

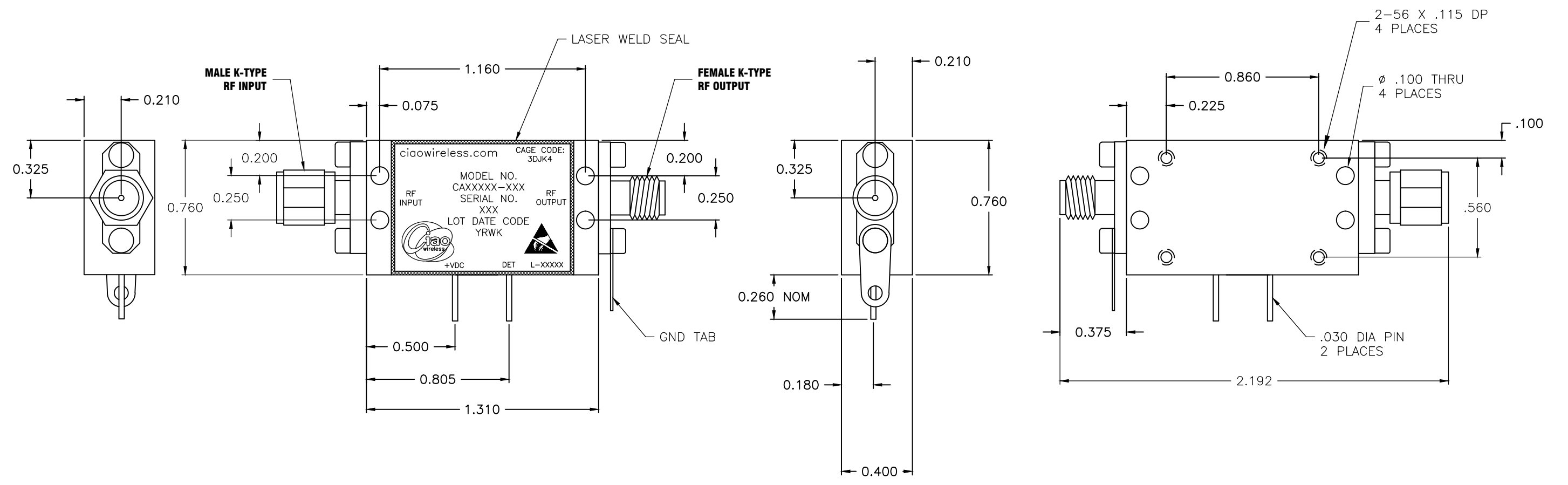
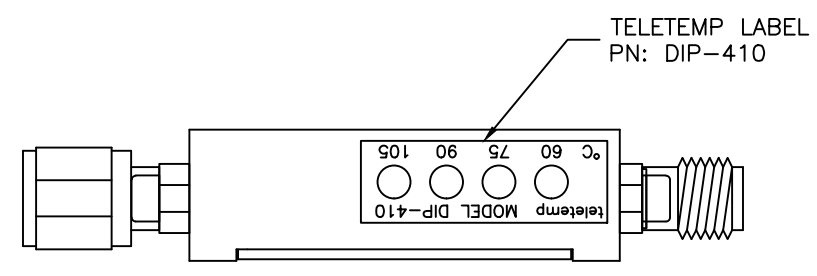


Ciao Wireless Model Specification Sheet

Part Number					
CA240-241DS-MF					
Specifications @ +25°C unless otherwise noted					
	Min	Typ	Max	Unit of Measure	Condition
Frequency Range:	2.0		40.0	GHz	
Gain:	15	22	24	dB	
Gain Flatness:		±2.75	±3.25	dB	<i>Over Frequency</i>
Noise Figure:		8.0	10.0	dB	
Power Output:	+11	+15		dBm	<i>Over 2.0-28.0 GHz</i>
<i>@ 1 dB Compression Point</i>	+8	+10		dBm	<i>Over 28.01-40.0 GHz</i>
VSWR Input:		2.0:1	2.3:1		
VSWR Output:		2.0:1	2.3:1		
3rd Order ICP:	+17	+20		dBm	<i>Over 2.0-28.0 GHz</i>
<i>Two-Tone (Output) @ +10 dBm Per Tone</i>	+13	+15		dBm	<i>Over 28.01-40.0 GHz</i>
Max Input Power:			+10	dBm	<i>CW (Without Damage)</i>
DC Power:	+12		+15	VDC	<i>(+16.5-VDC Absolute Max)</i>
Current		330	385	mA	
Detector <small>(Via Solder Pin)</small>					
Detected Output Voltage:	+1.0	+3.0	+4.0	Volts	<i>@ +11 dBm Output Power Level</i>
			+3.0	Volts	<i>@ +1 dBm Output Power Level</i>
Options Included:					
Laser Weld Seal:	Unit Includes Hermetic Seal Via Laser Weld				
Detected Output:	Unit Includes Integrated Detected Output (Via Solder Pin)				
Features Included:					
-Unit Includes Internal Voltage Regulation, Reverse Polarity Protection & DC Filtered Feed-Thru (5000 pF Capacitance)					
-Unit Is Unconditionally Stable & 100% Tested For This By Ciao					
	Outline Name		Outline Number		
Size:	K3S-NR-W-KMF-2FT		30729-KMF-2FT		Hermetically Sealed
Connectors:	Input		K-Type	Male	(Field Replaceable) Per MIL-C-39012
	Output		K-Type	Female	
Environmental Conditions:					
		Min	Max		
Operating Temp	°C	-20	+65	Continuous Operation	(Baseplate Temp)
Storage Temp:	°C	-55	+95	Non-Operating	
Maximum Temp:	°C		+100	Non-Operating	
Minimum Environmental Ratings (Guaranteed by Design)**:					
-Humidity: Per MIL-STD-202F, Method 103B, Condition B (95%)			-Altitude: Per MIL-STD-202F, Method 105C, Condition B		
-Shock: Per MIL-STD-202F, Method 213B, Condition B			-Temperature Cycle: Per MIL-STD-202F, Method 107D, Condition A		
Heatsinking Required: In order to ensure long-term reliable performance, user must provide proper heat sinking and heat removal to limit maximum baseplate temperature to +65°C. All of Ciao's units are available with optional Heatsink (with fins if forced air cooling is available) or Heatblock (for convection cooling). Inquire to the factory for further details as these can vary in size depending upon the application and ambient operating temperature that the item will be operating.					
** Ciao has qualified its standard designs to various environmental conditions. If you require qualification by design/similarity information for any other environmental standard. Please contact the factory and this information can be provided.					
Ciao Wireless can conduct full environmental testing including production up-screening and qualification screening in accordance with most customer's specific requirements. Please contact the factory and Ciao Wireless will be pleased to quote for any screening profile.					

**** PROPRIETARY DATA ****
 THIS DOCUMENT CONTAINS DATA WHICH IS PROPRIETARY OR CONFIDENTIAL TO CIAO WIRELESS. THIS DOCUMENT AND THE DATA CONTAINED HEREIN SHALL NOT BE USED, DUPLICATED, OR ALTERED WITHOUT THE EXPRESSED WRITTEN CONSENT OF CIAO WIRELESS. ALL RIGHTS ARE RESERVED.

REVISIONS					
ZONE	REV	DESCRIPTION	ECO#	DATE	APPROVED
	A	RELEASED			



NOTES:
 1. OUTLINE IS AVAILABLE IN "STEP", "IGES", OR "DWG" FORMATS UPON REQUEST.

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS DECIMALS HOLES ANGLES $\pm 1/64$.XX ± 0.03 .XX ± 0.03 $\pm 0^{\circ}30'$.XXX ± 0.010 .XXX ± 0.010 MACHINED FINISH: 32 RMS REMOVE BURRS .005 MAX		CONTRACT NO.		CIAO WIRELESS 4000 VIA PESCADOR CAMARILLO CA, 93012	
MATERIAL HOUSING: ALUMINUM 6061-T6 COVER: ALUMINUM 4047		APPROVALS DATE			
NEXT ASSY CA040-241DS-K USED ON		DRAWN: A. ROQUE 04/14/15		K3S-NR-W-KMF-2FT ICD AMP	
APPLICATION DO NOT SCALE DRAWING		ENGINEERING:		SIZE CAGE CODE DWG. NO. REV.	
		QUALITY ASSURANCE:		B 3DJJK4 30729-KMF-2FT A	
		MANUFACTURING:		SCALE 1/1 SHEET 1 OF 1	

DWG NO. 30729-KMF-2FT REV A

Frequency (GHz) 1.5 GHz to 40.0 GHz	Gain (dB)	Input/Output VSWR	Noise Figure (dB)	Output Power @ 1 dB PT		Detected Output Voltage		3 RD Order ICP (dBm) Two-Tone (Output) @ +10 dBm Per Tone		Unconditional Stability Test
						@ +11 dBm	@ +1 dBm			
	SEE	SEE	SEE	Freq		Freq		Freq		---
1.5	PLOTTED	PLOTTED	PLOTTED	1.5 GHz	+18.11	1.5 GHz	1.29 0.33	1.5 GHz	+26.56	HF TEST OK
10.0	DATA	DATA	DATA	4.0 GHz	+18.09	4.0 GHz	1.35 0.35	10.0 GHz	+26.11	
20.0	---	---	---	7.0 GHz	+18.00	7.0 GHz	1.50 0.39	20.0 GHz	+25.11	LF TEST OK
30.0	---	---	---	10.0 GHz	+17.03	10.0 GHz	1.66 0.43			
40.0	---	---	---	13.0 GHz	+16.11	13.0 GHz	1.78 0.46			
	---	---	---	16.0 GHz	+15.08	16.0 GHz	1.81 0.47			
	---	---	---	19.0 GHz	+14.71	19.0 GHz	1.09 0.33			
	---	---	---	22.0 GHz	+14.66	22.0 GHz	2.29 0.58			
	---	---	---	25.0 GHz	+15.08	25.0 GHz	3.07 0.82			
	---	---	---	28.0 GHz	+13.03	28.0 GHz	3.35 0.85			
	---	---	---	28.01 GHz		28.01 GHz	3.38 0.89			
	---	---	---	31.0 GHz		31.0 GHz	1.78 0.39			
	---	---	---	34.0 GHz		34.0 GHz	1.43 0.34			
	---	---	---	37.0 GHz		37.0 GHz	2.05 0.47			
	Pass	Pass	Pass	40.0 GHz		40.0 GHz	1.77 0.39			
	30 MIN 40 MAX	2.3:1 MAX	10.0 MAX		+11 dBm MIN Over 1.5-28.0 GHz	+8 MIN Over 28.01-40.0 GHz	+1.0V TO +4.0 V +3.0V MAX	+17 MIN Over 1.5-28.0 GHz	+13 MIN Over 28.01-40.0 GHz	Checked by 7/8
	Gain Flatness (dB) ±4.0 TYP.	Checked By: Actual: +/- 4.15 7/8								

Power Supply	DC Current Consumption	Actual DC Current Power consumption at specified operating voltage		Checked by: 7/8
+12 to +15 VDC	685mA MAX	+12 VDC	575 mA	CIAO 7/8/16
		+15 VDC	575 mA	

MODEL: CA140-441DS-MF
DEVICE ID: S/N101

DATE: 02/23/2016 08:32 Page 1
OPERATOR:

START: 0.040000000 GHz GATE START: - ERROR CORR: 12-TERM
STOP: 41.000000000 GHz GATE STOP: - AVERAGING: 1 PT
STEP: 0.051200000 GHz GATE: - IF BNDWDTH: 1 KHz
WINDOW: -

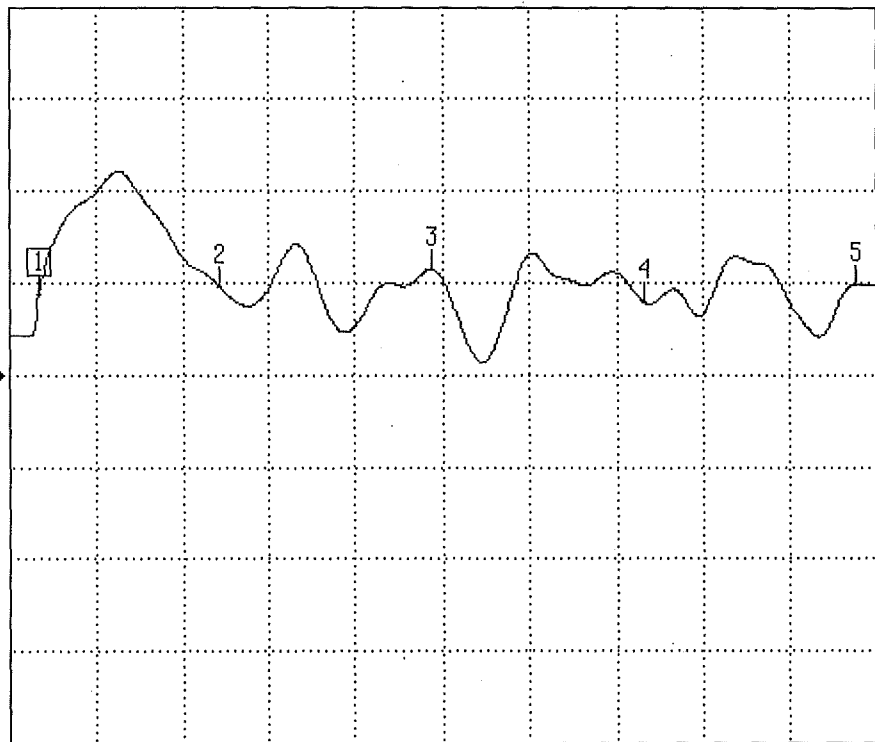
PARAMETER: -----CH1-----
NORMALIZATION: -S21-
REFERENCE PLANE: 0.0000 mm
SMOOTHING: 6.0 PERCENT
DELAY APERTURE: -



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S21 FORWARD TRANSMISSION

LOG MAGNITUDE ▶ REF=30.000 dB 4.000 dB/DIV



0.040000000 GHz 41.000000000

CH 1 - S21
0.0000 mm REF
0.000 dB OFFSET
0.00° OFFSET

▶ MARKER 1
1.473600000 GHz
33.520 dB

MARKER TO MAX
MARKER TO MIN

2 10.024000000 GHz
33.832 dB

3 20.008000000 GHz
34.582 dB

4 30.043200000 GHz
33.135 dB

5 40.027200000 GHz
33.880 dB

Gain

MARKER READOUT
FUNCTIONS

37397C

MODEL: CA40-441DS-MF
 DEVICE ID: S/D 101

DATE: 02/23/2016 08:33 Page 1
 OPERATOR:

START: 0.040000000 GHz GATE START: - ERROR CORR: 12-TERM
 STOP: 41.000000000 GHz GATE STOP: - AVERAGING: 1 PT
 STEP: 0.051200000 GHz GATE: - IF BNDWDTH: 1 KHz
 WINDOW: -

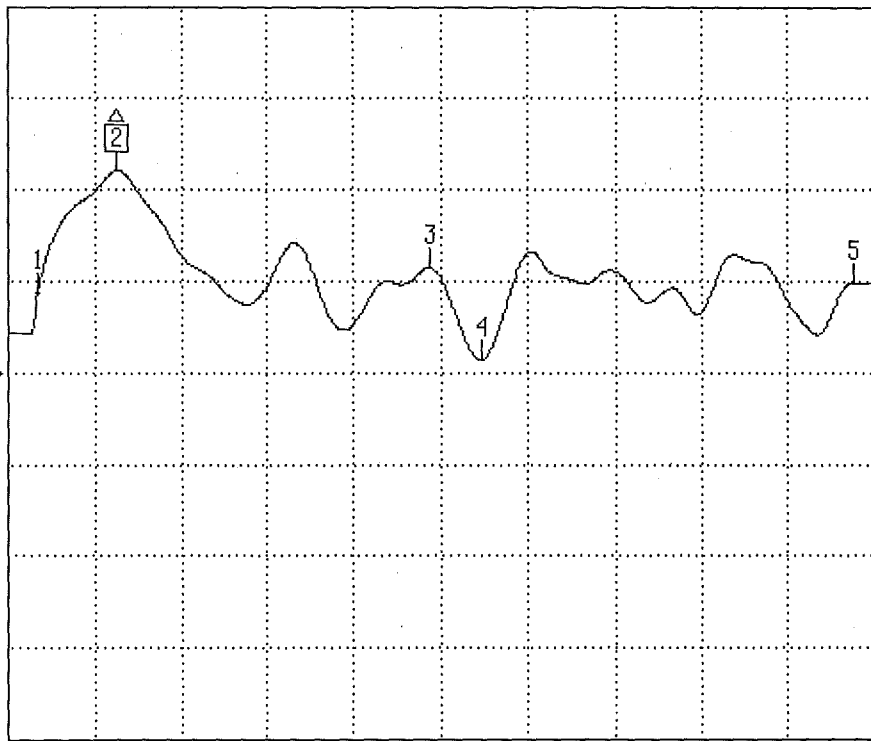
-----CH1-----
 PARAMETER: -S21-
 NORMALIZATION: OFF
 REFERENCE PLANE: 0.0000 mm
 SMOOTHING: 6.0 PERCENT
 DELAY APERTURE: -



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S21 FORWARD TRANSMISSION

LOG MAGNITUDE REF=30.000 dB 4.000 dB/DIV



CH 1 - S21
 0.0000 mm REF
 0.000 dB OFFSET
 0.00° OFFSET

MARKER 2 ΔREF
 5.160000000 GHz
 MARKER TO MAX
 MARKER TO MIN

Δ(2-1)
 3.686400000 GHz
 5.330 dB

Δ(2-3)
 -14.848000000 GHz
 4.268 dB

Δ(2-4)
 -17.305600000 GHz
 8.316 dB *

Δ(2-5)
 -34.867200000 GHz
 4.970 dB

*Gain
 Flatness*

MARKER READOUT
 FUNCTIONS

37397C

MODEL: CA140-441DS-MF
DEVICE ID: S1101

DATE: 02/23/2016 08:40 Page 1
OPERATOR:

START: 0.040000000 GHz GATE START: - ERROR CORR: 12-TERM
STOP: 41.000000000 GHz GATE STOP: - AVERAGING: 1 PT
STEP: 0.051200000 GHz GATE: - IF BNDWDTH: 1 KHz
WINDOW: -

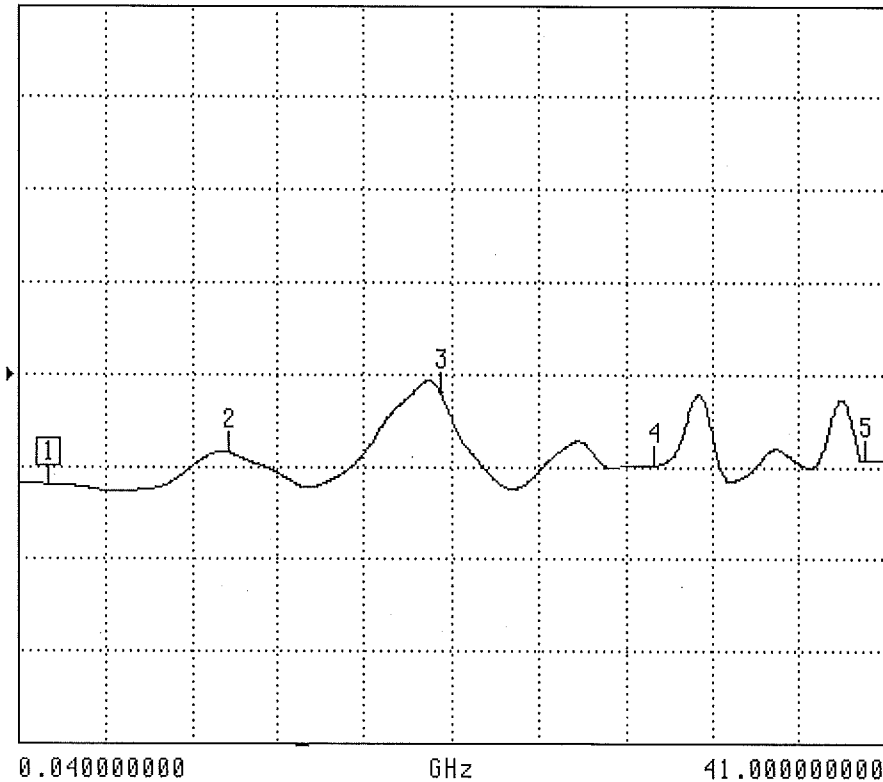
-----CH3-----
PARAMETER: -S11-
NORMALIZATION: OFF
REFERENCE PLANE: 0.0000 mm
SMOOTHING: 6.0 PERCENT
DELAY APERTURE: -



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S11 FORWARD REFLECTION

SWR REF=2.300 U 1.000 U/DIV



CH 3 - S11
0.0000 mm REF
0.000 dB OFFSET
0.00° OFFSET

MARKER 1
1.473600000 GHz
1.101 U

MARKER TO MAX
MARKER TO MIN

- 2 10.024000000 GHz
1.443 U
- 3 20.008000000 GHz
2.101 U
- 4 30.043200000 GHz
1.305 U
- 5 40.027200000 GHz
1.364 U

*Input
VSWR*

MARKER READOUT
FUNCTIONS

37397C

MODEL: CA140-441DS-MF
 DEVICE ID: S/N101

DATE: 02/23/2016 08:38 Page 1
 OPERATOR:

START: 0.040000000 GHz GATE START: - ERROR CORR: 12-TERM
 STOP: 41.000000000 GHz GATE STOP: - AVERAGING: 1 PT
 STEP: 0.051200000 GHz GATE: - IF BNDWDTH: 1 KHz
 WINDOW: -

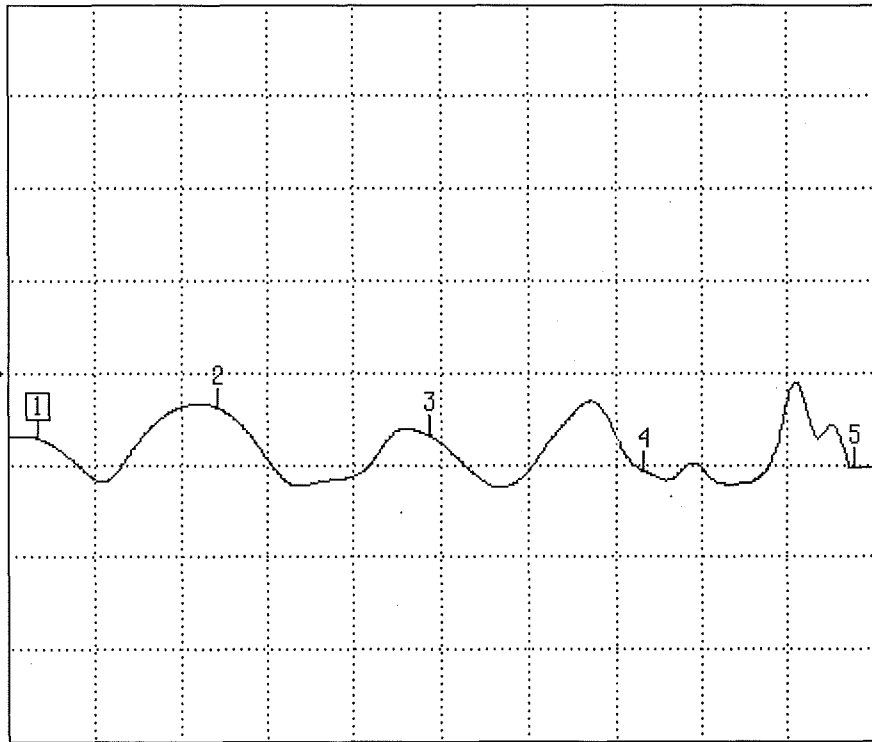
-----CH4-----
 PARAMETER: -S22-
 NORMALIZATION: OFF
 REFERENCE PLANE: 0.0000 mm
 SMOOTHING: 6.0 PERCENT
 DELAY APERTURE: -



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S22 REVERSE REFLECTION

SWR REF=2.300 U 1.000 U/DIV



0.040000000 GHz 41.000000000

CH 4 - S22
 0.0000 mm REF
 0.000 dB OFFSET
 0.00° OFFSET

MARKER 1
 1.473600000 GHz
 1.579 U

MARKER TO MAX
 MARKER TO MIN

- 2 10.024000000 GHz
1.914 U
- 3 20.008000000 GHz
1.610 U
- 4 30.043200000 GHz
1.226 U
- 5 40.027200000 GHz
1.268 U

*0 output
 VSWR*

MARKER READOUT
 FUNCTIONS

SIM101 + 10dB PAO CA140-44/DS-MF		Frequency												
DUT Amplifier Sys Downconv Off		Freq Mode List												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 5px;">Freq</th> <th style="text-align: left; padding: 5px;">NoiseFig dB</th> <th style="text-align: left; padding: 5px;">Gain dB</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">1.500000 GHz</td> <td style="padding: 5px;">5.119</td> <td style="padding: 5px;">23.104</td> </tr> <tr> <td style="padding: 5px;">10.000000 GHz</td> <td style="padding: 5px;">3.662</td> <td style="padding: 5px;">22.924</td> </tr> <tr> <td style="padding: 5px;">20.000000 GHz</td> <td style="padding: 5px;">5.495</td> <td style="padding: 5px;">21.749</td> </tr> </tbody> </table>		Freq	NoiseFig dB	Gain dB	1.500000 GHz	5.119	23.104	10.000000 GHz	3.662	22.924	20.000000 GHz	5.495	21.749	Start Freq 2.00000000 GHz
Freq	NoiseFig dB	Gain dB												
1.500000 GHz	5.119	23.104												
10.000000 GHz	3.662	22.924												
20.000000 GHz	5.495	21.749												
		Stop Freq 18.00000000 GHz												
		Center Freq 10.00000000 GHz												
		Freq Span 16.00000000 GHz												
		Fixed Freq 10.00000000 MHz												
Start 1.50000 GHz BW 4 MHz Points 3 Stop 20.00000 GHz Tcold 299.65 K Avgs Off Att 0/0 dB Loss Off Corr		More 1 of 2												



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SIN101		+ 10 dB PAO		CA140-441DS-MF																																																	
DUT Amplifier		Sys Downconv On		LO Mode Fixed																																																	
Sideband USB		LO Freq 29.50000 GHz																																																			
Freq	NoiseFig dB	Gain dB																																																			
30.000000 GHz	6.929	22.999																																																			
40.000000 GHz	6.871	21.713																																																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="6" style="text-align: center;">Frequency</td> </tr> <tr> <td colspan="6" style="text-align: center;">Freq Mode Sweep</td> </tr> <tr> <td colspan="6" style="text-align: center;">Start Freq 30.000000 GHz</td> </tr> <tr> <td colspan="6" style="text-align: center;">Stop Freq 40.000000 GHz</td> </tr> <tr> <td colspan="6" style="text-align: center;">Center Freq 35.000000 GHz</td> </tr> <tr> <td colspan="6" style="text-align: center;">Freq Span 10.000000 GHz</td> </tr> <tr> <td colspan="6" style="text-align: center;">Fixed Freq 14.750000 GHz</td> </tr> <tr> <td colspan="6" style="text-align: center;">More 1 of 2</td> </tr> </table>						Frequency						Freq Mode Sweep						Start Freq 30.000000 GHz						Stop Freq 40.000000 GHz						Center Freq 35.000000 GHz						Freq Span 10.000000 GHz						Fixed Freq 14.750000 GHz						More 1 of 2					
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Fixed Freq 14.750000 GHz																																																					
More 1 of 2																																																					
Start 30.00000 GHz	BW 4 MHz	Points 2	Stop 40.00000 GHz																																																		
Tcold 296.50 K	Avg Off	Att 0/0 dB	Loss Off	Corr																																																	



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Ciao Wireless Model Specification Sheet

Part Number CA240-241DS-MF

Ciao Wireless, Inc. is a Small Business, Minority-Owned (Not SDB).

Ciao Wireless' standard warranty period is 12-months from date of shipment and warrants against any defects, issues caused by poor workmanship or faulty devices as utilized within the Ciao Wireless product.

Ciao Wireless reserves the right to determine the final fault analysis of any unit returned for evaluation and repair, and if found that the units have been damaged outside of Ciao Wireless either by the customer or in the field and through conditions not otherwise the fault of Ciao Wireless, a cost to repair may apply.

No returns are accepted without Ciao Wireless' exclusive authorization. A formal Return Material Authorization (RMA) number must be obtained for any part(s) that the customer wishes to return for evaluation and repair.

The model(s) as depicted in this data sheet is/are EAR 99. However, depending upon their ultimate end-use/user, may still be subject to U.S. Government export control law and regulations, including the International in Arms Regulations (ITAR) and the Export Administration Regulations (EAR). If the subject goods are to be ultimately exported from the U.S.A., whether in their purchased condition or integrated as a part of a sub-assembly or system, the exporter of record is responsible for ensuring compliance to all U.S. Government export control laws and regulations, including ITAR and EAR.

Ciao Wireless' Standard Payment Terms: NET 30 Days Upon Approved Credit, Credit Card (M/C, Visa, Discover, AMEX), or Pre-Payment via Bank Wire or Certified Check.

For Price, Delivery, other Product Information and to place orders, please contact Ciao Wireless, Inc:

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E-MAIL: sales@ciaowireless.com Web: www.ciaowireless.com
Cage Code: 3DJK4

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