 Medtronic MEDTRONIC CONFIDENTIAL	DHF Project Name		Page
	NA		1 of 1
	Deliverable	Technical Construction/Documentation File Element	
	Title	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)
Antenna 1	404.853	-18.4
Antenna 2	403.349	-17.90

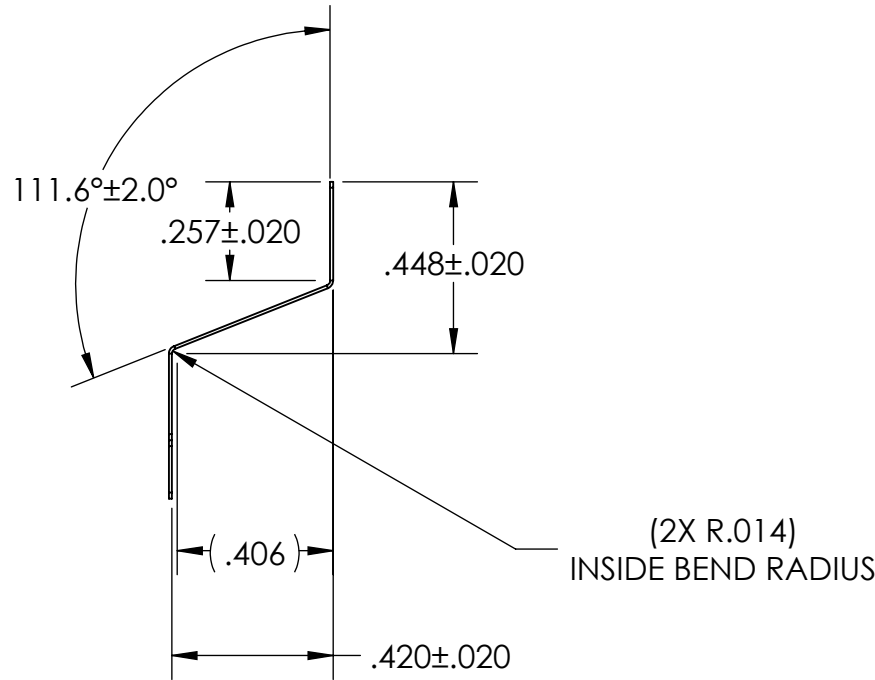
Antenna 1: Gain = -18.4 – (-16.53) = -1.87 dBi



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

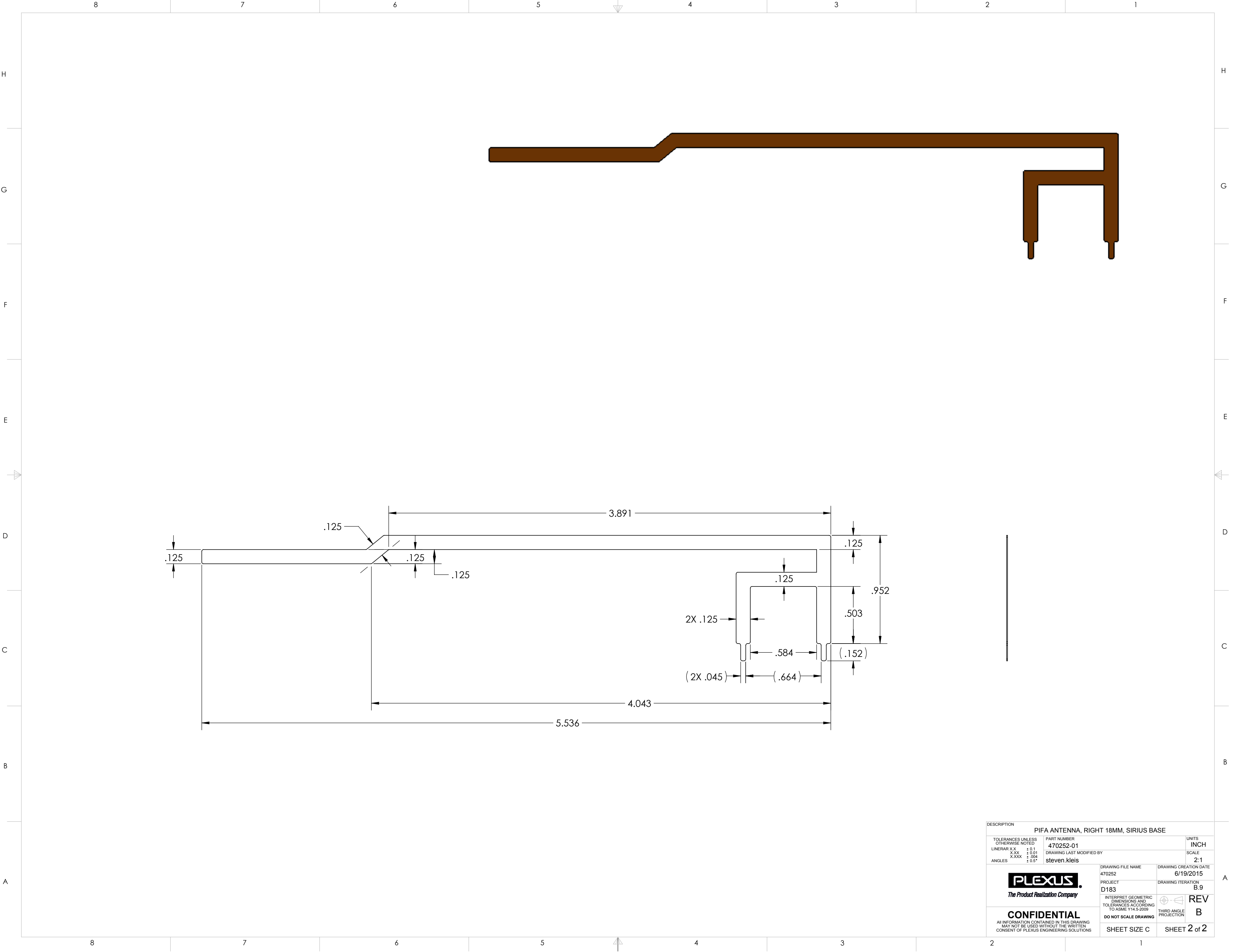
NOTES (UNLESS OTHERWISE SPECIFIED)

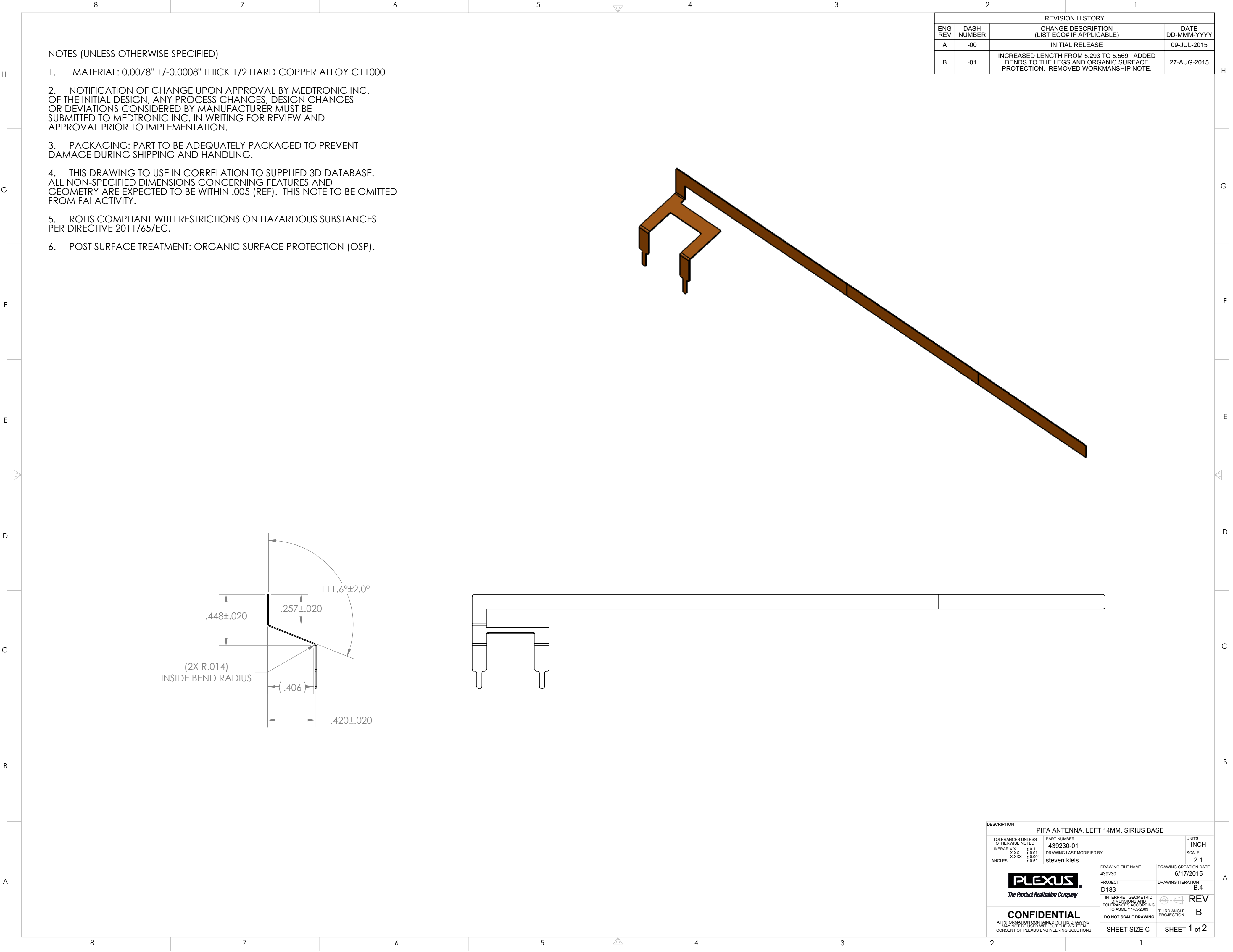
- MATERIAL: 0.0078" +/-0.0008" THICK 1/2 HARD COPPER ALLOY C11000
- NOTIFICATION OF CHANGE UPON APPROVAL BY MEDTRONIC INC. OF THE INITIAL DESIGN, ANY PROCESS CHANGES, DESIGN CHANGES OR DEVIATIONS CONSIDERED BY MANUFACTURER MUST BE SUBMITTED TO MEDTRONIC INC. IN WRITING FOR REVIEW AND APPROVAL PRIOR TO IMPLEMENTATION.
- PACKAGING: PART TO BE ADEQUATELY PACKAGED TO PREVENT DAMAGE DURING SHIPPING AND HANDLING.
- 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.
- ROHS COMPLIANT WITH RESTRICTIONS ON HAZARDOUS SUBSTANCES PER DIRECTIVE 2011/65/EC.
- 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			
PIFA ANTENNA, RIGHT 18MM, SIRIUS BASE			
TOLERANCES UNLESS OTHERWISE NOTED LINERAR X.X ± 0.1 X.XX ± 0.01 X.XXX ± .004 ANGLES ± 0.5°	PART NUMBER	UNITS	
	470252-01	INCH	
	DRAWING LAST MODIFIED BY	SCALE	
	steven.kleis	2:1	
 <i>The Product Realization Company</i>	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		
DO NOT SCALE DRAWING			REV B
SHEET SIZE C		SHEET 1 of 2	





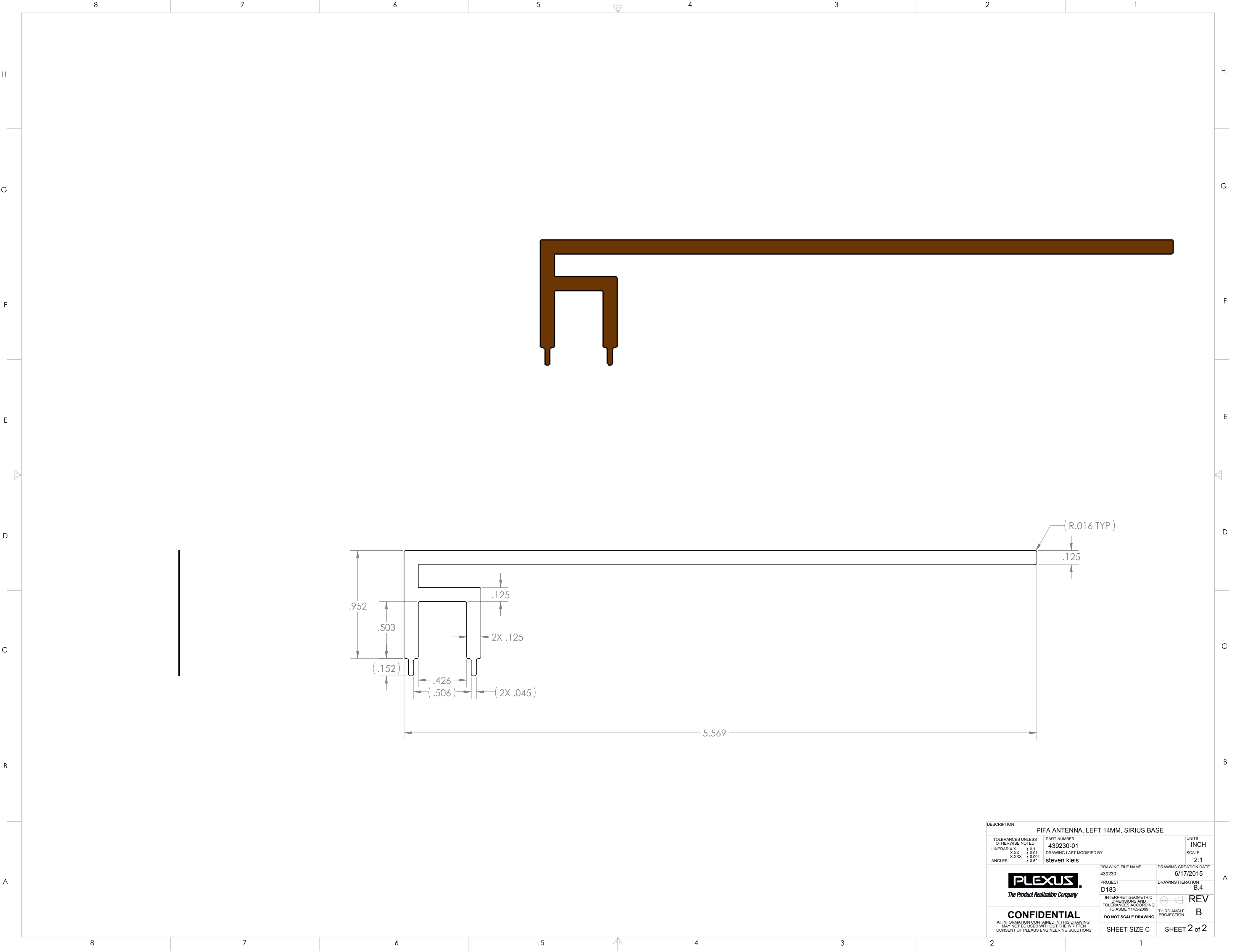




NOTES (UNLESS OTHERWISE SPECIFIED)

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 .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 5.293 TO 5.569. ADDED BENDS TO THE LEGS AND ORGANIC SURFACE PROTECTION. REMOVED WORKMANSHIP NOTE.	27-AUG-2015

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



DESCRIPTION			PIFA ANTENNA, LEFT 14MM, SIRIUS BASE	
TOLERANCES UNLESS OTHERWISE NOTED LINERAR X.X ± 0.1 X.XX ± 0.01 X.XXX ± 0.004 ANGLES ± 0.5°	PART NUMBER		UNITS	
	439230-01		INCH	
	DRAWING LAST MODIFIED BY		SCALE	
	steven.kleis		2:1	
 The Product Realization Company		DRAWING FILE NAME	DRAWING CREATION DATE	
		439230	6/17/2015	
		PROJECT	DRAWING ITERATION	
		D183	B.4	
		INTERPRET GEOMETRIC DIMENSIONS AND TOLERANCES ACCORDING TO ASME Y14.5-2009	 REV B	
		DO NOT SCALE DRAWING		
CONFIDENTIAL 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	