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Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





DM3730/AM3703 Torpedo + Wireless SOM Mechanical Hold-Down Scenarios

White Paper 505

Logic PD // Products
Published: November 2011
Last revised: June 2012

Abstract

This white paper will suggest different methods that are available to secure the DM3730/AM3703 Torpedo + Wireless SOM in an end-product.

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Revision History

REV	EDITOR	DESCRIPTION	APPROVAL	DATE
A	SO	-Initial Release	PH, KG	11/07/11
B	SO	-Section 2: Updated extraction force required after one insertion to less than 10 lb.; -Removed Section 3.3; -Updated drawing 1020632, 1020633 and 1020244 at the end of the document	SO	05/04/12
C	SO	-Throughout: Added language for AM3703 configuration of Torpedo + Wireless SOM; -Section 2: Updated extraction force required after one insertion and after fifteen insertions; -Updated drawing 1020632 and 1020244 at the end of the document	SO	06/20/12

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1 Introduction

This document provides mechanical drawings suggesting different methods for holding the DM3730/AM3703 Torpedo + Wireless SOM in place.

2 Force Test Results

Based on testing a limited number of samples, the DM3730/AM3703 Torpedo + Wireless SOM requires 6 lb. of extraction force after one insertion when the mating connectors are the only means of retention. After 15 insertion and extraction cycles, the extraction force is reduced to 4 lb. See drawing 1020632 at the conclusion of this document.

3 Hold-Down Methods

3.1 Logic PD Designed Hold-Down Clip

Logic PD has designed a hold-down clip that is included with the Zoom DM3730 Torpedo Development Kit. The clip provides a method for securing the DM3730/AM3703 Torpedo + Wireless SOM with minimal impact on the surrounding space. See drawing number 1020633 and 1020244 at the conclusion of this document.

3.2 Enclosure

An enclosure can be built around the DM3730/AM3703 Torpedo + Wireless SOM and custom baseboard. See drawing number 1020634 at the conclusion of this document.

4 Summary

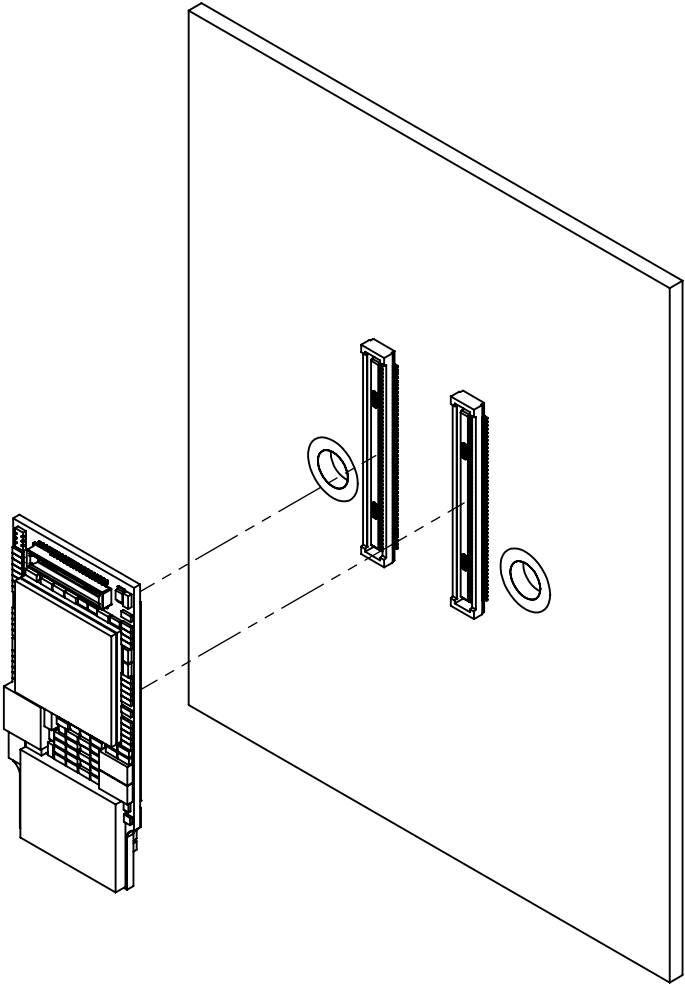
This white paper provides several methods for holding the DM3730/AM3703 Torpedo + Wireless SOM in place. The drawings included with this document offer examples of how these methods could be implemented. Because every end product has unique requirements, it is outside the scope of this document to provide a specific retention method for every scenario. Determining the best solution for the end product is the responsibility of the designer, although Logic PD can help with design solutions or reviews. Please [contact Logic PD](http://support.logicpd.com/support/askaquestion.php)¹ for more information.

¹ <http://support.logicpd.com/support/askaquestion.php>

REVISIONS		
REV.	DESCRIPTION	DATE
A	INITIAL RELEASE	10.21.11
B	UPDATED STANDOFF LOCATIONS, EXTRACTION FORCE NOTE	05.02.12
C	UPDATED NOTES	06.21.12

NOTES:

1. BASED ON TESTING A LIMITED NUMBER OF SAMPLES, THE DM3730 TORPEDO+WIRELESS SOM REQUIRES 6 LB. OF EXTRACTION FORCE AFTER 1 INSERTION CYCLE. AFTER 15 INSERTION AND EXTRACTION CYCLES, THIS IS REDUCED TO 4LB.



THIS DRAWING PREPARED
IN ACCORDANCE WITH
ASME Y14.5-2000

ALL DIMENSIONS
ARE IN MILLIMETERS
UNLESS OTHERWISE
SPECIFIED

TOLERANCES UNLESS
OTHERWISE SPECIFIED

X ± 0.5
X.X ± 0.2
X.XX ± 0.1
X° ± 1°

THIRD ANGLE PROJECTION

ENG KAG	DATE 10.21.11
CHECK KAG	DATE 10.21.11
MGR PMH	DATE 10.21.11
MANF	DATE



411 WASHINGTON AVE, SUITE 400 MINNEAPOLIS, MN 55401
T: 612.672.9495 F: 612.672.9489 I: WWW.LOGICPD.COM

SIZE
A

SCALE
2:1

TITLE
TORPEDO + WIRELESS
RETENTION SYSTEM - NONE

DWG NO
1020632

REV
C

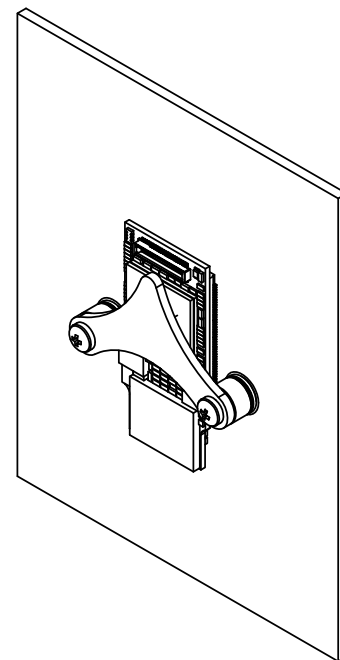
SHEET
1 OF 1

ITEM NO	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
1	REPRESENTATIVE PCB	N/A	N/A	1
2	DM3730 TORPEDO + WIRELESS SOM	LOGIC PD	DEPENDANT ON CONFIGURATION	1
3	CLIP, SOM RETENTION PLATE	LOGIC PD	LPD-SOM-CLIP1	1
4	SURFACE MOUNT STANDOFF, 4MM HEIGHT	PEM	SM TSO -M2-4	2
5	THERMAL PAD, SOM RETENTION PLATE	LOGIC PD	LPD-SOM-CLIP2-THPAD	1
6	MACHINE SCREW, M2 X 0.4, 6MM LENGTH	N/A	N/A	2

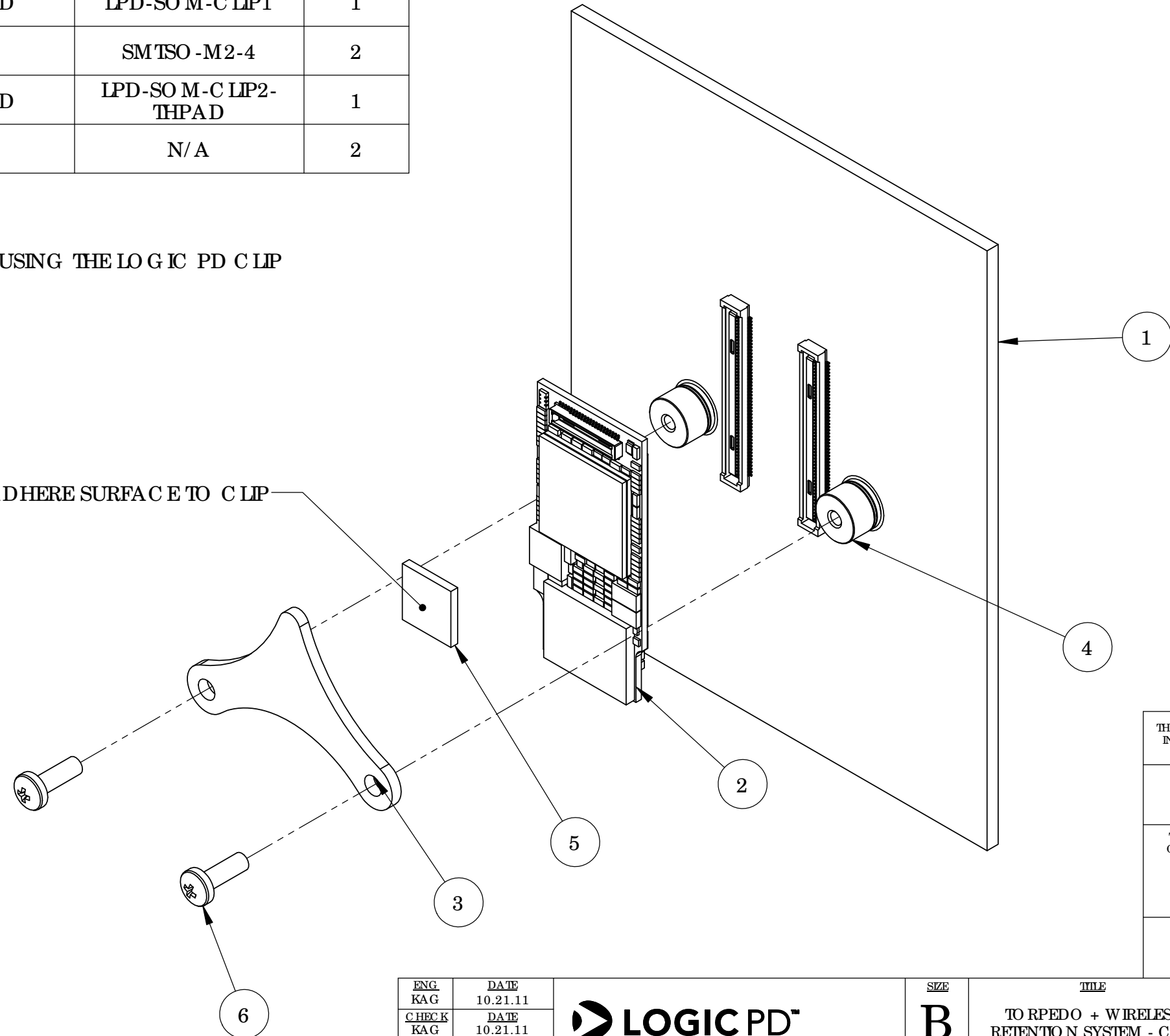
REVISIONS		
REV.	DESCRIPTION	DATE
A	INITIAL RELEASE	10.21.11
B	RELOCATED FOOTPRINT AND KEEP OUT AREA 1020244	05.02.12

NOTES:

1. THIS IS THE RECOMMENDED RETENTION METHOD IF USING THE LOGIC PD CLIP
2. DO NOT SCALE DRAWING



ADHERE SURFACE TO CLIP



THIS DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.5-2000

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED

TOLERANCES UNLESS OTHERWISE SPECIFIED

X ± 0.5
 X.X ± 0.2
 X.XX ± 0.1
 X° ± 1°

THIRD ANGLE PROJECTION

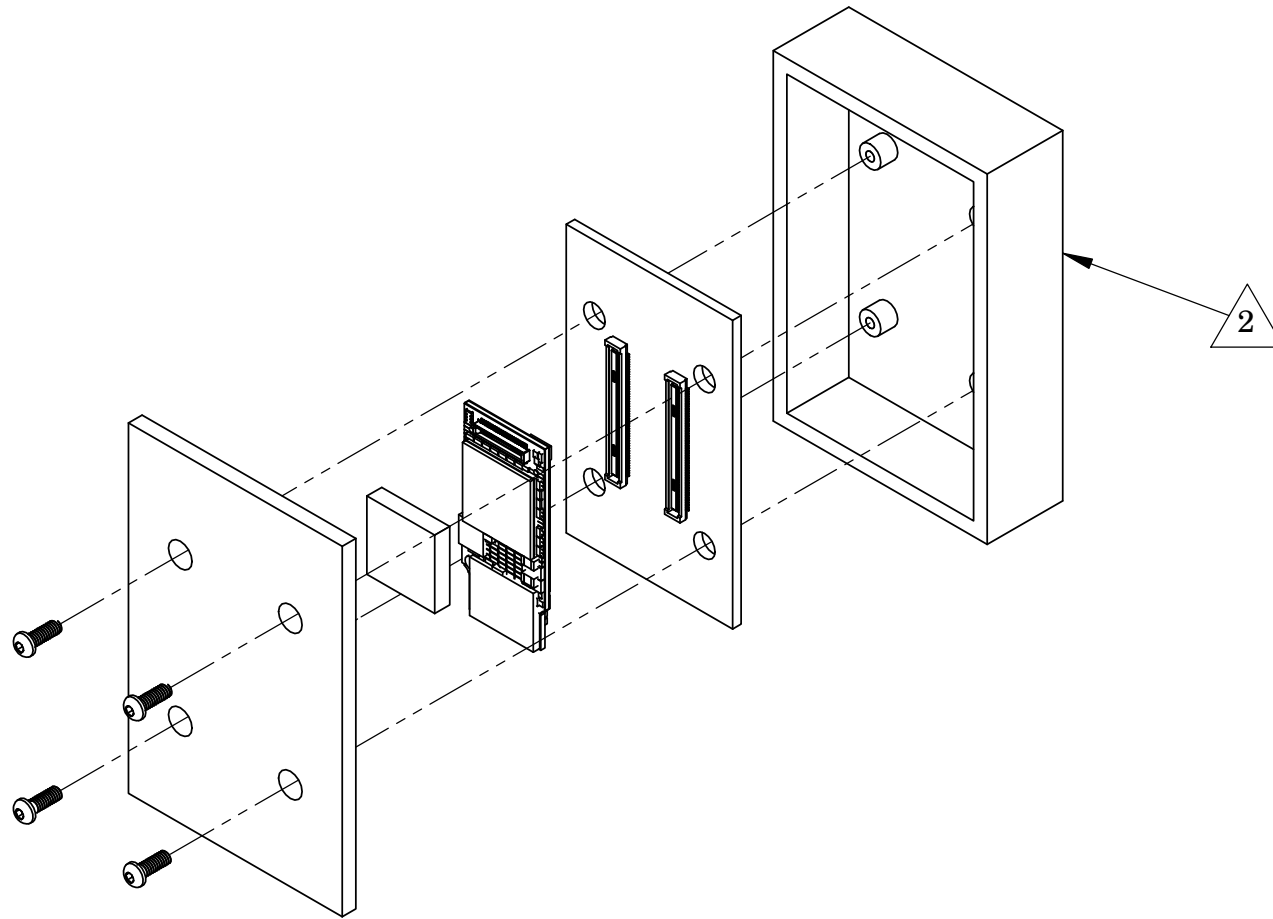
ENG KAG	DATE 10.21.11		SIZE B	TITLE TORPEDO + WIRELESS RETENTION SYSTEM - CLIP	REV B
CHECK KAG	DATE 10.21.11		SCALE 2:1	DWG NO. 1020633	SHEET 1 OF 1
MGR PMH	DATE 10.21.11	411 WASHINGTON AVE. SUITE 400 MINNEAPOLIS, MN 55401 T: 612.672.9495 F: 612.672.9489 I: WWW.LOGICPD.COM			
MANF	DATE				

REVISIONS		
REV.	DESCRIPTION	DATE
A	INITIAL RELEASE	10.21.11

NOTES:

1. THE TORPEDO + WIRELESS SOM CAN BE RETAINED IN PLACE BY THE SURROUNDING ENCLOSURE.

2. REPRESENTATIVE ENCLOSURE



THIS DRAWING PREPARED
IN ACCORDANCE WITH
ASME Y14.5-2000

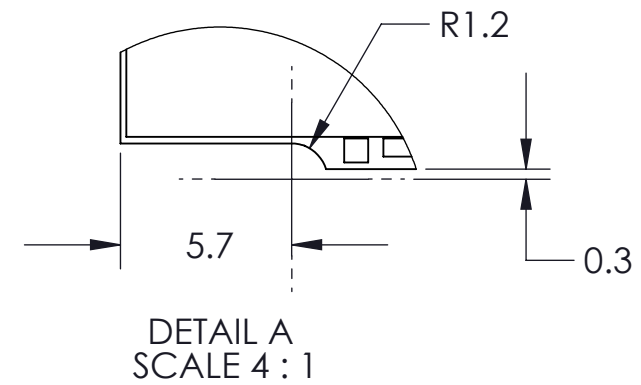
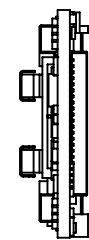
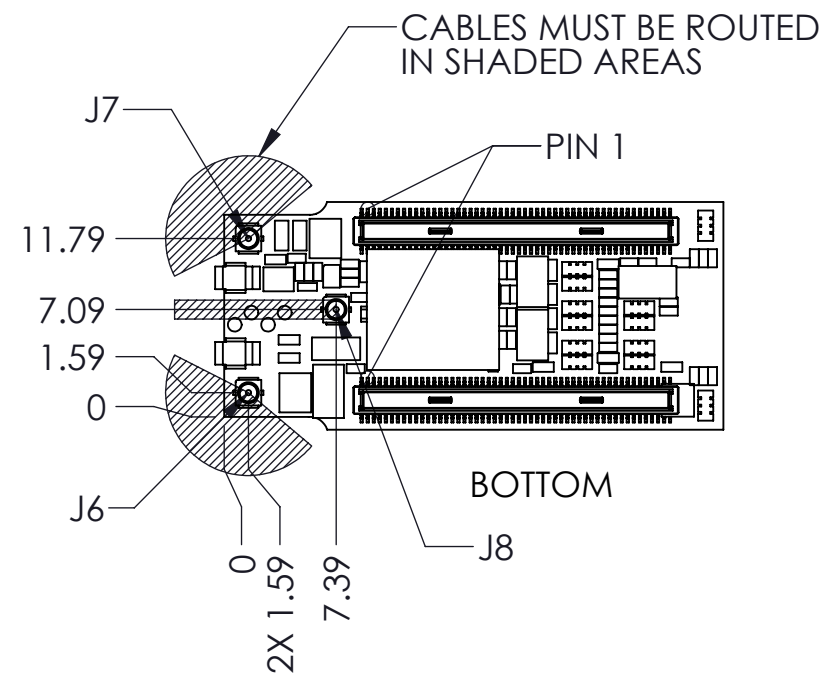
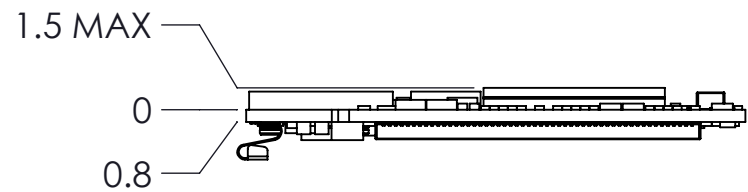
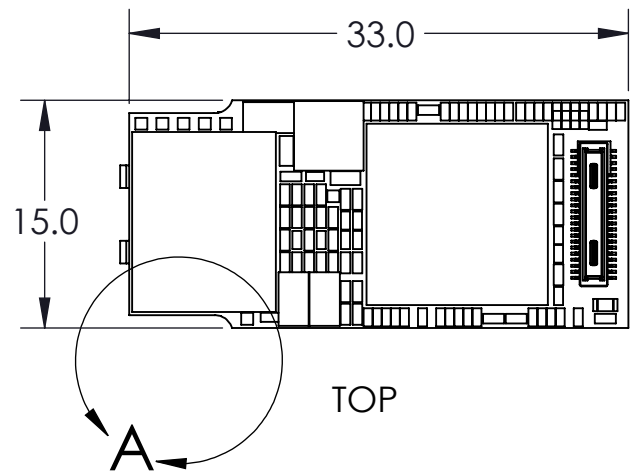
ALL DIMENSIONS
ARE IN MILLIMETERS
UNLESS OTHERWISE
SPECIFIED

TOLERANCES UNLESS
OTHERWISE SPECIFIED

X ± 0.5
X.X ± 0.2
X.XX ± 0.1
X° ± 1°

THIRD ANGLE PROJECTION

ENG NWR	DATE 10.21.11	<p>411 WASHINGTON AVE. SUITE 400 MINNEAPOLIS, MN 55401 T: 612.672.9495 F: 612.672.9489 I: WWW.LOGICPD.COM</p>	SIZE A	TITLE TORPEDO + WIRELESS RETENTION SYSTEM - IN HOUSING	REV A
CHECK KAG	DATE 10.21.11		SCALE 1:1	DWG NO. 1020634	SHEET 1 OF 1
MGR PMH	DATE 10.21.11				
MANF	DATE				



REVISIONS			
REV.	PCB NUMBER	DESCRIPTION	DATE
A	1020005	INITIAL RELEASE	08.16.11
B	1020612	UPDATE TO REFLECT NEW PCB NUMBER	11.10.11
C	1021713	NEW PCB NUMBER, ADD GROUNDING TABS AND COAX AREAS	04.20.12
D	1021713	ADDED HOLD DOWN CLIP KEEPOUT, COAX BASEBOARD KEEPOUT	05.02.12
E	1021713	EDITED ETM BOARD HEIGHT	06.21.12

NOTES:

- DO NOT SCALE DRAWING
- DO NOT PLACE ANY COMPONENTS OR EXPOSED VIAS WITHIN LAYOUT AREA OF SOM
- BASEBOARD CONNECTOR SPECIFICATION (MACHINE PLACEMENT RECOMMENDED): HIROSE DF40C-100DS-0.4V
- IF USING THE ETM DEBUG BOARD DURING DEVELOPMENT, VERIFY COMPONENT HEIGHT CONSTRAINTS IN SPECIFIED AREA
- PANEL VESTIGES ON ALL FOUR EDGES - DO NOT PLACE COMPONENTS DIRECTLY ALIGNED WITH EDGE OF SOM

THIS DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.5-2000

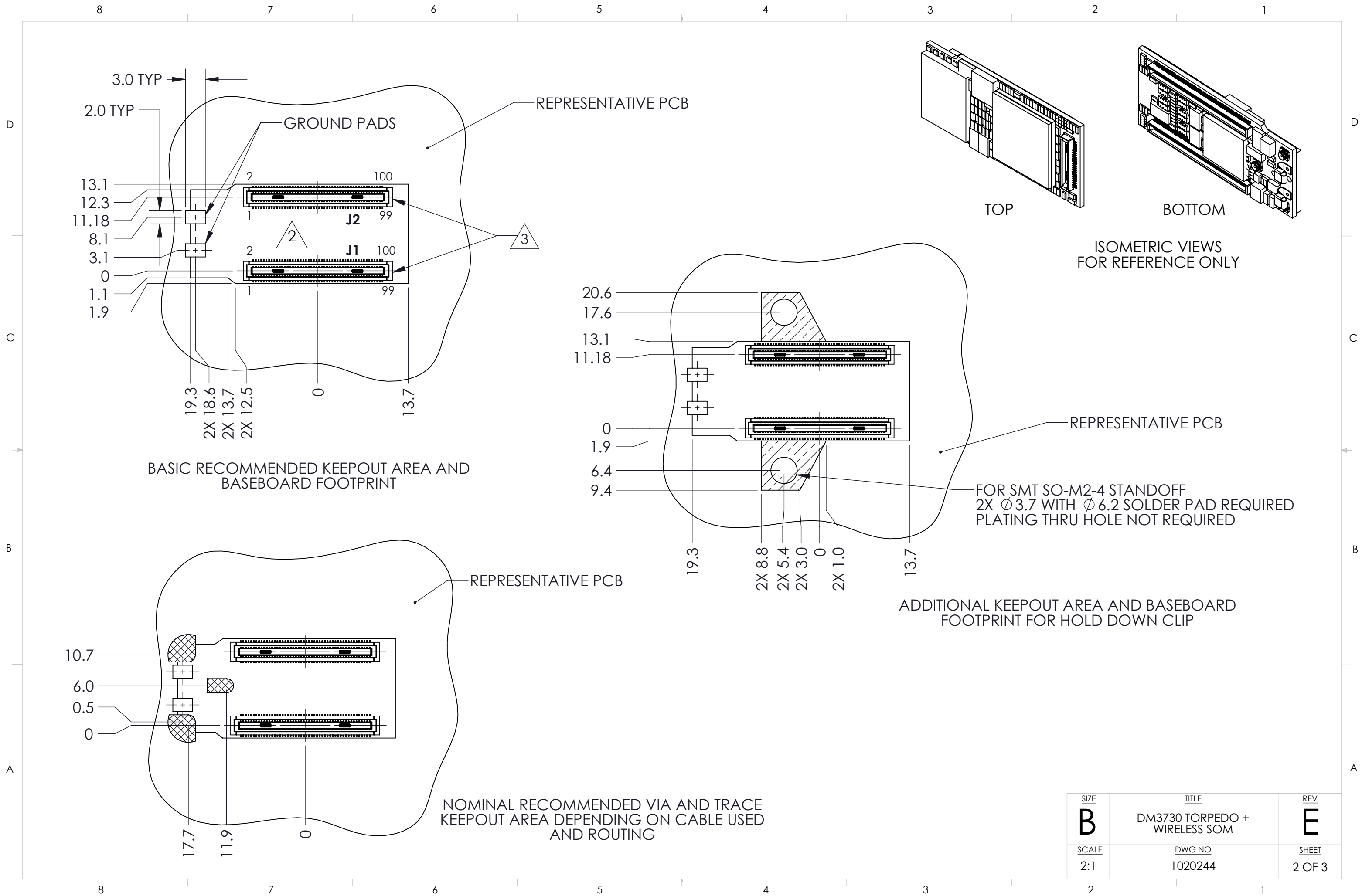
ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED

TOLERANCES UNLESS OTHERWISE SPECIFIED

X	± 0.5
X.X	± 0.2
X.XX	± 0.1
X°	± 1°



ENG KAG	DATE 5/2/2012	<p>411 WASHINGTON AVE. SUITE 400 MINNEAPOLIS, MN 55401 T: 612.672.9495 F: 612.672.9489 I: WWW.LOGICPD.COM</p>	SIZE B	TITLE DM3730 TORPEDO + WIRELESS SOM	REV E
CHECK NWR	DATE 5/2/2012		SCALE 2:1	DWG NO 1020244	SHEET 1 OF 3
MGR PMH	DATE 6/21/2012				
MANF	DATE				



SIZE	TITLE	REV
B	DM3730 TORPEDO + WIRELESS SOM	E
SCALE	DWG NO	SHEET
2:1	1020244	2 OF 3

8 7 6 5 4 3 2 1

D

D

C

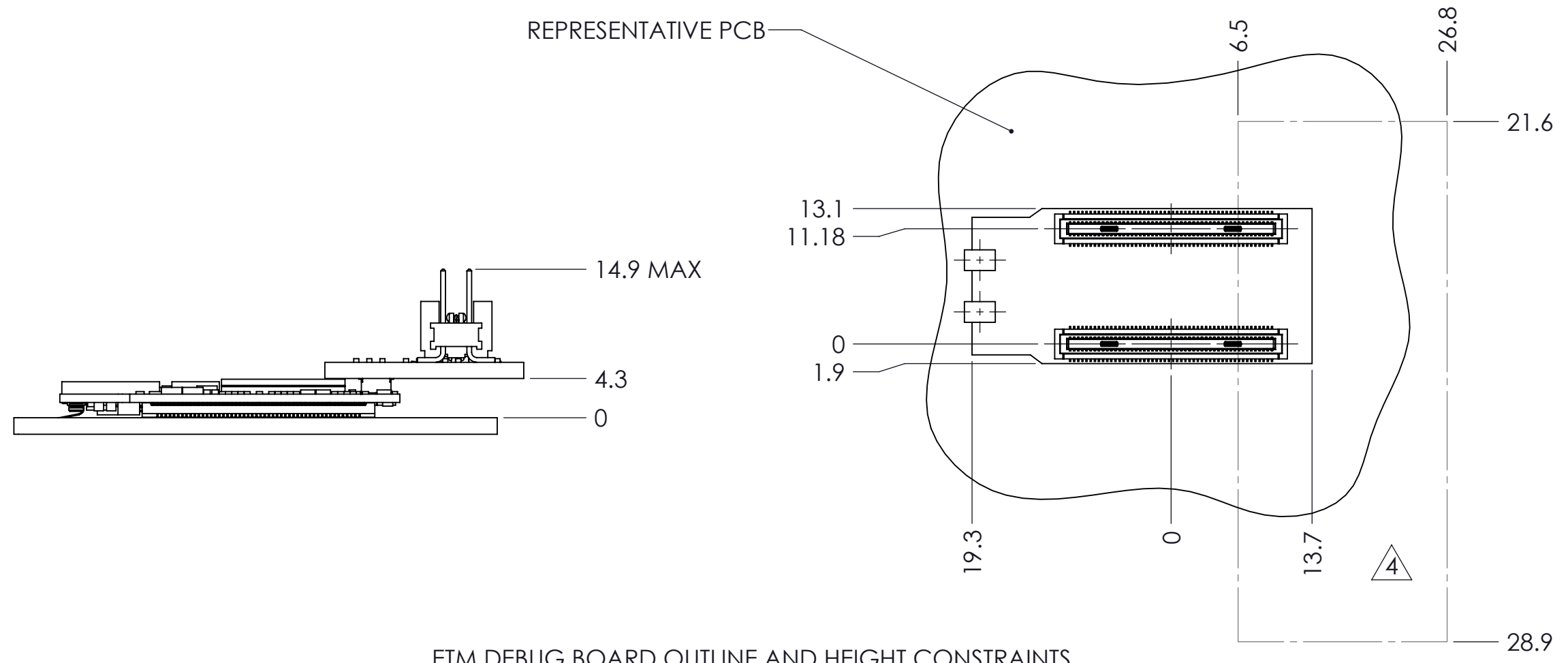
C

B

B

A

A



ETM DEBUG BOARD OUTLINE AND HEIGHT CONSTRAINTS

SIZE	TITLE	REV
B	DM3730 TORPEDO + WIRELESS SOM	E
SCALE	DWG NO	SHEET
2:1	1020244	3 OF 3

8 7 6 5 4 3 2 1