



PLANAR MONOLITHICS INDUSTRIES, INC.
 7311-G GROVE RD., FREDERICK MD. 21704
 TEL: 301-631-1579 FAX: 301-662-2029
 URL: WWW.PLANARMONOLITHICS.COM
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 ISO 9001:2000 CERTIFIED

FORM: XXX-SS-DTA
 DATE: 01-05-07

ACCEPTANCE TEST DATA SHEET
 ON

RF OSCILLATOR COMPONENT CONSOLIDATION / RF SUB-ASSEMBLY

CUSTOMER: _____
 JOB NO: _____
 MODEL NO: RFOC-811-QRC
 SERIAL NO: PM6116634

TECHNICIAN: Corbin Chadwick
 CUSTOMER PN: R50-008-001
 OPTION NO: _____
 FREQUENCY RANGE: 8 TO 11 GHz

PARAMETERS TO BE TESTED			SPECIFIED		MEASURED		NOTES
FREQUENCY			8 GHz TO 11 GHz				
Selected Path Gain/Loss	Input Port	Output Port	Min.	Max.			
	J1005	J1014	3dB	-	6.0dB;9.4dB		Set AT8 to min. and SW3 ON
	J1005	J1007	6dB	20dB	10.7dB;14.6dB		Set SW2 ON
	J1013	J1014	10dB	23dB	13.8dB;18.4dB		SET AT2 TO MIN. SET AT7 AND AT8 TO MAX. SET SW7 AND SW8 OFF
	J1013	J1014	0dB	13dB	2.9dB;7.2dB		SET AT2 TO MAX. SET AT7 AND AT8 MIN. SET SW7 AND SW8 ON
	J1013	J1007	3dB	16dB	9.6dB;12.7dB		SET AT7 TO MIN. AND SET SW7 ON
	J1006	J1015	-10dB	-	-5.8dB;-4.2dB		SET AT1 TO MIN., SET SW1 K1 TO ON
	J1006	J1012	3dB	20dB	9.9dB;12.0dB		SET AT1 TO MIN., SET SW1 TO ON, SET K1 TO OFF
	J1016	J1012	3dB	20dB	9.8dB;12.6dB		SET AT6 TO MIN. AND SET SW6 TO ON
	J1017	J1012	3dB	20dB	11.1dB;13.1dB		SET AT3 TO MIN. AND SW3 TO ON
	J1011	J1012	3dB	20dB	10.2dB;12.9dB		SET AT5 TO MIN. AND SW5 TO ON
	J1008	J1009	6dB	16dB	10.9dB;15.2dB		SET AT4 TO MIN. AND SW4 TO ON
	J1008	J1010	9dB	19dB	13.1dB;15.8dB		
Output Ports			Min. (dBm)	Max. (dBm)	Min (dBm)	Max (dBm)	
J1007			11.65	>11.65	17.9	>+18.7	SET SW2 SW7,SW8 ON
J1014			≤-50.0	≥+6.92	<-53.7	>+11.9	SET SW1 ON, SET K1 SWITCHED TO J1015
J1015			≤-50.0	≥+5.0	<-53.7	>+7.9	SET K1, SW1, SW5, SW6 OFF. SET SW3 ON
J1012			≤-60.0	≥+13.0	<-60.0	>+23.5	SET K1, SW1, SW3, SW6 ON
J1009			≤-60.0	≥-0.35	<-60.0	>+1.5	SET SW4 ON



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J1010		≤-45.35	≥+4.65	<-46.2	>+4.8	
Input	Output	Min.	Goal			
Isolation	J1013	J1012	55dB	70dB		
		J1009	55dB	70dB		
		J1010	55dB	70dB		
	J1008	J1012	55dB	70dB		
		J1014	55dB	70dB		
		J1012	55dB	70dB		
	J1005	J1009	55dB	70dB		
		J1010	55dB	70dB		
		J1014	55dB	70dB		
	J1016	J1009	55dB	70dB		
		J1014	55dB	70dB		
	J1012	J1014	55dB	70dB		
J1010		55dB	70dB			
J1011	J1014	55dB	70dB			
	J1010	55dB	70dB			
VSWR	INPUTS	J1005	2.0:1			
		J1013	2.0:1			
		J1006	2.0:1			
		J1016	2.0:1			
		J1017	2.0:1			
		J1011	2.0:1			
		J1008	2.0:1			
	OUTPUTS	J1007	2.5:1			
		J1014	2.5:1			
		J1015	2.5:1			
		J1012	2.5:1			
		J1009	2.5:1			
		J1010	2.5:1			
Throughput delay	RF Paths					
	J1008	J1009	10ns	5.5ns		
	J1008	J1010	10ns	5.6ns		
	J1006	J1012	10ns	6.6ns		
	J1006	J1015	10ns	5.0ns		
	J1011	J1012	10ns	5.2ns		
	J1017	J1012	10ns	5.4ns		
	J1016	J1012	10ns	5.4ns		
	J1013	J1014	10ns	6.2ns	AT2, AT3 PATH	
	J1013	J1014	10ns	7.4ns	AT7, AT8 PATH	
	J1013	J1007	10ns	5.5ns		
	J1005	J1014	10ns	7.9ns		
	J1005	J1007	10ns	5.8ns		
SWITCH ON/OFF	SWITCH		ON (ns)	OFF (ns)	ON (ns)	OFF (ns)
	SW1		50	50	30.8	32.4
	SW2		50	50	23.6	37.2
	SW3		50	50	24.0	32.2
	SW4		50	50	25.6	28.4
	SW5		50	50	27.8	34.8

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	SW6	50	50	24.2	28.8	
	SW7	50	50	24.4	34.9	
	SW8	50	50	30.8	34.4	
ATTENUATOR ON/OFF	ATTENUATOR	Rise (μ s)	Fall (ns)	Rise (μ s)	Fall (ns)	
	AT1	1.6	100	1.02	18.8	
	AT2	1.6	100	0.43	15.2	
	AT3	1.6	100	1.01	23.2	
	AT4	1.6	100	1.02	20.8	
	AT5	1.6	100	1.06	23.6	
	AT6	1.6	100	1.02	22.8	
	AT7	1.6	100	1.06	20.8	
	AT8	1.6	100			
DEPTH OF MODULATION	DEVICE	Minimum				
	K1	60dB		70dB		
	AT1	50dB		58dB		
	AT2	50dB		50dB		
	AT3	50dB		56dB		
	AT4	50dB		59dB		
	AT5	50dB		56dB		
	AT6	50dB		57dB		
	AT7	40dB		57dB		
	AT8	50dB		58dB		
	SW1	60dB		65dB		
	SW2	60dB		80dB		
	SW3	60dB		75dB		
	SW4	60dB		75dB		
	SW5	60dB		68dB		
	SW6	60dB		75dB		
SW7	50dB		75dB			
SW8	60dB		70dB			
SWITCH CONTROL LOGIC	TTL "0"	ON				NOT REQUIRED FOR ACCEPTANCE TEST
	TTL "1"	OFF				
ATTENUATOR CONTROL VOLTAGE	VOLTAGE RANGE	0 TO 6v		0 to 6v		
	TRANSFER FUNCTION	10dB/V		10dB/V		
DC POWER	Voltages	Max.				NOT REQUIRED FOR ACCEPTANCE TEST
	+5V	5.0A				
	+15V	3.0A				
	-15V	3.0A				
	+28V	1.0A				

TEST ON: Agilent N5230A Network Analyzer, Agilent E4407B Spectrum Analyzer,
 Gigatronix 8541 Power Meter, Tektronix TDS3014B Digital Phosphor Oscilloscope

QA/QC APPROVAL: _____

Q4

DATED: 1/10/06



FORM: XXX-SS-DTA
 DATE: 01-08-07

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RF OSCILLATOR COMPONENT CONSOLIDATION / RF SUB-ASSEMBLY

CUSTOMER: _____ TECHNICIAN: Corbin Chadwick
 JOB NO: _____ CUSTOMER PN: R50-0018-001
 MODEL NO: RFOC-811-QRC OPTION NO: _____
 SERIAL NO: PM6116635 FREQUENCY RANGE: 8 TO 11 GHz

PARAMETERS TO BE TESTED			SPECIFIED		MEASURED		NOTES
FREQUENCY			8 GHz TO 11 GHz				
Selected Path Gain/Loss	Input Port	Output Port	Min.	Max.			
	J1005	J1014	3dB	-	4.6dB;9.8dB		Set AT8 to min. and SW3 ON
	J1005	J1007	6dB	20dB	12.5dB;15.4dB		Set SW2 ON
	J1013	J1014	10dB	23dB	15.2dB;19.8dB		SET AT2 TO MIN. SET AT7 AND AT8 TO MAX. SET SW7 AND SW8 OFF
	J1013	J1014	0dB	13dB	3.5dB;8.0dB		SET AT2 TO MAX. SET AT7 AND AT8 MIN. SET SW7 AND SW8 ON
	J1013	J1007	3dB	16dB	12.3dB;14.0dB		SET AT7 TO MIN. AND SET SW7 ON
	J1006	J1015	-10dB	-	-6.3dB;-4.2dB		SET AT1 TO MIN., SET SW1 K1 TO ON
	J1006	J1012	3dB	20dB	9.9dB;12.5dB		SET AT1 TO MIN., SET SW1 TO ON, SET K1 TO OFF
	J1016	J1012	3dB	20dB	10.6dB;13.3dB		SET AT6 TO MIN. AND SET SW6 TO ON
	J1017	J1012	3dB	20dB	11.1dB;13.3dB		SET AT3 TO MIN. AND SW3 TO ON
	J1011	J1012	3dB	20dB	11.0dB;13.5dB		SET AT5 TO MIN. AND SW5 TO ON
	J1008	J1009	6dB	16dB	12.6dB;16.0dB		SET AT4 TO MIN. AND SW4 TO ON
	J1008	J1010	9dB	19dB	17.1dB;18.9dB		
	Output Ports			Min. (dBm)	Max. (dBm)	Min (dBm)	Max (dBm)
J1007			11.65	>11.65	13.3	>+20.5	SET SW2 SW7, SW8 ON
J1014			≤-50.0	≥+6.92	<-58.0	>+9.9	
J1015			≤-50.0	≥+5.0	<-58.0	>+5.0	SET SW1 ON, SET K1 SWITCHED TO J1015
J1012			≤-60.0	≥+13.0	<-60.0	>+20.0	SET K1, SW1, SW5, SW6 OFF. SET SW3 ON SET K1, SW1, SW3, SW6 ON
J1009			≤-60.0	≥-0.35	<-60.0	>+0.62	SET SW4 ON



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		J1010	≤-45.35	≥+4.65	<-47.5	>+4.7	
Isolation	Input	Output	Min.	Goal			
	J1013	J1012	55dB	70dB			
		J1009	55dB	70dB			
		J1010	55dB	70dB			
	J1008	J1012	55dB	70dB			
		J1014	55dB	70dB			
		J1012	55dB	70dB			
	J1005						
		J1009	55dB	70dB			
		J1010	55dB	70dB			
	J1016	J1014	55dB	70dB			
		J1009	55dB	70dB			
	J1012	J1014	55dB	70dB			
J1010		55dB	70dB				
J1011	J1014	55dB	70dB				
	J1010	55dB	70dB				
VSWR	INPUTS	J1005	2.0:1				
		J1013	2.0:1				
		J1006	2.0:1				
		J1016	2.0:1				
		J1017	2.0:1				
		J1011	2.0:1				
		J1008	2.0:1				
	OUTPUTS	J1007	2.5:1				
		J1014	2.5:1				
		J1015	2.5:1				
		J1012	2.5:1				
		J1009	2.5:1				
		J1010	2.5:1				
Throughput delay	RF Paths						
	J1008	J1009	10ns		5.4ns		
	J1008	J1010	10ns		5.5ns		
	J1006	J1012	10ns		6.8ns		
	J1006	J1015	10ns		5.2ns		
	J1011	J1012	10ns		5.4ns		
	J1017	J1012	10ns		5.4ns		
	J1016	J1012	10ns		5.4ns		
	J1013	J1014	10ns		6.4ns		AT2, AT3 PATH
	J1013	J1014	10ns		7.2ns		AT7, AT8 PATH
	J1013	J1007	10ns		5.2ns		
	J1005	J1014	10ns		8.2ns		
	J1005	J1007	10ns		5.6ns		
SWITCH ON/OFF	SWITCH:		ON (ns)	OFF (ns)	ON (ns)	OFF (ns)	
	SW1		50	50	21.8ns	30.6ns	
	SW2		50	50	19.8ns	37.4ns	
	SW3		50	50	22.6ns	35.2ns	
	SW4		50	50	24.6ns	34.8ns	
	SW5		50	50	23.4ns	37.4ns	

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	SW6	50	50	23.2ns	35.4ns	
	SW7	50	50	23.0ns	39.2ns	
	SW8	50	50	22.6ns	33.8ns	
ATTENUATOR ON/OFF	ATTENUATOR	Rise (μ s)	Fall (ns)	Rise (μ s)	Fall (ns)	
	AT1	1.6	100	1.08ns	20.4ns	
	AT2	1.6	100	0.54ns	26.0ns	
	AT3	1.6	100	1.09ns	28.4ns	
	AT4	1.6	100	1.18ns	22.8ns	
	AT5	1.6	100	1.26ns	32.4ns	
	AT6	1.6	100	1.16ns	23.8ns	
	AT7	1.6	100	1.06ns	18.4ns	
	AT8	1.6	100	1.22ns	22.0ns	
DEPTH OF MODULATION	DEVICE	Minimum				
	K1	60dB			60dB	
	AT1	50dB			60dB	
	AT2	50dB			50dB	
	AT3	50dB			65dB	
	AT4	50dB			60dB	
	AT5	50dB			60dB	
	AT6	50dB			60dB	
	AT7	40dB			65dB	
	AT8	50dB			65dB	
	SW1	60dB			60dB	
	SW2	60dB			85dB	
	SW3	60dB			75dB	
	SW4	60dB			70dB	
	SW5	60dB			75dB	
	SW6	60dB			70dB	
SW7	50dB			75dB		
SW8	60dB			70dB		
SWITCH CONTROL LOGIC	TTL "0"	ON				NOT REQUIRED FOR ACCEPTANCE TEST
	TTL "1"	OFF				
ATTENUATOR CONTROL VOLTAGE	VOLTAGE RANGE	0 TO 6v			0 to 6v	
	TRANSFER FUNCTION	10dB/V			10dB/V	
DC POWER	Voltages	Max.				NOT REQUIRED FOR ACCEPTANCE TEST
	+5V	5.0A				
	+15V	3.0A				
	-15V	3.0A				
	+28V	1.0A				

TEST ON: Agilent N5230A Network Analyzer, Agilent E4407B Spectrum Analyzer,
 Gigatronics 8541 Power Meter, Tektronix TDS3014B Digital Phosphor Oscilloscope

QA/QC APPROVAL: _____

Q4 DATED: 1/10/06