



Product Features

- Doherty amplifier design
- GaN on SiC HEMT
- Small and light weight
- 50 Ohm Input/Output impedance matched
- Highly reliable and rugged design
- High efficiency, High Gain
- 52.5W typical P_{AVG}

Application

- CDMA DPD amplifier
- LTE application



Description

This HPA Module is a high gain and Amplifier module for CDMA and LTE Repeater use.

Electrical Specifications @ VDD= 31V, 50Ω System

PARAMETER	Symbol	Specification		
Frequency Range	BW	869 ~ 894MHz		
Operating Bandwidth within BW	OBW	5 ~ 25MHz		
Average Output Power	Pout	47.2dBm(52.5W) Avg. @ LTE 1FA 10MHz		
Peak Output Power	Psat	54.8dBm (Min.) @ Duty 10% Pulse		
ACLR (LTE 1FA 10MHz) @ Po=+47.2dBm Avg.	ACLR	Non-DPD	-27dBc(Min) @ ±10MHz	@-30 ~ +65°C @ 31V @ CFR 7.5dB
		With-DPD	-53dBc(Min) @ ±10MHz	
ACPR (CDMA 20FA) @ Po=+47.2dBm Avg.	ACPR	Non-DPD	-25dBc(Min) @ ±750KHz -27dBc(Min) @ ±1.98MHz	@-30 ~ +65°C @ 31V @ CFR 7.0dB
		With-DPD	-50dBc(Min) @ ±750KHz -55dBc(Min) @ ±1.98MHz	
RF Gain @ 25°C	G	57dB (Min.)		
Gain Flatness	ΔG	2.0 dB(Peak to peak) @ Operating Frequency		
Input Return Loss	S11	-12dB (Max.)		
Output Return Loss	S22	-17dB (Max.)		
Normal Operating Voltage	VDC	+5.6V & +31V		
Current Consumption	IDD	0.2A @ 5.6V (Typ.)		
		4.2A @ 31V (Typ.)		
Efficiency	Eff	40% @ 31V (Typ.)		
Feedback Output level @ 47.2dBm	FB	+5dBm ± 1.5dBm		
Temp Detector	T	0.9V @ 40°C		

Environmental Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Ambient Temperature	Ta	-30		+65	°C
Storage Temperature	Tstg	-40		+130	°C
Relative humidity w/o condensation	RH			80	%

Maximum Rating

Input Overdrive	P _{OD}	-2dBm	Max.
Load VSWR	Ψ	∞ : 1 (All Phase & Amplitude)	Nom.
Operating Case Temperature	Tc	+100	°C

Interface Connector

8-Pin-Control (MOLEX_5267_08)

Pin #	Description	Specifications
1	Vcc	+5.6V
2	Vcc	+31V
3	Vcc	+31V
4	Vcc	+31V
5	GND	GROUND
6	GND	GROUND
7	GND	GROUND
8	GND	GROUND

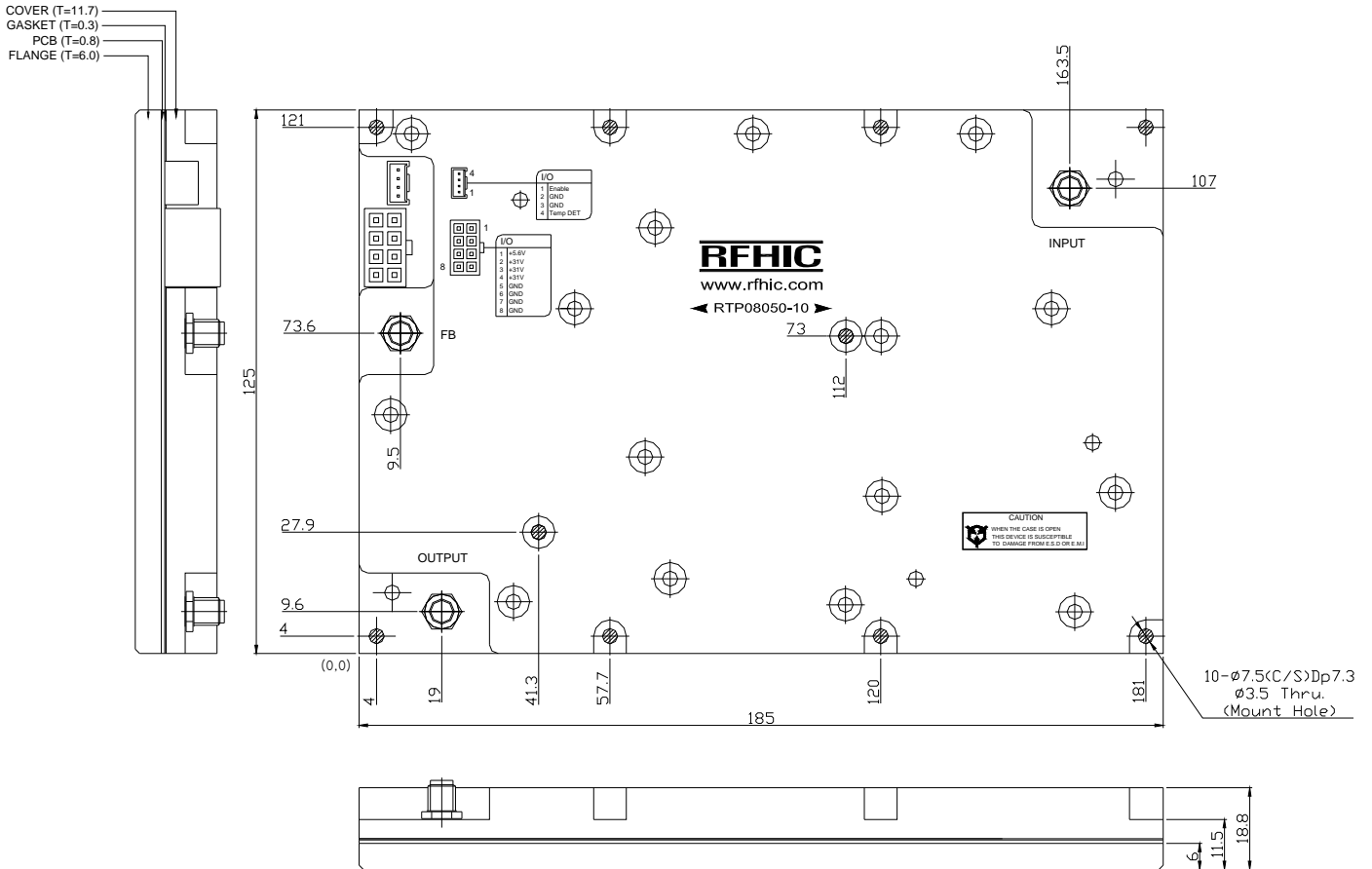
4Pin-Control (SMW200-04P, Yeonho)

Pin #	Description	Specifications
1	Enable / Disable	Amp Enable(+5.6V) / Amp Disable(+0V)
2	GND	GROUND
3	GND	GROUND
4	Temp DET	Temp Sense (0.9V @ 40°C)

Mechanical Specifications

Parameter	Value	Units	Limits
Dimensions	185 x 125 x 18.8	mm	
Weight	0.75(max)	Kg	
RF Input Connector	SMA(Female)		
RF Output Coupling Connector	SMA(Female)		
RF Output Connector	SMA(Female)		
I/O Connector	SMW200 4pin(Male)		
	Molex 8pin(Male)		
Cooling	External Heat-sink		

Outline Drawing

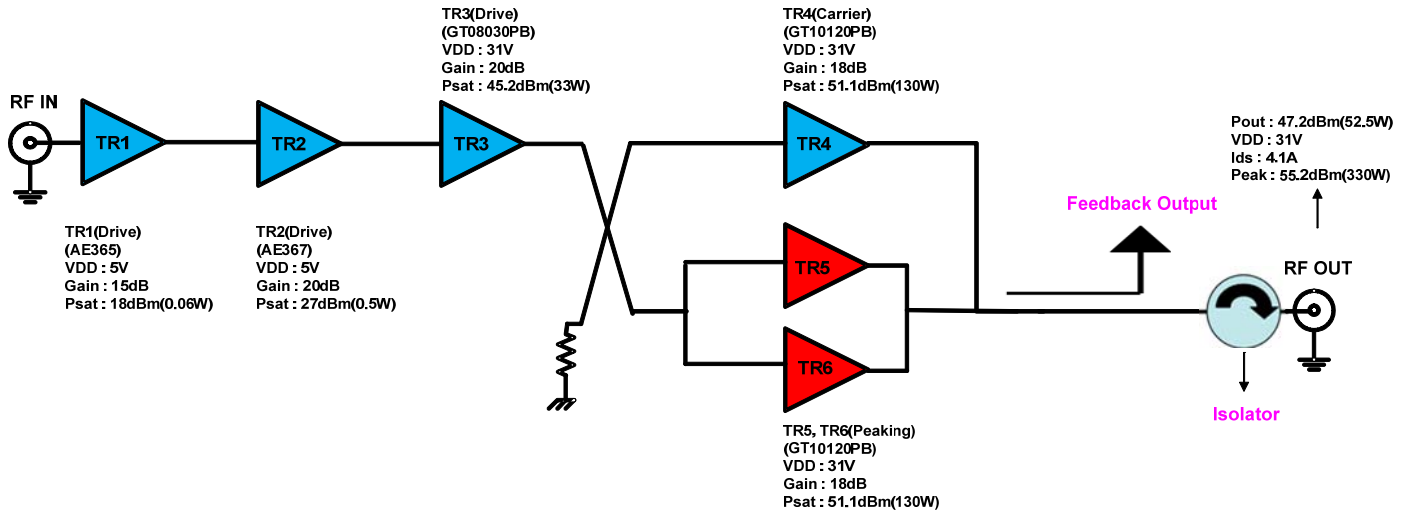


Unit : mm

***Note :**

Connector positions and module mount holes may be subjected change.

RTP08050-10 Budget



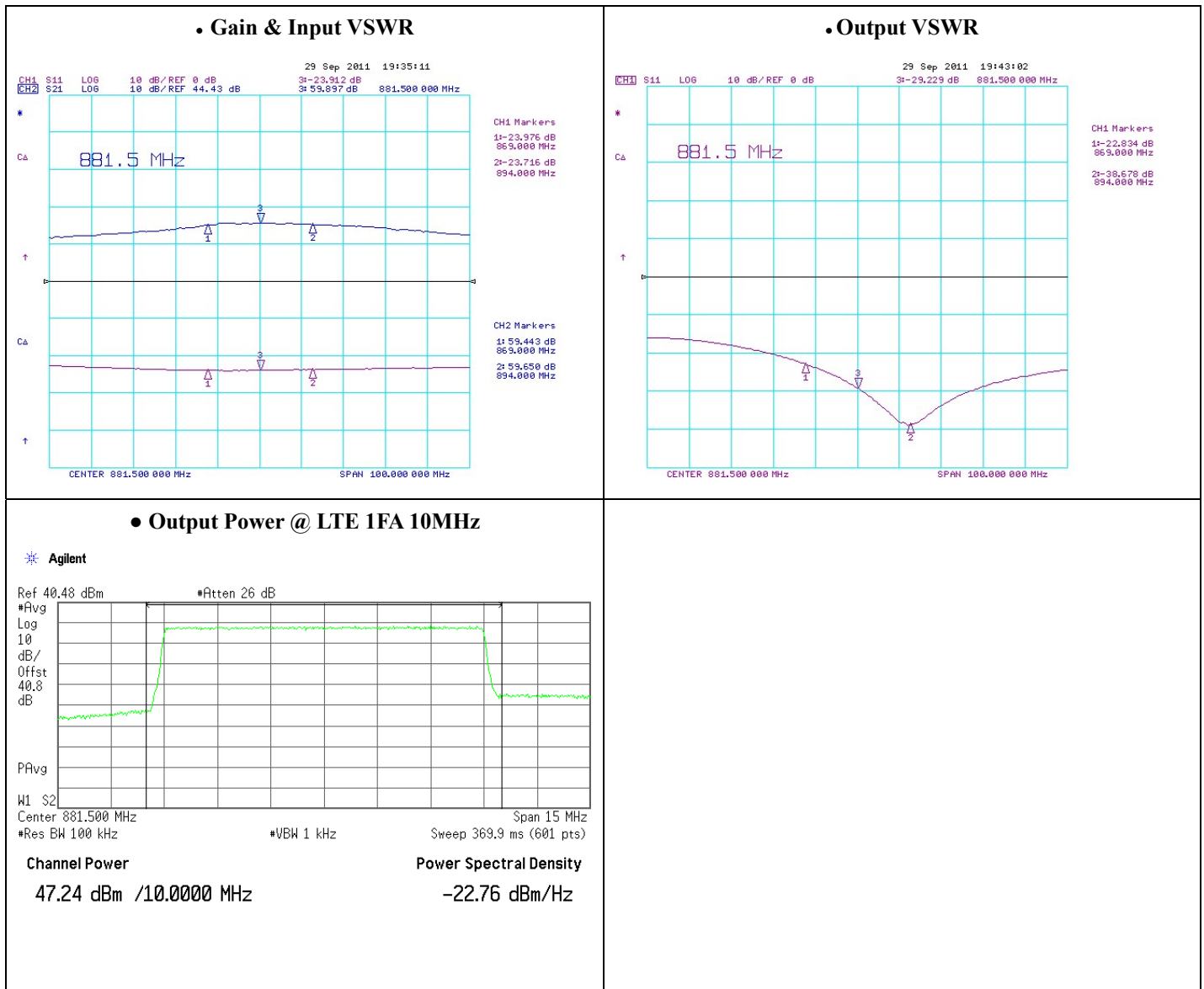
Test Data (Test Results: DPD Operation)

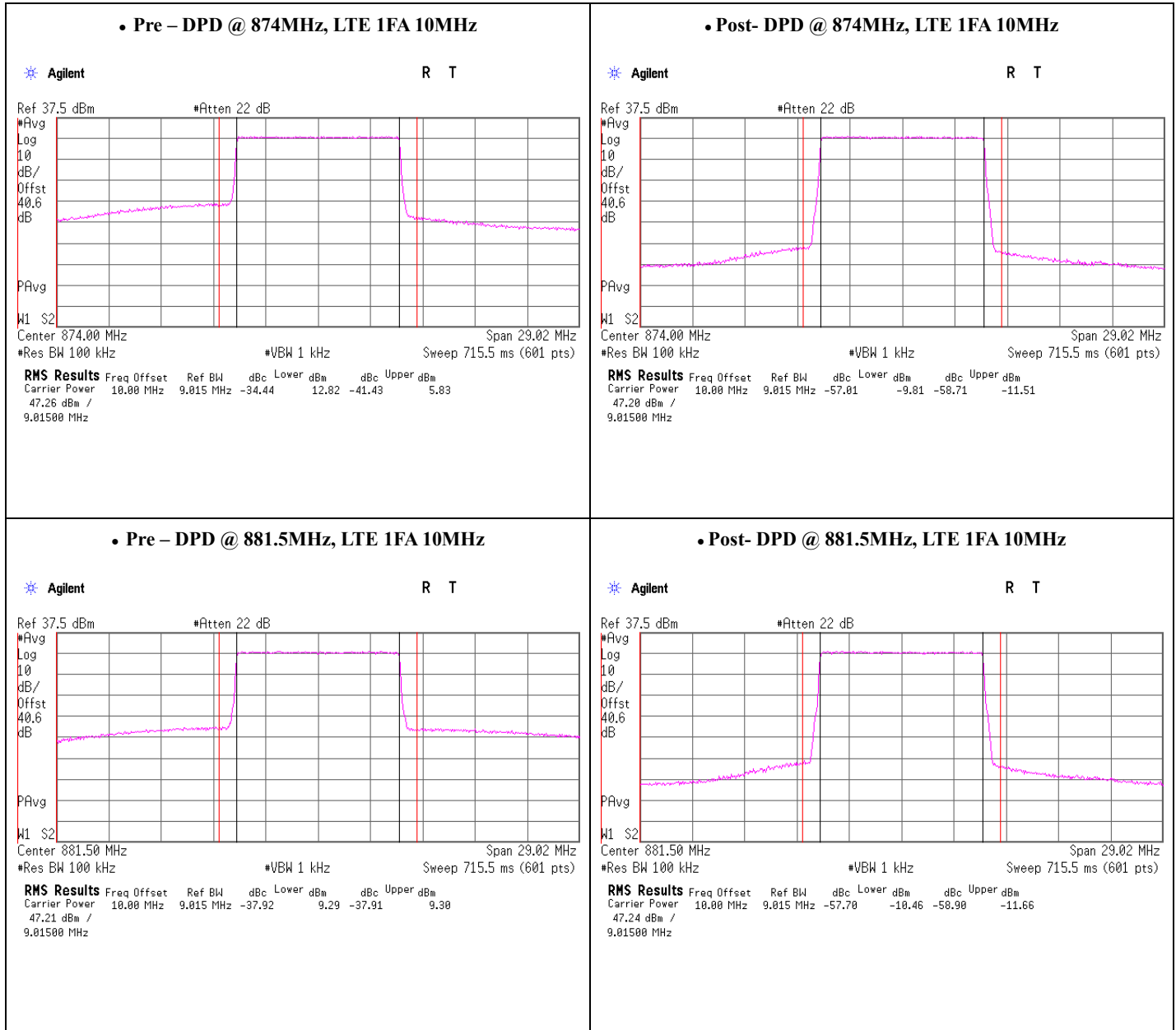
Test Equipments

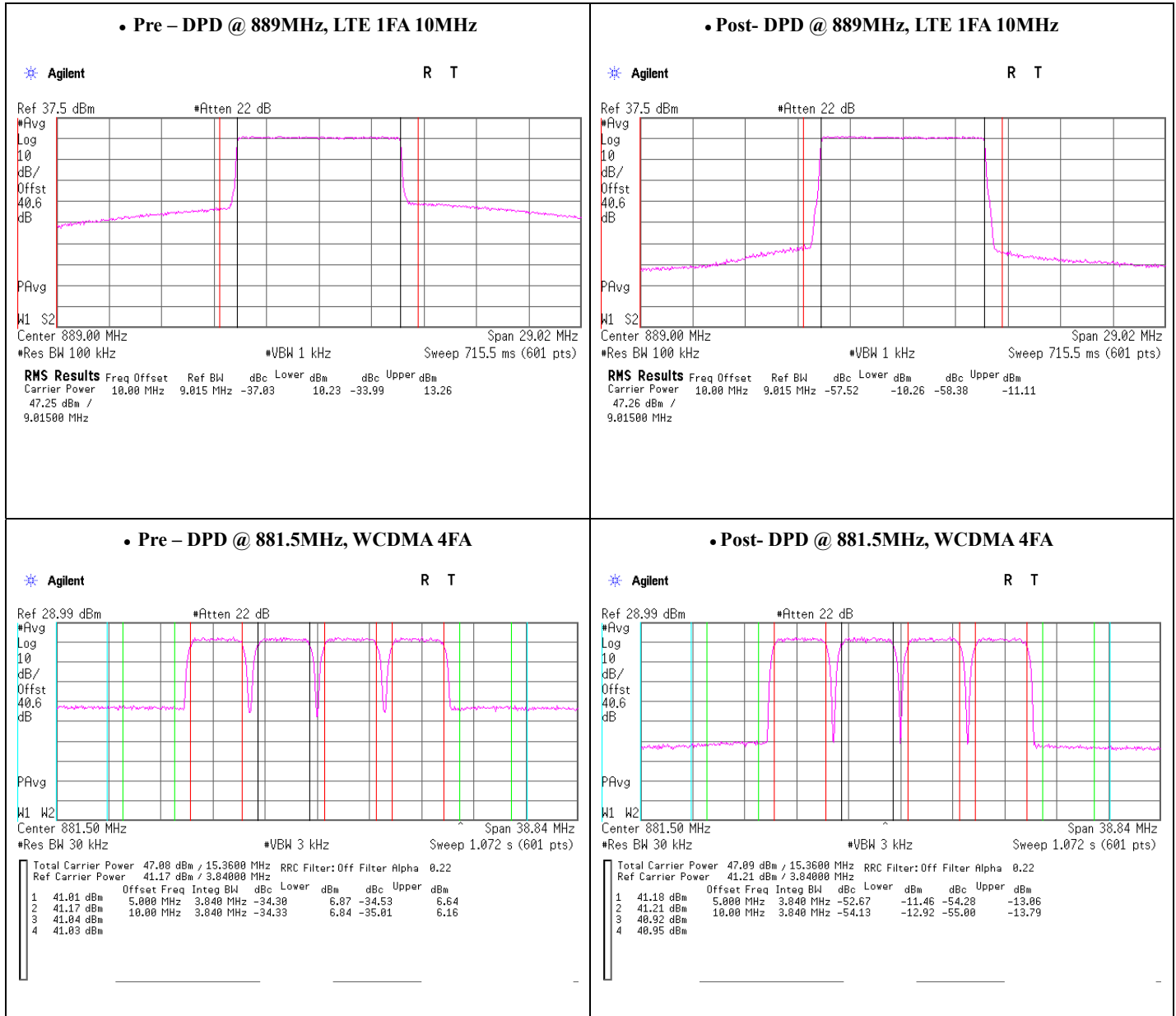
- DPD Engine : Optichron OP6180 Board
- Signal Generator : E4438C (Agilent)
- Spectrum Analyzer : E4440A (Agilent)
- Network Analyzer : 8753ES (Agilent)
- Power Supply : 6674A (Agilent)

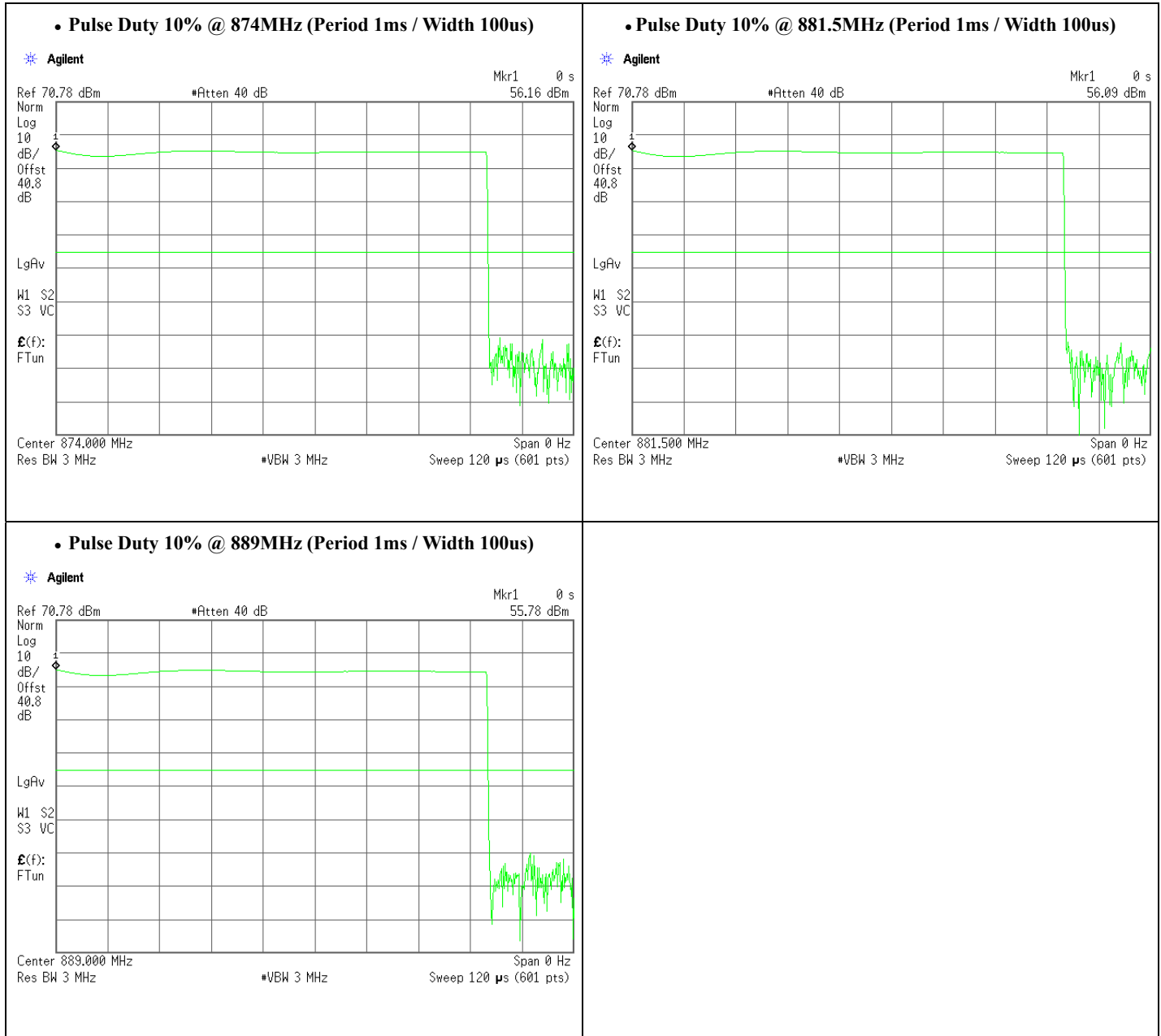
Test Condition

- Signal : LTE 1FA 10MHz(PAPR 7.5dB) & WCDMA 4FA(PAPR 7dB)
- CFR apply
- AMP Temperature: 40°C









Test Sheet

S/N			0001		
Gain			59.9dB		
Gain Flatness			0.5dB		
S11(Min)			-23.7dB		
S22(Min)			-22.0dB		
Feedback level@ 47.2dBm			5.2dBm		
Test Frequency (@Center)			874MHz	881.5 MHz	889 MHz
Psat (dBm)			56.1	56.0	55.7
LTE 1FA 10MHz @52.5W	ACLR @ ±10MHz (dBc)	Pre-DPD	-34.4	-37.9	-33.9
		Post-DPD	-57.0	-57.7	-57.5
WCDMA 4FA @52.5W	ACLR @ ±5MHz (dBc)	Pre-DPD		-34.3	
		Post-DPD		-52.6	
	ACLR @ ±10MHz (dBc)	Pre -DPD		-34.3	
		Post-DPD		-54.1	
0.2A/5.6V, Current/31V		A	4.00	4.03	3.99
Efficiency @ 31V		%	42.3	42.0	42.4

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