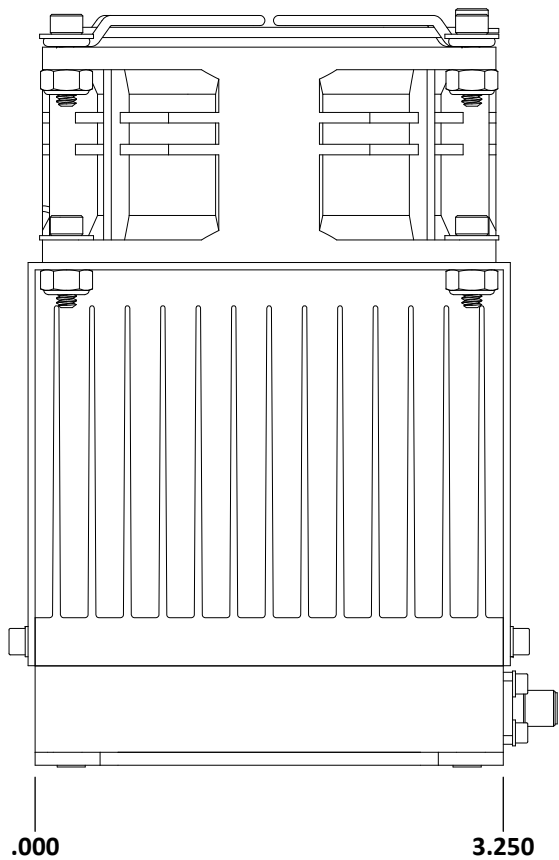
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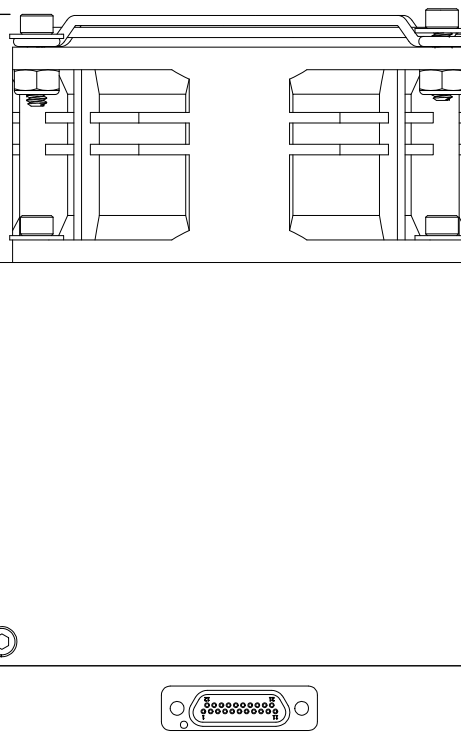
5.215

3.491

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.000

6.200



DRAWN	Anthony	2/18/2020			
DESIGNED	DMC	5/11/2017			
CHECKED			SIZE	DWG NO.	REV
ENG APPROVED		11/27/2019	A	OL_170	
MFG APPROVED		11/27/2019	SCALE: NONE	CAGE CODE 67DZ3	SHEET 3 OF 5

A

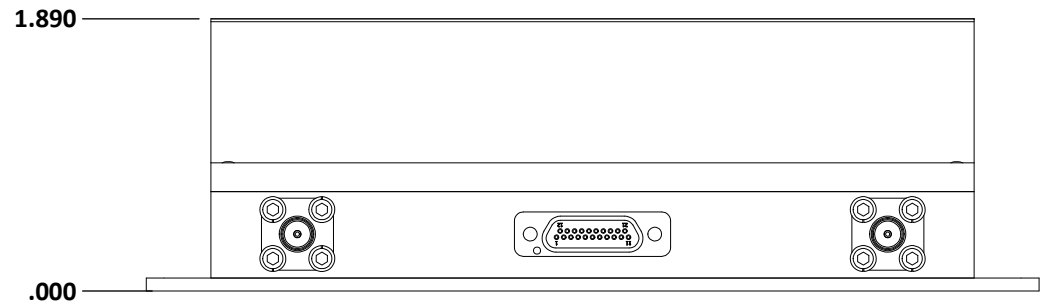
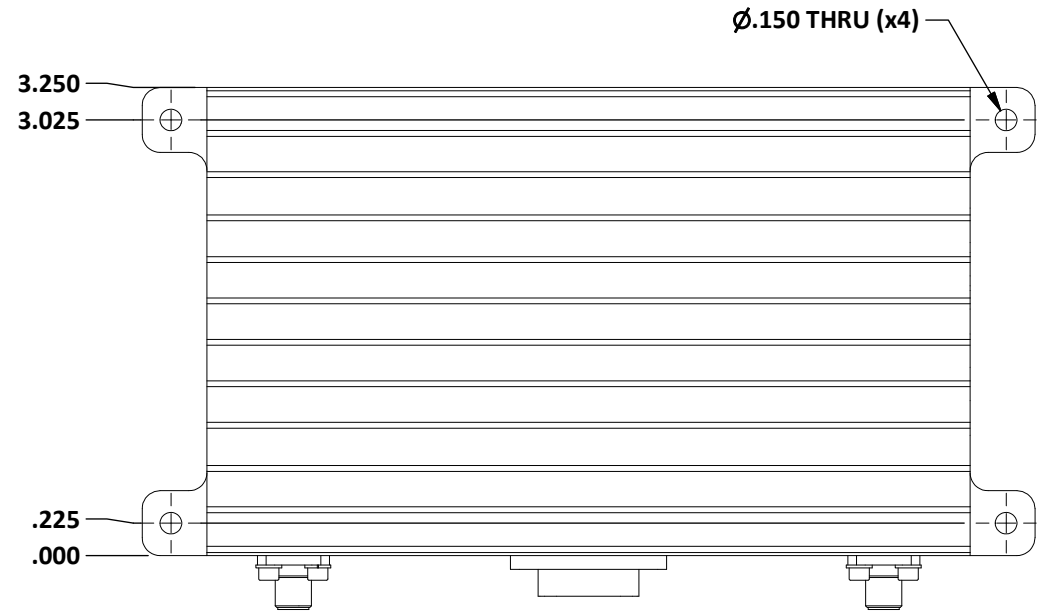
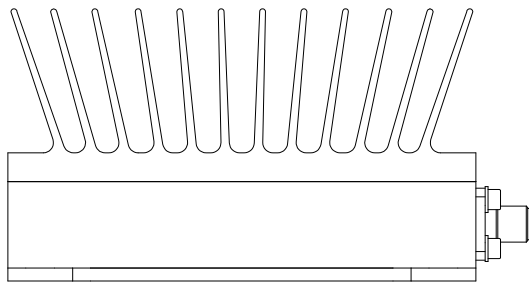
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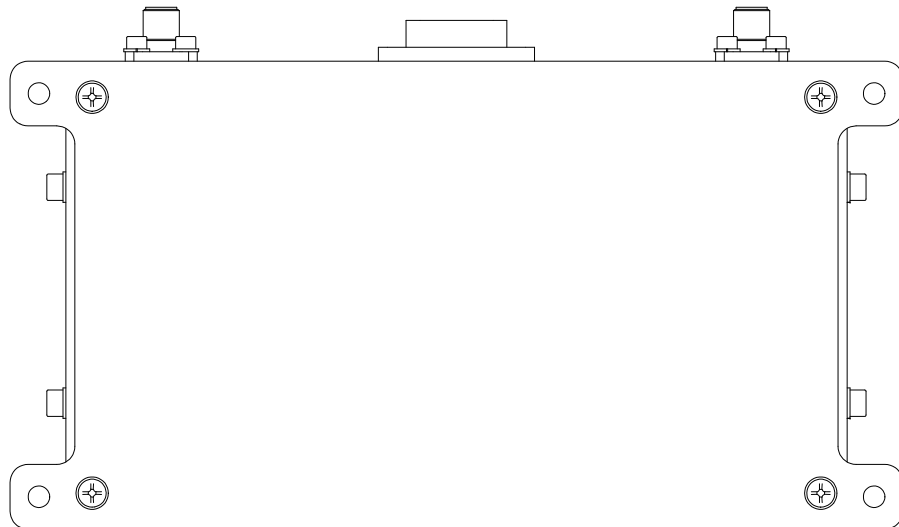
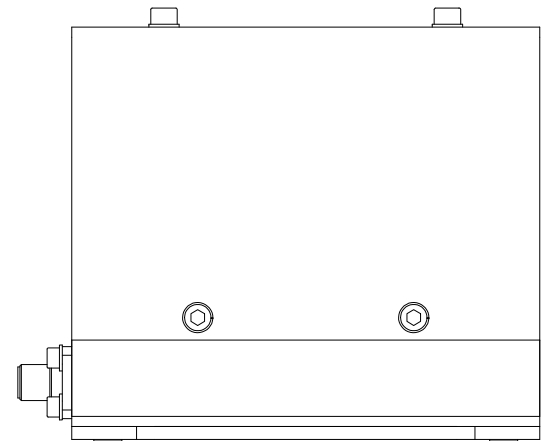
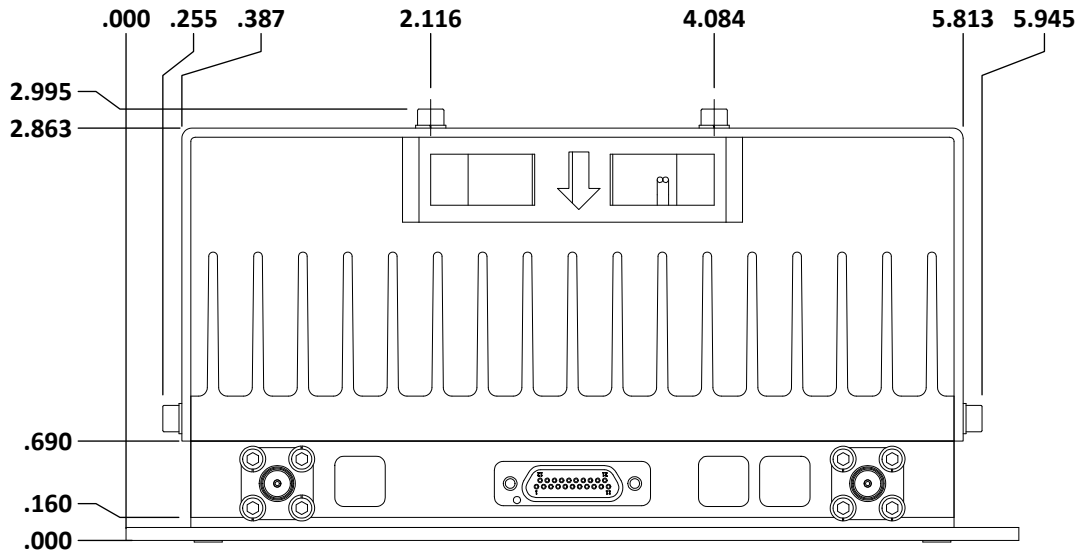
E

LOW PROFILE OPTION
 CONFIRM USABILITY WITH TRIAD BEFORE ORDERING



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ENG APPROVED		11/27/2019	A	OL_170	
MFG APPROVED		11/27/2019	SCALE: NONE	CAGE CODE 67DZ3	SHEET 4 OF 5

LOW PROFILE HEATSINK FAN



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MFG APPROVED		11/27/2019	SCALE: NONE	CAGE CODE 67DZ3	SHEET 5 OF 5