

## Solid State Personal Communication Power Amplifier

**7016 - PCM3Q4AFQ**
**869 – 894 MHz / 30 Watts CDMA**

The PCM3Q4AFQ (SKU 7016) is suitable for single and Multi-Channel CDMA base station and repeaters applications in the Cellular frequency range. Also suitable for GSM and TDMA applications, this amplifier utilizes linear LD MOS power devices that provide excellent linearity and low distortions, high gain, and wide dynamic range. Exceptional performance, long term reliability, and high efficiency are achieved by employing advanced matching networks and combining techniques, EMI/RFI filters, machined housing, and qualified components. Empower RF's ISO9001 Quality Assurance Program assures consistent performance and the highest reliability.



- Solid-state Pre-D linear design
- Small and lightweight
- Suitable for Multi-Carrier CDMA, GSM, and TDMA Applications
- Built-in control monitoring & protection circuits
- 50 ohm input/output impedance
- Built in Output Isolator
- High reliability and ruggedness

### ELECTRICAL SPECIFICATIONS @ +27 VDC, 25°C, 50 Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	869		894	MHz
Small Signal Gain	SSG	53	54	55	dB
Gain Flatness @ P <sub>IN</sub> = -20 dBm	ΔG			±0.75	dB
Input/Output Return Loss	S <sub>11</sub> /S <sub>22</sub>			-20	dB
Power Output CDMA per IS-95 standard	P <sub>WCDMA</sub>	30			Watt
ACPR @ P <sub>out</sub> = 46 dBm 1-Tone CDMA, 9-Channels, IS-95 BW = 1.25 MHz Settings: RBW=30 KHz, VBW=100 Hz	Δ=885KHz			-30	dBc
	Δ=1.98MHz			-45	
IMD @ P <sub>out</sub> = 45 dBm Ave. 2-Tones, 42 dBm/tone, Δ = 25 KHz – 500 KHz	IMD			-56	dBc
Harmonics @ 30 Watt 1FA, CDMA, 2 <sup>ND</sup> / 3 <sup>RD</sup>	H			-40 / -60	dBc
Spurious Signals @ 30 Watts	Spur			-36	dBm
Noise Figure @ Max Gain	NF		7	10	dB
Operating Voltage	V <sub>DD</sub>	26	27	28	Volt
Supply Current @ P <sub>out</sub> = 30 W 1F, W-CDMA	I <sub>DD</sub>		8	10.5	Amp

### MECHANICAL SPECIFICATIONS

Parameter	Value	Unit
Dimensions	6.7" x 8.1" x 1.1"	Max
Weight	3.5lb.	Max
RF Connectors Input / Output	SMA F / Type-N female	
DC and Alarms / Interface	3 Pin Dsub Hybrid Male, 9 Pin Dsub Male	
Cooling	External Heatsink + Forced air	

### ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T <sub>c</sub>	-20		+60	°C
Storage Temperature	T <sub>stg</sub>	-40		+85	°C
Relative humidity (non-condensing)	RH			95	%
Altitude (MIL-STD-810F Method 500.4)	ALT	10,000		30,000	Feet
Shock / Vibration (MIL-STD-810F Method 516.5)	SH / VI		Airborne		

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**PROTECTIONS**

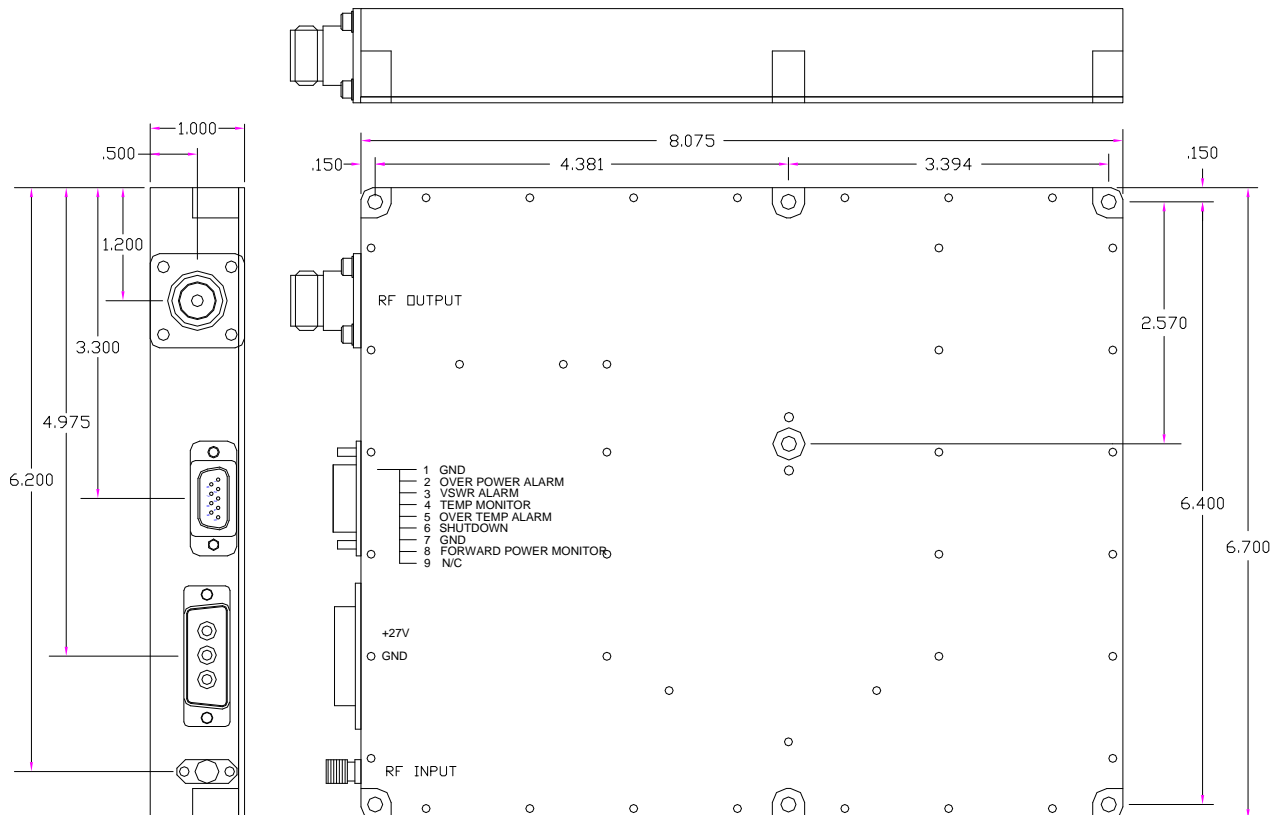
Input Overdrive	+6 dBm	Max
Load VSWR @ 50 W	$\infty$ :1 VSWR, all phases & magnitude	Nom
Thermal Overload	85°C shutdown	Max

**INTERFACE CONNECTORS**
**D-Sub, 9-Pin - Control**

Pin #	Description	Specifications
1	GND	Ground
2	Over Power Alarm	TTL "High": 46dBm $\pm$ 0.5dB
3	VSWR Alarm	TTL "High": 3:1
4	Temperature Monitor	Analog: (10mV/°C x Temp) + 500mV
5	Over Temp Alarm	TTL: 85°C shutdown, auto-restart @ 75°C
6	Shutdown	Amplifier Enable: TTL "Low" or Open Amplifier Disable: TTL "High" - Pull-up Resistor
7	GND	Ground
8	Forward Power Monitor	Analog: +4V @ 44.8dBm, 0.1V/dB
9	N/C	Reserved

**D-Sub, 3-Pin - DC**

Pin #	Description	Specifications
A1	VDD	+27 VDC
A2	GND	Ground
A3	N/C	Spare

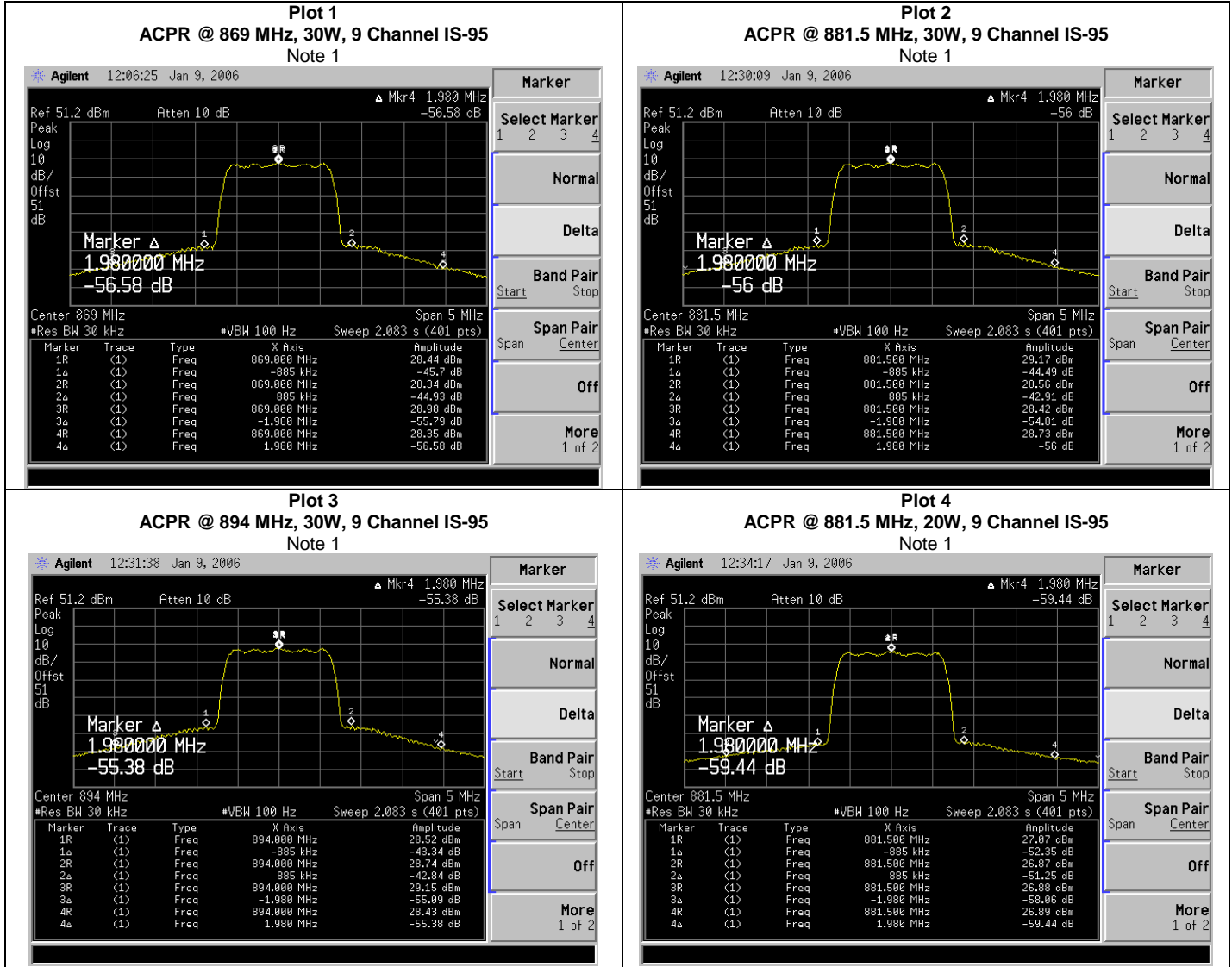
**OUTLINE DRAWING**


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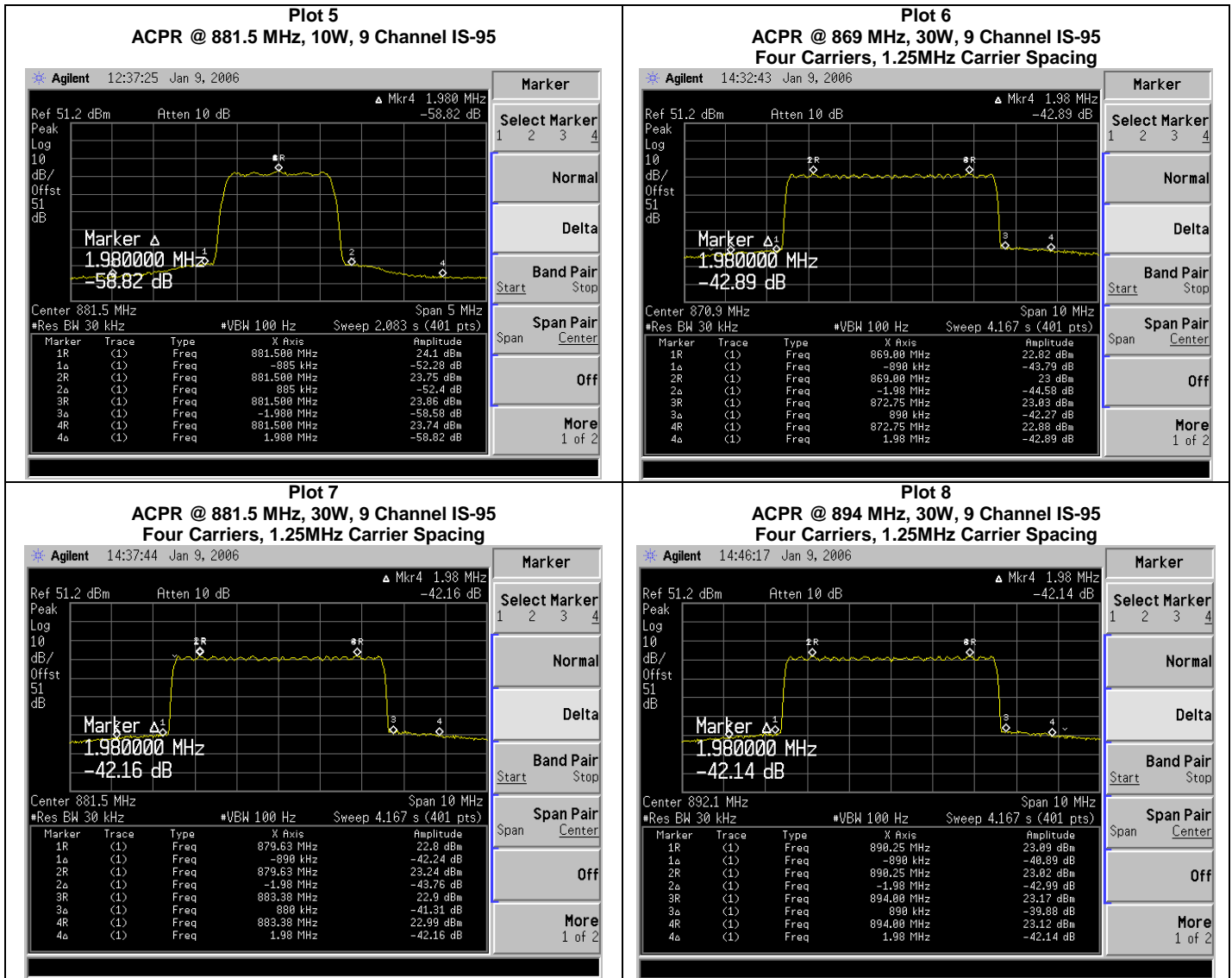
## PERFORMANCE PLOTS



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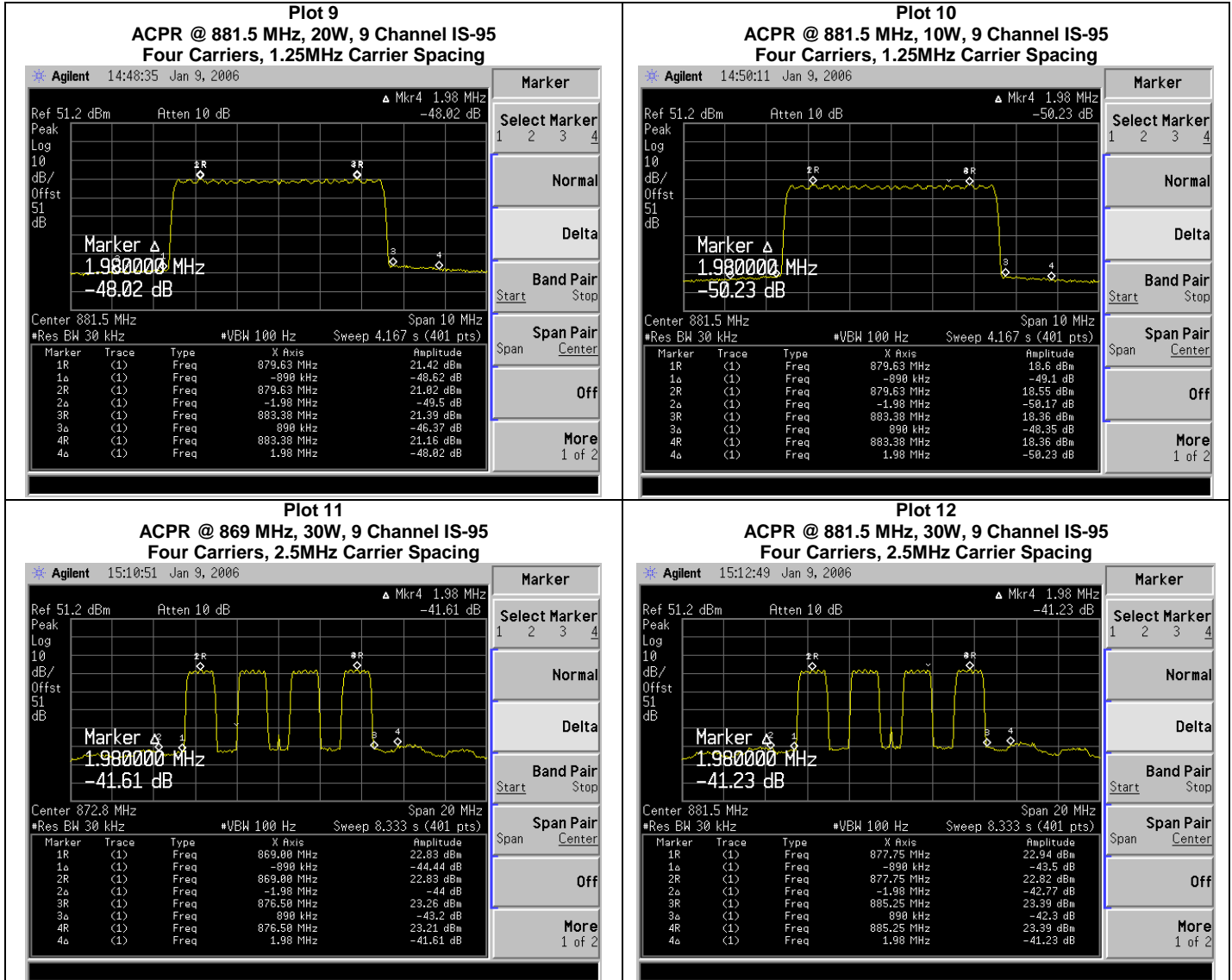
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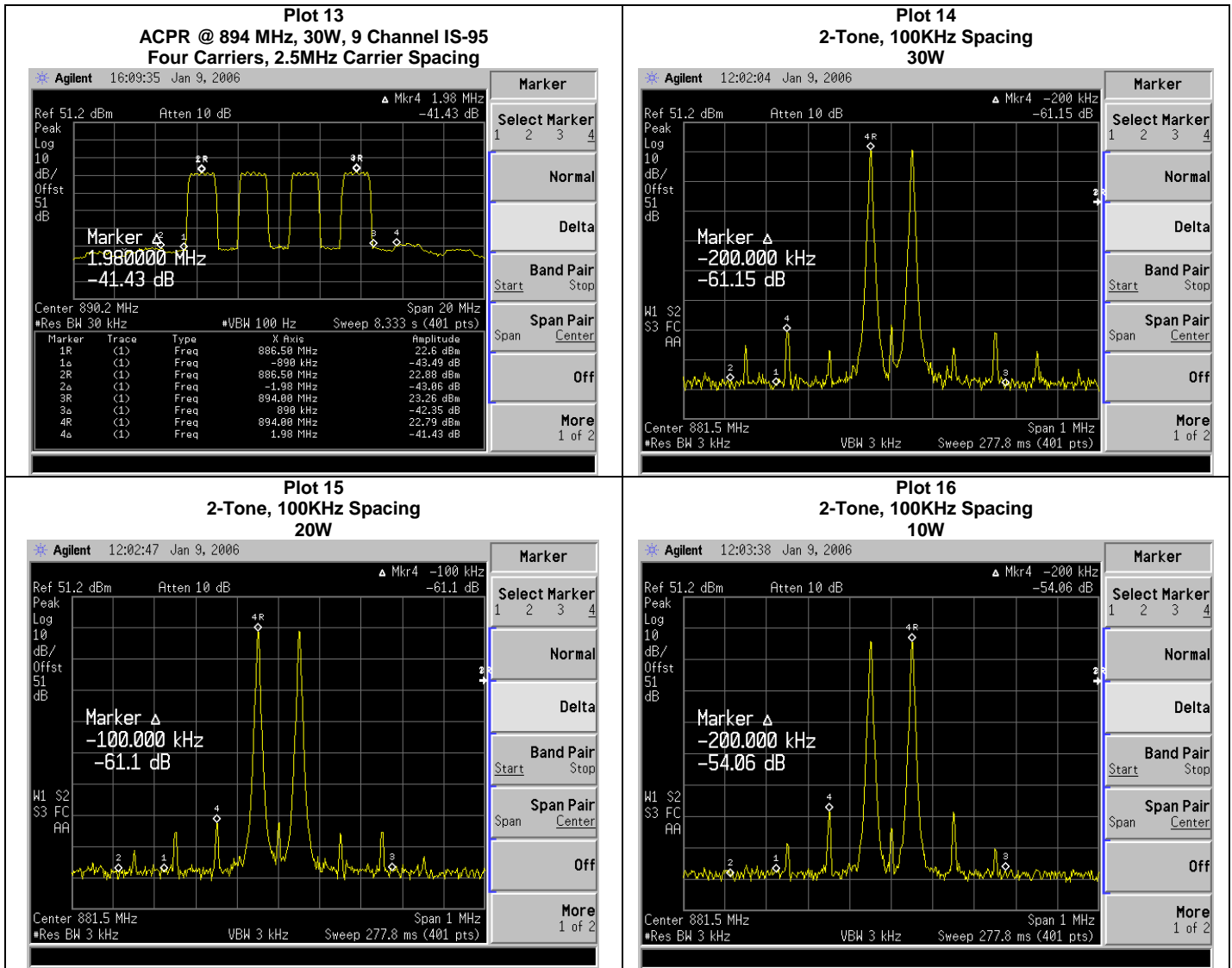
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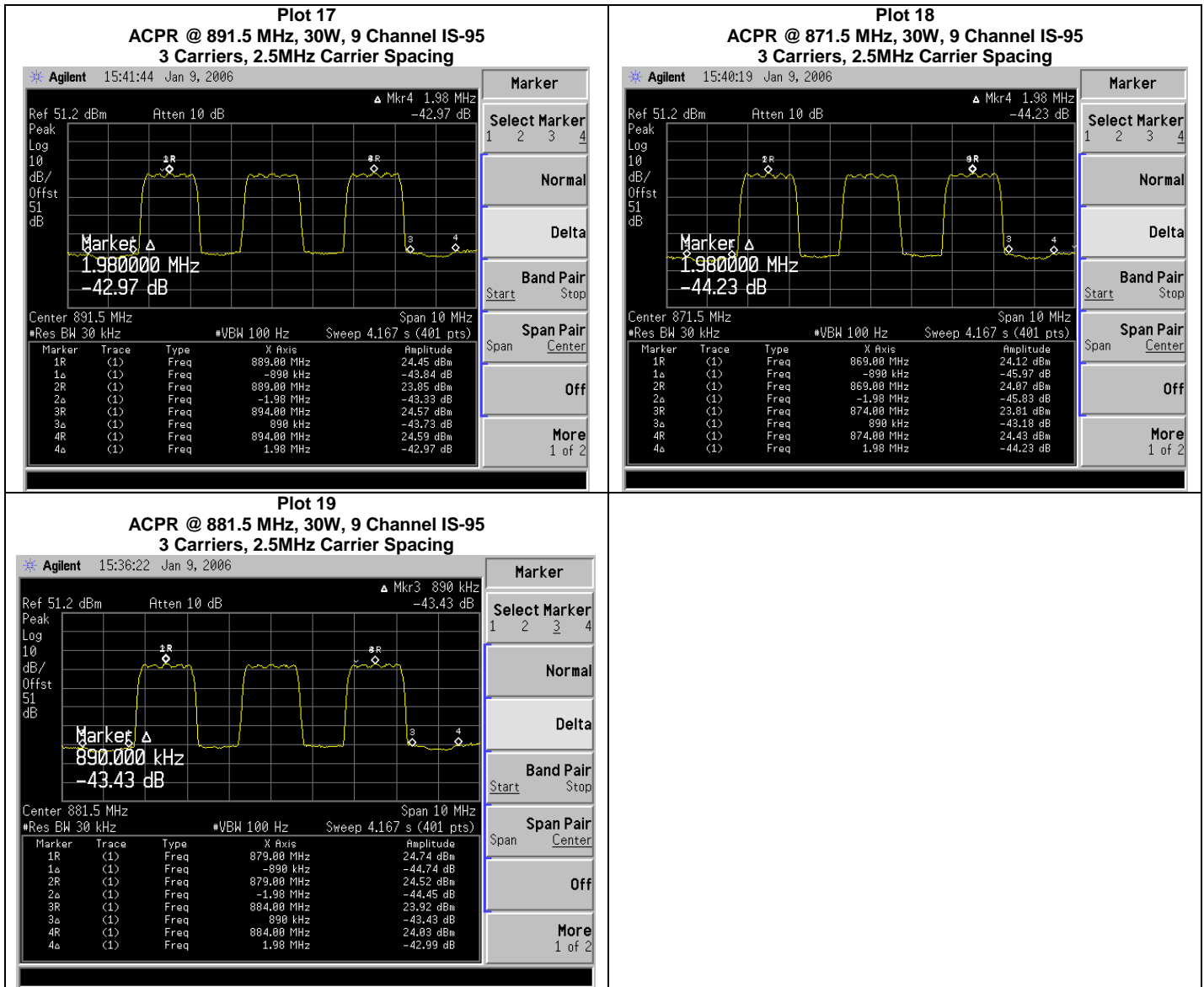
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NOTE 1: CCDF 9-CH IS-95 is 10dB, 0.001%