 <b>MEDTRONIC CONFIDENTIAL</b>	<b>DHF Project Name</b>		<b>Page</b>
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	<b>Deliverable</b>	Technical Construction/Documentation File Element	
	<b>Title</b>	24970A CareLink SmartSync™ Device Manager Base MICS Radio Antenna Gain calculation	

The gain for the two MICS band antennas used in the 24970A CareLink SmartSync Device Manager Base is shown below by comparing the MICS transmitter conducted output level measured at the factory for a specific sample against the highest measured radiated EIRP power levels for each antenna on that same sample and calculating each antenna gain.

**Direct Measurement from factory (Excerpt from Plexus PCBA Final Functional Test Log sample S/N – SPM000321A)**

Sample S/N		Min. (dBm)	Nominal setting	Max. (dBm)	
SPM000321A	T08021b	-16.85	-16	-16.53	Power of Mode 5 Max Tx Power Channel

**EIRP Radiated Measurements (pulled from NWEMC FCC Part 95I MICS Radio Report MDTR0481)**

For Sample SPM000321A

	Freq. (MHz)	EIRP (dBm)
<b>Antenna 1</b>	<b>404.853</b>	<b>-18.4</b>
<b>Antenna 2</b>	<b>403.349</b>	<b>-17.90</b>

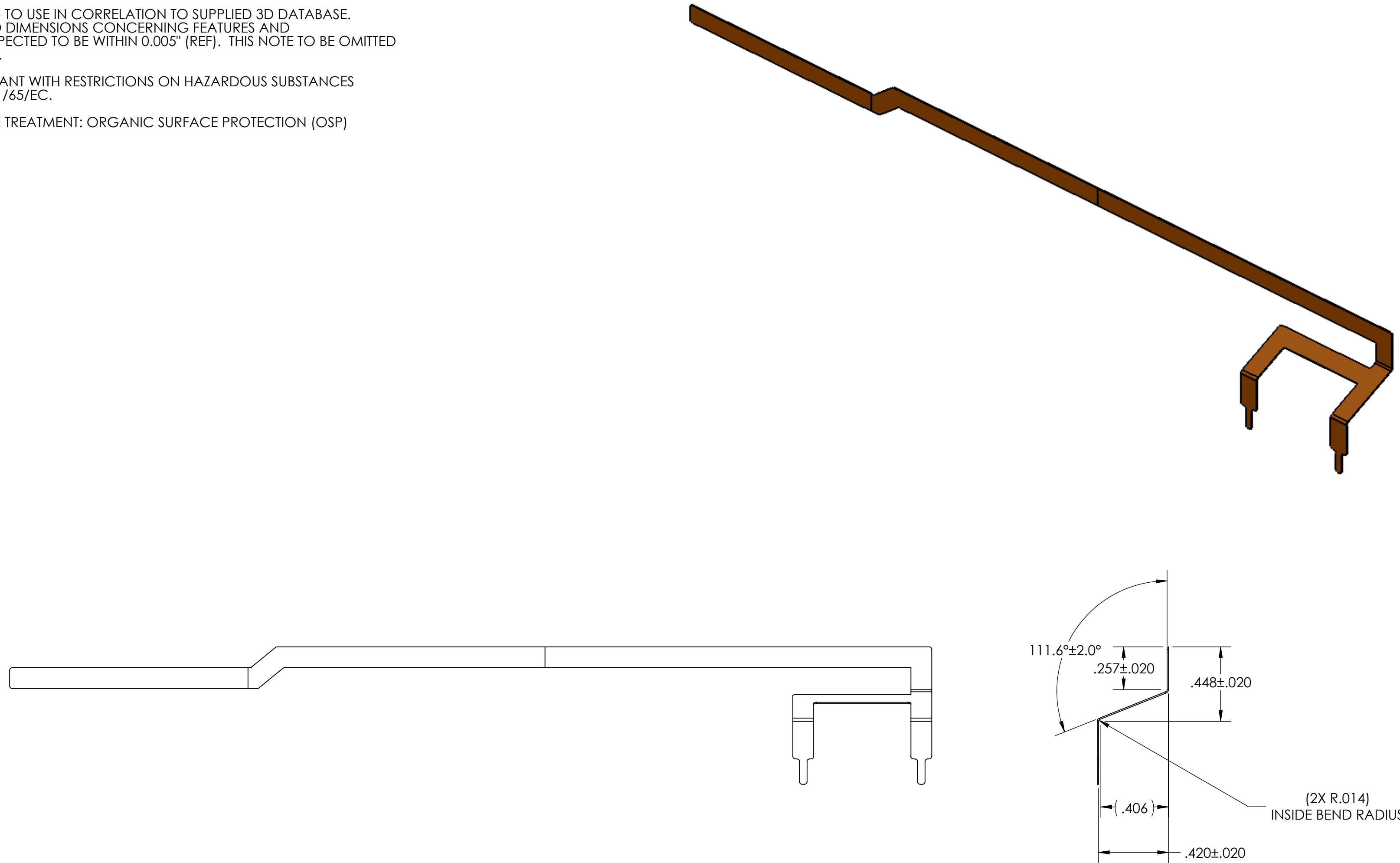
**Antenna 1: Gain = -18.4 – (-16.53) = -1.87 dBi**

**Antenna 2: Gain = -17.9 – (-16.53) = -1.37 dBi**

NOTES (UNLESS OTHERWISE SPECIFIED)

1. MATERIAL: 0.0078" +/-0.0008" THICK 1/2 HARD COPPER ALLOY C11000
2. NOTIFICATION OF CHANGE UPON APPROVAL BY MEDTRONIC INC. OF THE INITIAL DESIGN, ANY PROCESS CHANGES, DESIGN CHANGES OR DEVIATIONS CONSIDERED BY MANUFACTURER MUST BE SUBMITTED TO MEDTRONIC INC. IN WRITING FOR REVIEW AND APPROVAL PRIOR TO IMPLEMENTATION.
3. PACKAGING: PART TO BE ADEQUATELY PACKAGED TO PREVENT DAMAGE DURING SHIPPING AND HANDLING.
4. THIS DRAWING TO USE IN CORRELATION TO SUPPLIED 3D DATABASE. ALL NON-SPECIFIED DIMENSIONS CONCERNING FEATURES AND GEOMETRY ARE EXPECTED TO BE WITHIN 0.005" (REF). THIS NOTE TO BE OMITTED FROM FAI ACTIVITY.
5. ROHS COMPLIANT WITH RESTRICTIONS ON HAZARDOUS SUBSTANCES PER DIRECTIVE 2011/65/EC.
6. POST SURFACE TREATMENT: ORGANIC SURFACE PROTECTION (OSP)

REVISION HISTORY			
ENG REV	DASH NUMBER	CHANGE DESCRIPTION (LIST ECO# IF APPLICABLE)	DATE DD-MMM-YYYY
A	-00	INITIAL RELEASE	09-JUL-2015
B	-01	INCREASED LENGTH FROM 5.411 TO 5.536. ADDED BENDS TO THE LEGS AND ORGANIC SURFACE PROTECTION. REMOVED WORKMANSHIP NOTE.	27-AUG-2015

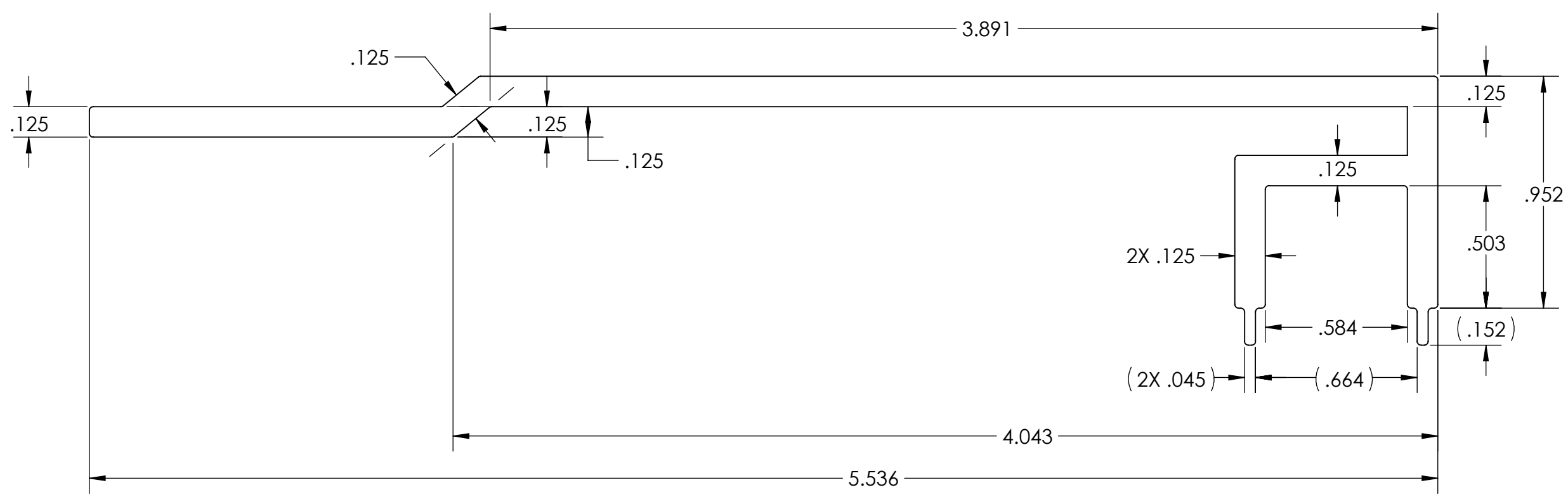


DESCRIPTION		PART NUMBER		UNITS
PIFA ANTENNA, RIGHT 18MM, SIRIUS BASE		470252-01		INCH
TOLERANCES UNLESS OTHERWISE NOTED	DRAWING LAST MODIFIED BY		SCALE	
LINEAR X.X ± 0.1	steven.kleis		2:1	
X.XX ± 0.01				
X.XXX ± 0.004				
ANGLES ± 0.5°				
DRAWING FILE NAME		DRAWING CREATION DATE		
470252		6/19/2015		
PROJECT		DRAWING ITERATION		
D183		B.9		
INTERPRET GEOMETRIC DIMENSIONS AND TOLERANCES ACCORDING TO ASME Y14.5-2009		THIRD ANGLE PROJECTION		REV
DO NOT SCALE DRAWING				B
SHEET SIZE C		SHEET 1 of 2		

**CONFIDENTIAL**  
 ALL INFORMATION CONTAINED IN THIS DRAWING  
 MAY NOT BE USED WITHOUT THE WRITTEN  
 CONSENT OF PLEXUS ENGINEERING SOLUTIONS



DESCRIPTION		PIFA ANTENNA, RIGHT 18MM, SIRIUS BASE	
TOLERANCES UNLESS OTHERWISE NOTED	PART NUMBER	UNITS	INCH
LINEAR X.X ± 0.1	470252-01	SCALE	2:1
X.XX ± 0.01	DRAWING LAST MODIFIED BY	DRAWING FILE NAME	470252
X.XXX ± .004	steven.kleis	PROJECT	D183
ANGLES ± 0.5°		DRAWING CREATION DATE	6/19/2015
		DRAWING ITERATION	B.9
		INTERPRET GEOMETRIC DIMENSIONS AND TOLERANCES ACCORDING TO ASME Y14.5-2009	REV B
		DO NOT SCALE DRAWING	THIRD ANGLE PROJECTION
<b>CONFIDENTIAL</b> ALL INFORMATION CONTAINED IN THIS DRAWING MAY NOT BE USED WITHOUT THE WRITTEN CONSENT OF PLEXUS ENGINEERING SOLUTIONS	SHEET SIZE C	SHEET 2 of 2	



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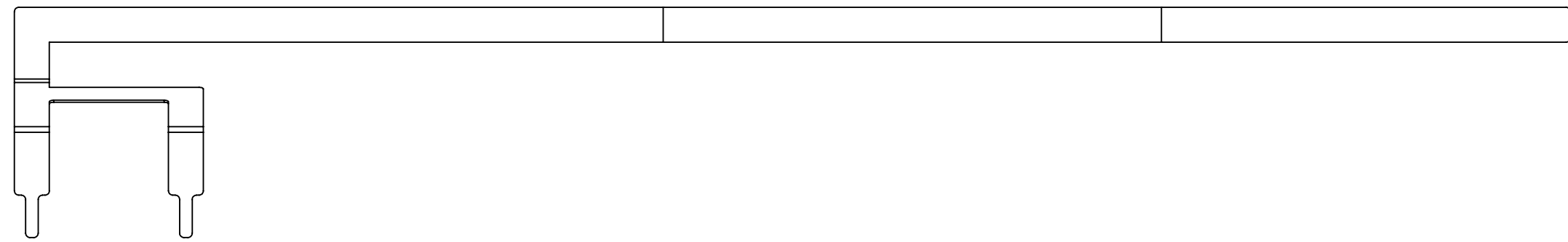
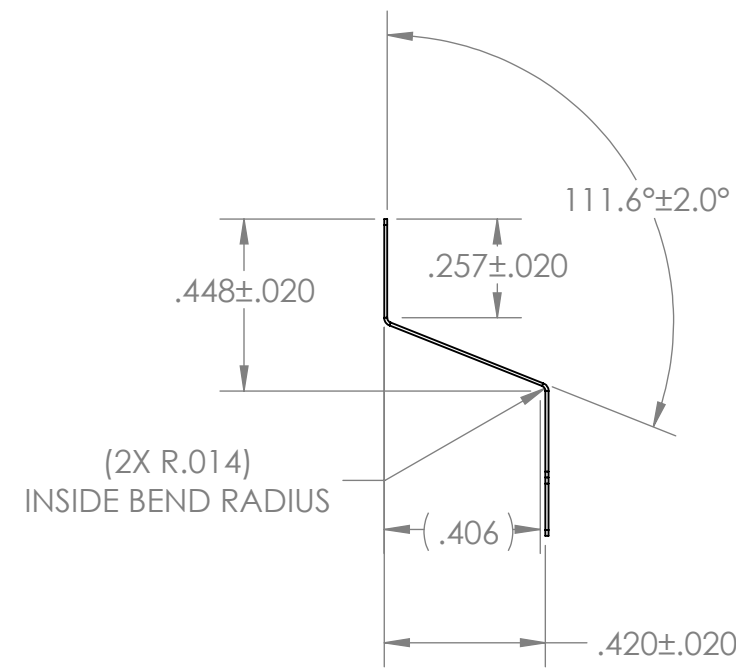
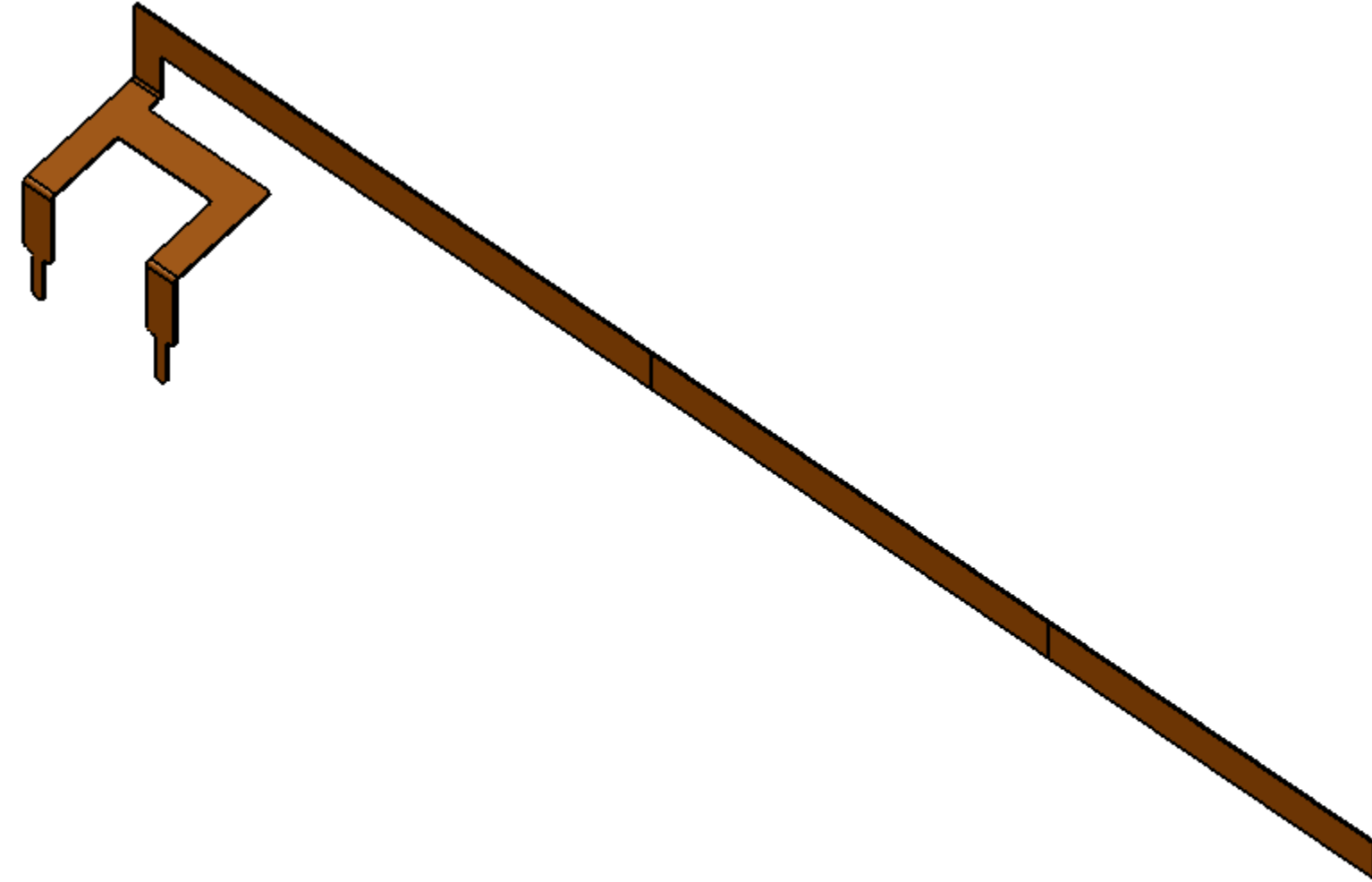
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REVISION HISTORY			
ENG REV	DASH NUMBER	CHANGE DESCRIPTION (LIST ECO# IF APPLICABLE)	DATE DD-MMM-YYYY
A	-00	INITIAL RELEASE	09-JUL-2015
B	-01	INCREASED LENGTH FROM 5.293 TO 5.569. ADDED BENDS TO THE LEGS AND ORGANIC SURFACE PROTECTION. REMOVED WORKMANSHIP NOTE.	27-AUG-2015

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5. ROHS COMPLIANT WITH RESTRICTIONS ON HAZARDOUS SUBSTANCES PER DIRECTIVE 2011/65/EC.
6. POST SURFACE TREATMENT: ORGANIC SURFACE PROTECTION (OSP).



DESCRIPTION		PIFA ANTENNA, LEFT 14MM, SIRIUS BASE	
TOLERANCES UNLESS OTHERWISE NOTED	PART NUMBER	UNITS	INCH
LINERAR X.X ± 0.1	439230-01	SCALE	2:1
X.XX ± 0.01	DRAWING LAST MODIFIED BY	6/17/2015	
X.XXX ± 0.004	steven.kleis	DRAWING FILE NAME	439230
ANGLES ± 0.5°		PROJECT	D183
		DRAWING ITERATION	B-4
		INTERPRET GEOMETRIC DIMENSIONS AND TOLERANCES ACCORDING TO ASME Y14.5-2009	REV B
		DO NOT SCALE DRAWING	THIRD ANGLE PROJECTION
<b>CONFIDENTIAL</b> <small>ALL INFORMATION CONTAINED IN THIS DRAWING MAY NOT BE USED WITHOUT THE WRITTEN CONSENT OF PLEXUS ENGINEERING SOLUTIONS</small>		SHEET SIZE C	SHEET 1 of 2

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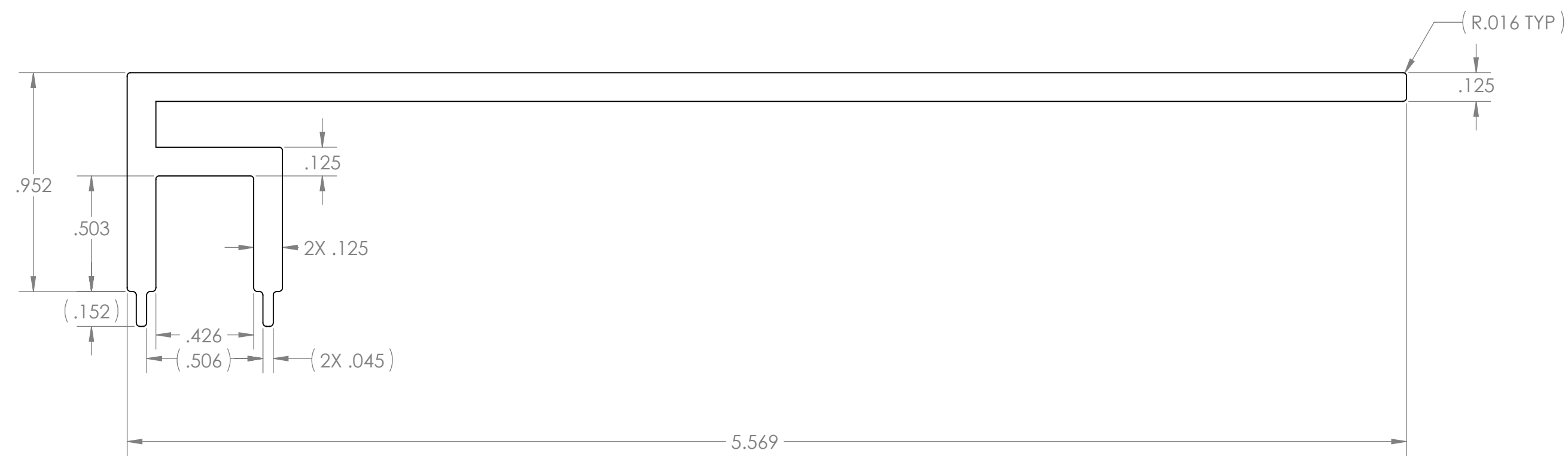
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DESCRIPTION		PIFA ANTENNA, LEFT 14MM, SIRIUS BASE	
TOLERANCES UNLESS OTHERWISE NOTED	PART NUMBER	UNITS	INCH
LINEAR X.X : ± 0.1	439230-01	SCALE	2:1
X.XX : ± 0.01	DRAWING LAST MODIFIED BY	DRAWING CREATION DATE	
X.XXX : ± 0.004	steven.kleis	439230	6/17/2015
ANGLES : ± 0.5°		PROJECT	DRAWING ITERATION
		D183	B-4
		INTERPRET GEOMETRIC DIMENSIONS AND TOLERANCES ACCORDING TO ASME Y14.5-2009	THIRD ANGLE PROJECTION
		DO NOT SCALE DRAWING	REV B
<b>CONFIDENTIAL</b> ALL INFORMATION CONTAINED IN THIS DRAWING MAY NOT BE USED WITHOUT THE WRITTEN CONSENT OF PLEXUS ENGINEERING SOLUTIONS	SHEET SIZE C	SHEET 2 of 2	

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