

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

Over / Under Voltage Protection
Optional Heatsink

High Speed Tx/Rx Switching Control
Manual Tx/Rx Switching (TTL)

Specifications subject to change without notice. Typical performance at +28VDC at 25°C in a 50Ω system

TX SPECIFICATIONS (PER CHANNEL)				
PARAMETER	MIN	TYP.	MAX	UNIT
Operating Frequency	1900		2300	MHz
PSat Power Output		+44.0		dBm
Gain	24.0	25.0		dB
Gain Flatness		1.5		± dB
Input Return Loss	-14	-18		dB
Operating Voltage	+27	+28	+30	VDC
Current Draw		3.0	3.4	A
Tx / Rx Switching Time		1.0	2.0	uS

RX SPECIFICATIONS (PER CHANNEL)				
PARAMETER	MIN	TYP.	MAX	UNIT
P1dB Power Output		+5.0		dBm
Gain		11.0		dB
Gain Flatness		1.0		± dB
Noise Figure		2.5		dB
OIP3		+15.0		dBm
Input Return Loss	-8	-10		dB
Current Draw		120.0		mA

MECHANICAL		
PARAMETER	VALUE	UNIT
Dimensions (L x W x H)	5.1 x 4.4 x 0.6	in
RF Connectors (Input / Output)	SMA-F / SMA-F	--
DC / Control Connector	15 Pin Micro-D	--
Cooling	Baseplate Conduction - Optional Heatsink Available	--
Mounting	4-40 Thru Holes	--
Weight	16	oz.
Weight With Heatsink	38	oz.

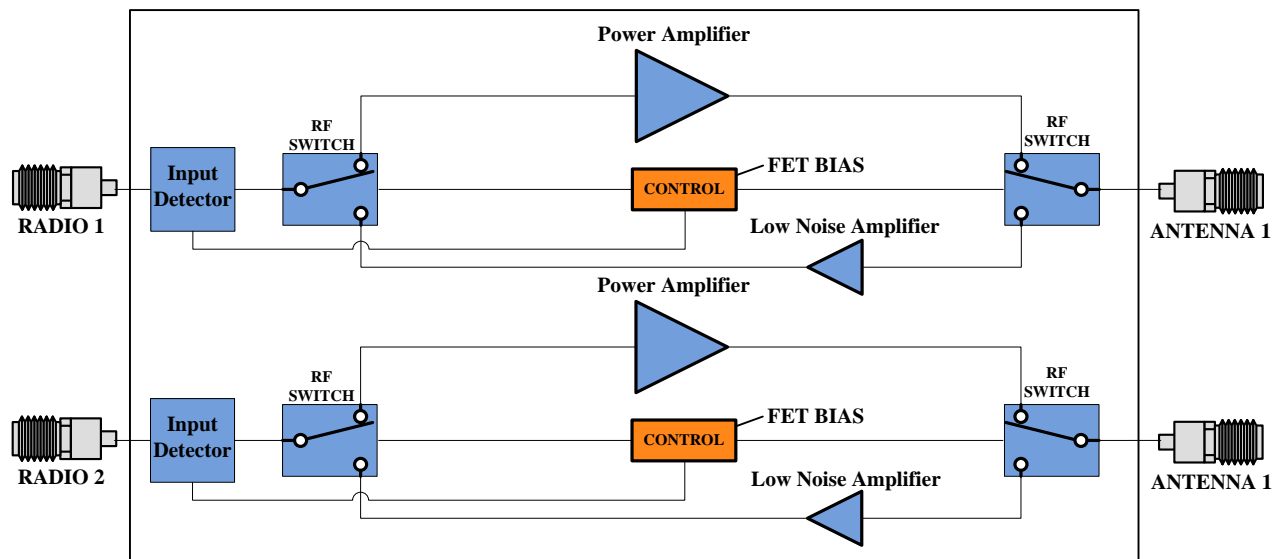
ENVIRONMENTAL / PROTECTIONS			
PARAMETER	MIN	MAX	UNIT
Operating Temp. (Housing Temp.)	-40	+85	°C
Humidity Range	0-100		%
Altitude	0-30,000		ft.
Shock / Vibration	MIL-STD-810 and equivalents		--
Max RF Input (Per Channel)	+21		dBm
PA Baseplate Shutoff Temperature	+90		°C

DC / CONTROL PINS		
AMPLIFIER CONNECTOR TYPE:		15 PIN MICRO-D FEMALE
TRIAD CABLE PART NUMBER:		CBL44
PIN LABEL	NAME	DESCRIPTION
1-4	+VDC	Supply Voltage - Range Specified in Datasheet
5	Sig. GND	Return for all Signal and CTRL Pins
7	Status	TTL Lo = Internal Fault
8	TEMP	Temp Monitor: Temp in DegC = (Vout - 0.5V) *100
9-12	GND	+VDC Supply Return
6, 13-14	N/C	No Connection
15	TX/RX CTRL	Hi = TX, Lo = RX

802-11G (20 MHz BW) DATA RATE VS. OUTPUT POWER (PER CHANNEL)			
OFDM MODULATION	DATA RATE	POUT (W) MIN.	EVM
64QAM	54 Mbps	0	≤ -27 dB
16QAM	36 Mbps	0	≤ -21 dB
QPSK	12 Mbps	0	≤ -15 dB
BPSK	9 Mbps	0	≤ -7 dB

See our [application note](#) that describes how this table was calculated and provides notes on in-system performance

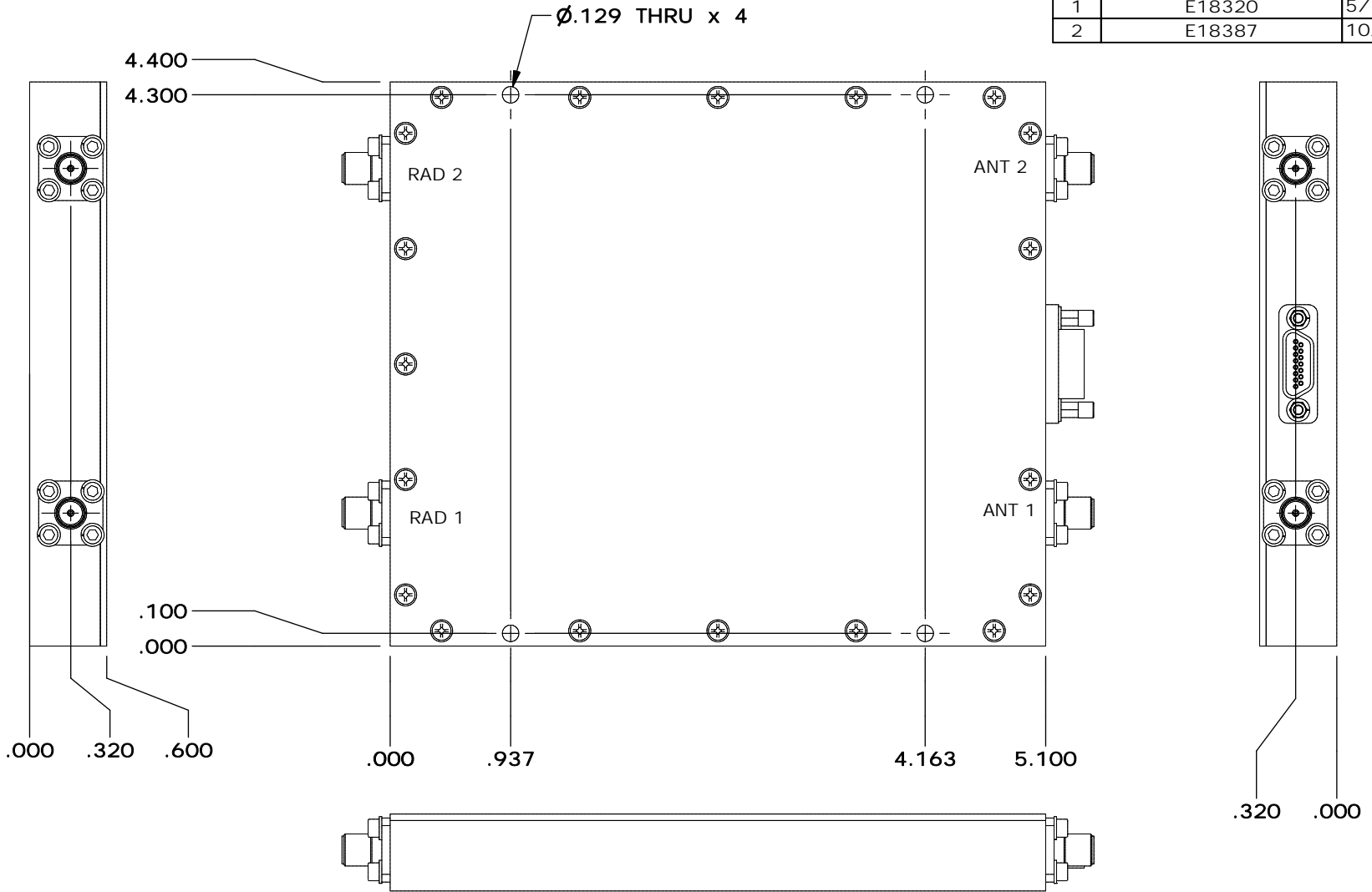
High-Level Block Diagram



Ordering Guide – Configuration Information		
Model Number	Amplifier Option	Heat Sink Option
TTRMXXXXD	- XXX	- XXX

Amplifier Options		Heat Sink Options	
Suffix	Description	Suffix	Description
D01	Automatic Tx/Rx Switching	(none)	No Heat Sink Included
D02	Manual Tx/Rx Switching	HS	Standard Heat Sink
DXX	Custom Amplifier Configuration (issued by Triad upon customer request)	HSF	Heat Sink with Integrated Cooling Fan
		HSX	Custom Heat Sink Configuration

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	INITIAL RELEASE	8/9/17	SC
1	E18320	5/31/18	SC
2	E18387	10/2/18	SC



DRAWN	scopp	8/9/2017
DESIGNED	scopp	5/22/2017
CHECKED		
ENG APPROVED		
MFG APPROVED		

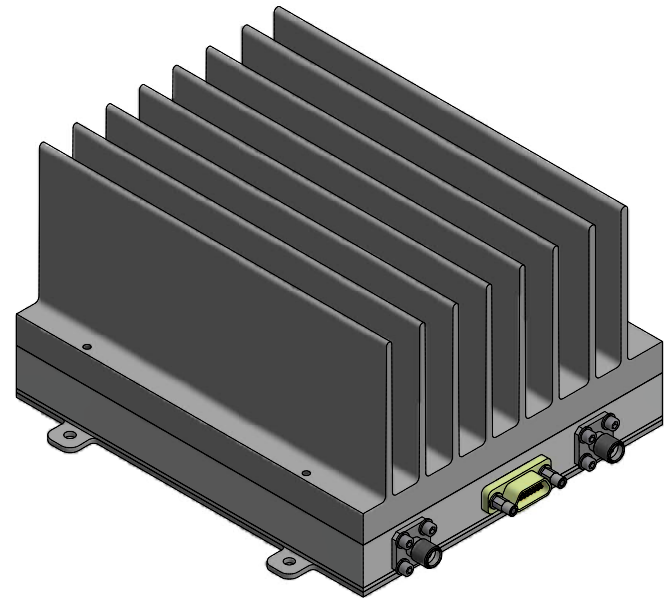
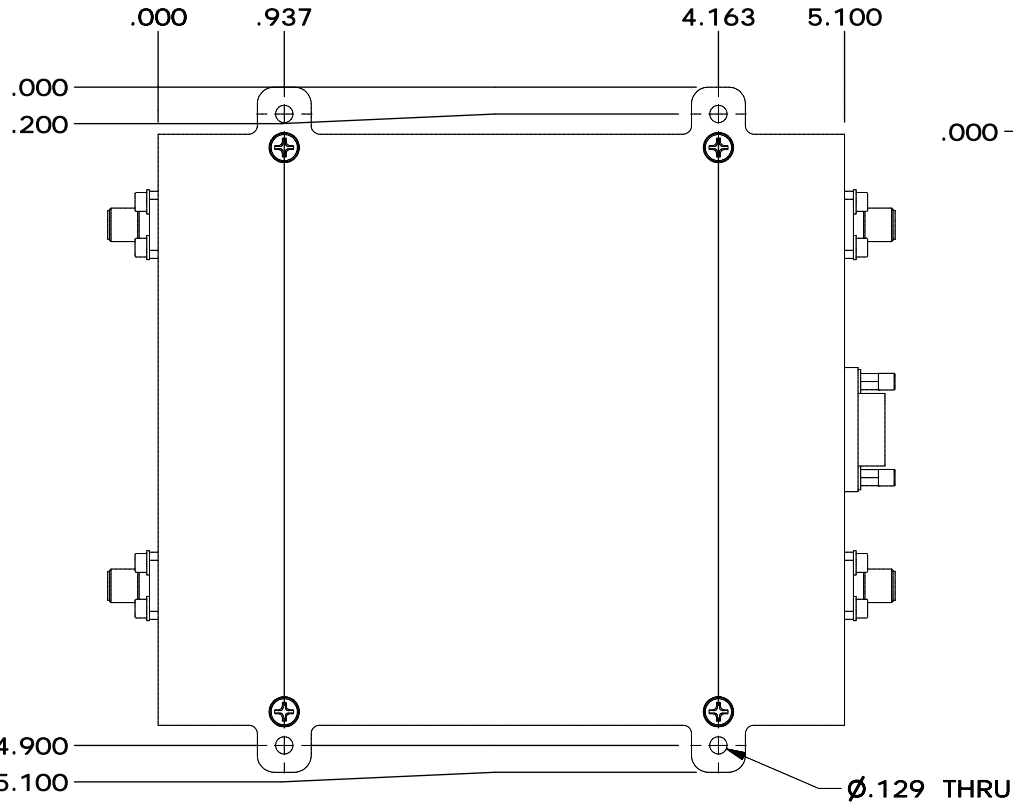
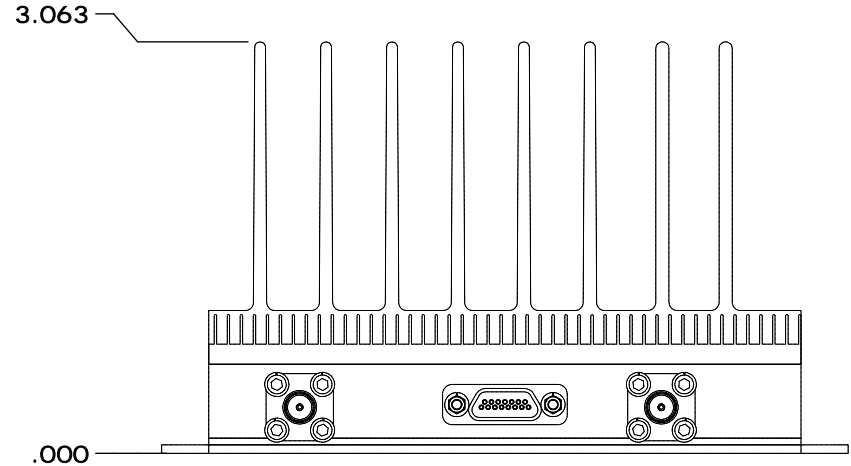
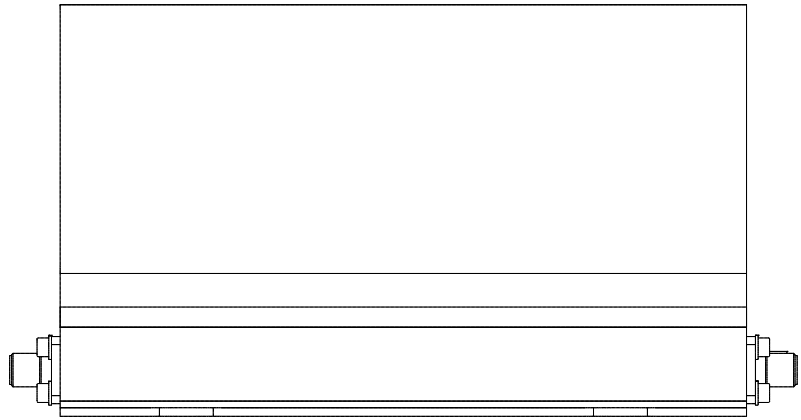
TRIAD
RF SYSTEMS

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

HOUSING OUTLINE DRAWING 178

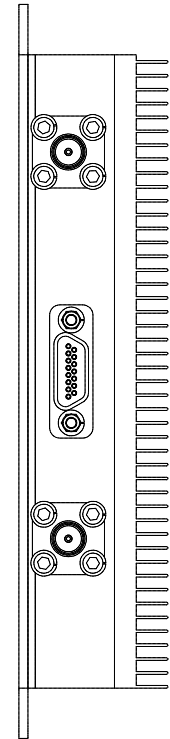
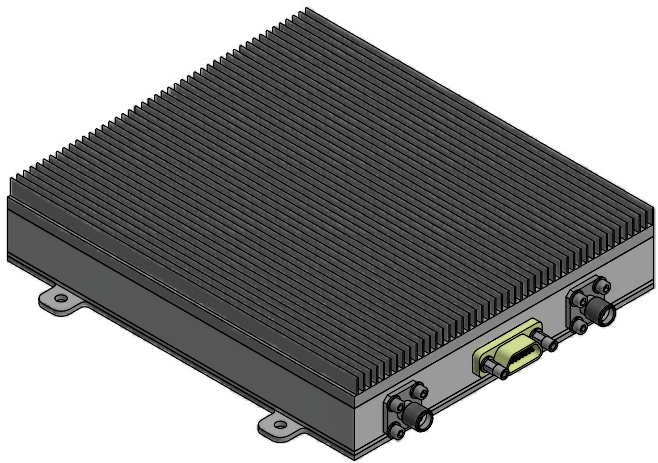
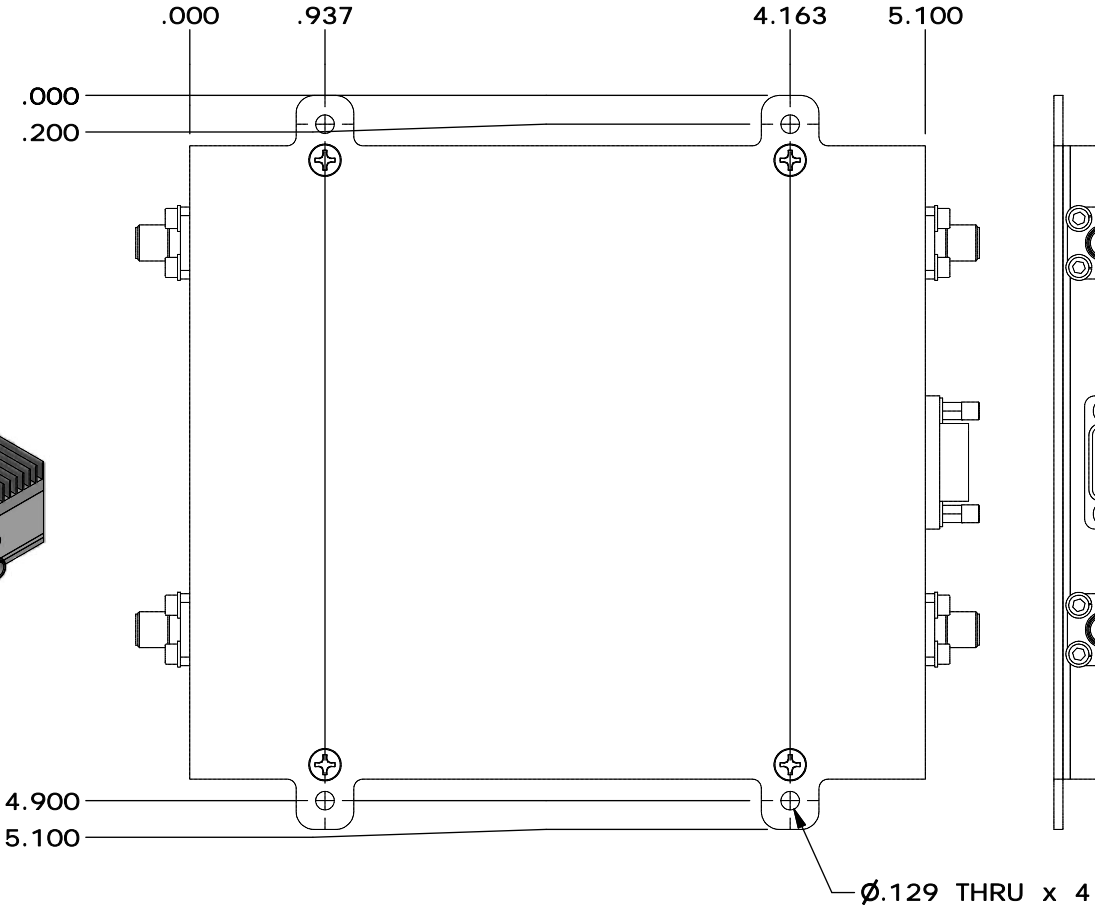
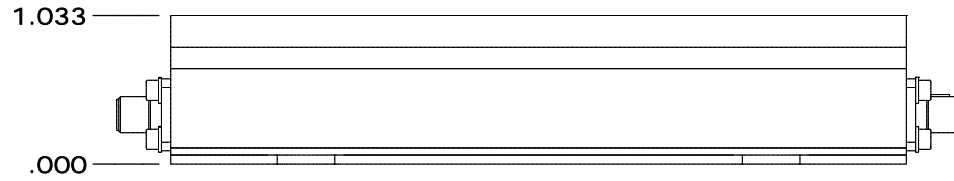
DIMENSIONS ARE IN INCHES UNLESS SPECIFIED OTHERWISE TOLERANCES		SIZE	DWG NO.	REV
DECIMALS	FRACTIONS	ANGLES	A	2
XX ±.01	± 1/32	± 2°	OL_178	
.XXX ±.005			SCALE: NONE	CAGE CODE 67DZ3
			SHEET 1 OF 3	

HEATSINK OPTION



DRAWN	scopp	8/9/2017	HOUSING OUTLINE DRAWING 178		
DESIGNED	scopp	5/22/2017	SIZE	DWG NO.	REV
CHECKED			A	OL_178	2
ENG APPROVED			SCALE: NONE	CAGE CODE 67DZ3	SHEET 2 OF 3
MFG APPROVED					

LOW PROFILE HEATSINK OPTION:
REFER TO TRIAD BEFORE ORDERING



DRAWN	scopp	8/9/2017	HOUSING OUTLINE DRAWING 178		
DESIGNED	scopp	5/22/2017	SIZE	DWG NO.	REV
CHECKED			A	OL_178	2
ENG APPROVED			SCALE: NONE	CAGE CODE 67DZ3	SHEET 3 OF 3
MFG APPROVED					