



## Test Data Report



**SU 175 D**

**175 W, CW  
1 GHz – 2.5 GHz**

Go green !

**PRÂNA**

Broadband power amplifiers

SN : 1606-1895

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<b>PRÂNA</b>	<b>Model Reference :</b> SU 175 D SN:1606-1895		<b>Resp. Product : Vayne F.</b>  <b>Visa :</b>	<b>Operator : Deshors S.</b>  <b>Visa :</b>
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# 1. Certificate of conformity

<b>PRÂNA</b>	<b>Model Reference :</b> SU 175 D SN:1606-1895		<b>Resp. Product :</b> Vayne F.  <b>Visa :</b>	<b>Operator :</b> Deshors S.  <b>Visa :</b>
	<b>Date of measurement:</b> 25/JUN/16	<b>Temperature:</b> 25°C		
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## 2. Certificate CE

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### 3. Technical specifications

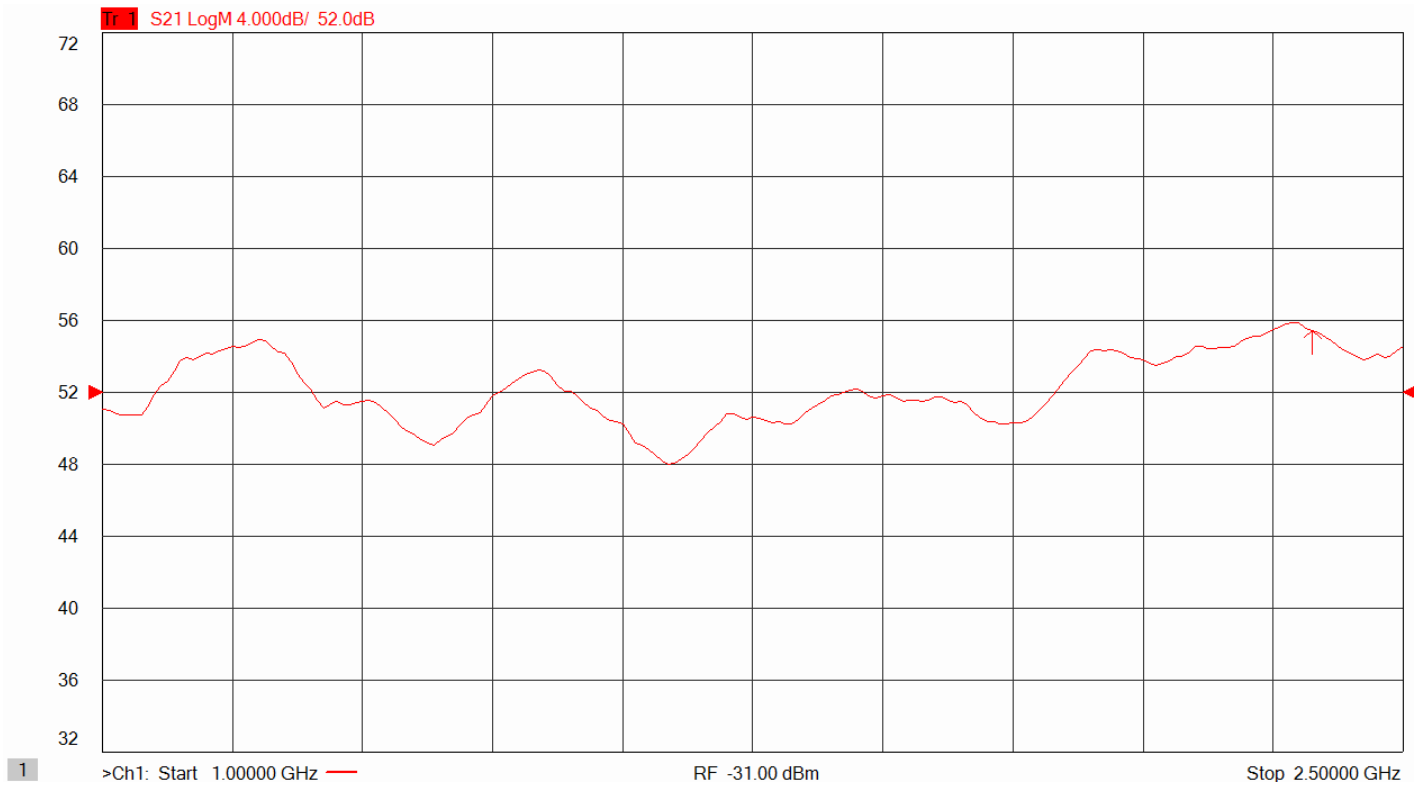
Specifications	
Frequency bandwidth	1 GHz - 2.5 GHz
Typical output power	175 W
Power at 3 dB compression	175 W min. up to 1.6 GHz / 155 W min. from 1.6 GHz to 2.5 GHz *
Power at 1 dB compression	140 W min. up to 1.6 GHz / 120 W min. from 1.6 GHz to 2.5 GHz *
Harmonics distortion	H2,H3 < -20 dBc for the output power at 1 dB compression limit
Class type	Class A
Gain	52 dB
Linear power gain flatness	± 4 dB max
Mismatch tolerance	infinite without damage
Input impedance	50 ohms / VSWR: 2:1max
Output impedance	50 ohms / VSWR: 2:1max
Input power	+10 dBm max.
RF input connector	Type N fem. (front or rear panel) – other connector type on request
RF output connector	Type N fem. (front or rear panel) – other connector type on request
Safety interlock	Connector type BNC
Digital control	Transistors, power supplies and internal temperature
Communication interface	IEEE 488
4 lines digital display	Status, faults, (direct and reverse instantaneous power for DC version)
Ambient operating temperature	0 °C / + 35 °C
Room temperature storage	-20 °C / +70 °C
Cooling	Forced air: 120 l/sec max. (self contained fans)
Power voltage	200-250 VAC, 47-63 Hz, single phase
Rated current	4.8 A at 230 VAC
Dimensions	640 x 450 x 312 mm (7U) / 25.2 x 17.7 x 12.3 in (7U)
Weight	33 kg / 73 lb

#### SU 175 DC version :

Integrated bidirectional power coupler	Coupling factor 49 dB typ.
Power coupling connector	Type N fem (front or rear panel)
Estimated output power losses due to the coupler	0.3 dB* => take account these power losses for the min output power

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#### 4. Small signal gain reference curve :



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## 5. Linear output power at 1 dB compression max. : measurements

Frequency	Input power	Output power	Output power	Compression
MHz	dBm	dBm	Watt	dB
1000	3.30	52.66	185	1
1020	3.74	52.65	184	1
1040	3.20	52.39	173	1
1060	2.66	52.81	191	1
1080	1.55	52.57	181	1
1100	0.28	52.60	182	1
1120	0.19	52.83	192	1
1140	0.84	53.11	205	1
1160	0.20	53.02	201	1
1180	-0.12	53.00	200	1
1200	0.36	52.75	189	1
1220	0.68	52.19	165	1
1240	2.32	52.97	198	1
1260	3.65	52.79	190	1
1280	3.65	52.99	199	1
1300	3.13	53.00	200	1
1320	3.83	52.94	197	1
1340	4.64	52.89	194	1
1360	4.89	52.77	189	1
1380	5.82	53.01	200	1
1400	5.45	52.76	189	1
1420	4.15	52.92	196	1
1440	3.74	52.91	195	1
1460	2.66	52.66	184	1
1480	1.38	52.15	164	1
1500	1.30	52.49	177	1
1520	2.32	52.80	191	1
1540	2.83	52.71	187	1
1560	3.83	53.05	202	1
1580	4.64	52.99	199	1
1600	5.08	53.19	209	1
1620	6.05	53.07	203	1
1640	6.43	52.67	185	1
1660	6.62	52.46	176	1
1680	6.05	52.86	193	1
1700	5.29	53.02	200	1
1720	4.15	52.78	190	1
1740	4.46	52.97	198	1
1760	4.46	52.78	190	1
1780	4.82	52.97	198	1
1800	4.64	52.89	195	1
1820	3.74	52.87	194	1
1840	3.02	52.76	189	1
1860	2.60	52.69	186	1
1880	2.95	52.63	183	1
1900	2.95	52.53	179	1
1920	2.95	52.44	176	1
1940	3.13	52.49	177	1
1960	3.13	52.50	178	1

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1980	3.30	52.57	181	1
2000	3.65	52.64	184	1
2020	4.46	52.48	177	1
2040	4.64	52.65	184	1
2060	4.46	52.64	184	1
2080	3.92	52.63	183	1
2100	2.48	52.44	176	1
2120	1.20	52.30	170	1
2140	0.62	52.52	179	1
2160	0.19	52.42	175	1
2180	0.68	52.63	183	1
2200	1.34	52.65	184	1
2220	1.51	52.69	186	1
2240	0.85	52.83	192	1
2260	0.68	52.61	183	1
2280	0.85	52.87	194	1
2300	0.52	52.83	192	1
2320	0.20	52.95	197	1
2340	0.20	52.79	190	1
2360	-0.76	52.76	189	1
2380	-0.47	52.90	195	1
2400	0.20	52.83	192	1
2420	0.20	52.69	186	1
2440	0.68	52.35	172	1
2460	1.18	52.52	179	1
2480	1.01	52.39	173	1
2500	0.19	52.45	176	1

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## 6. Saturated output power at 3 dB compression max. : measurements

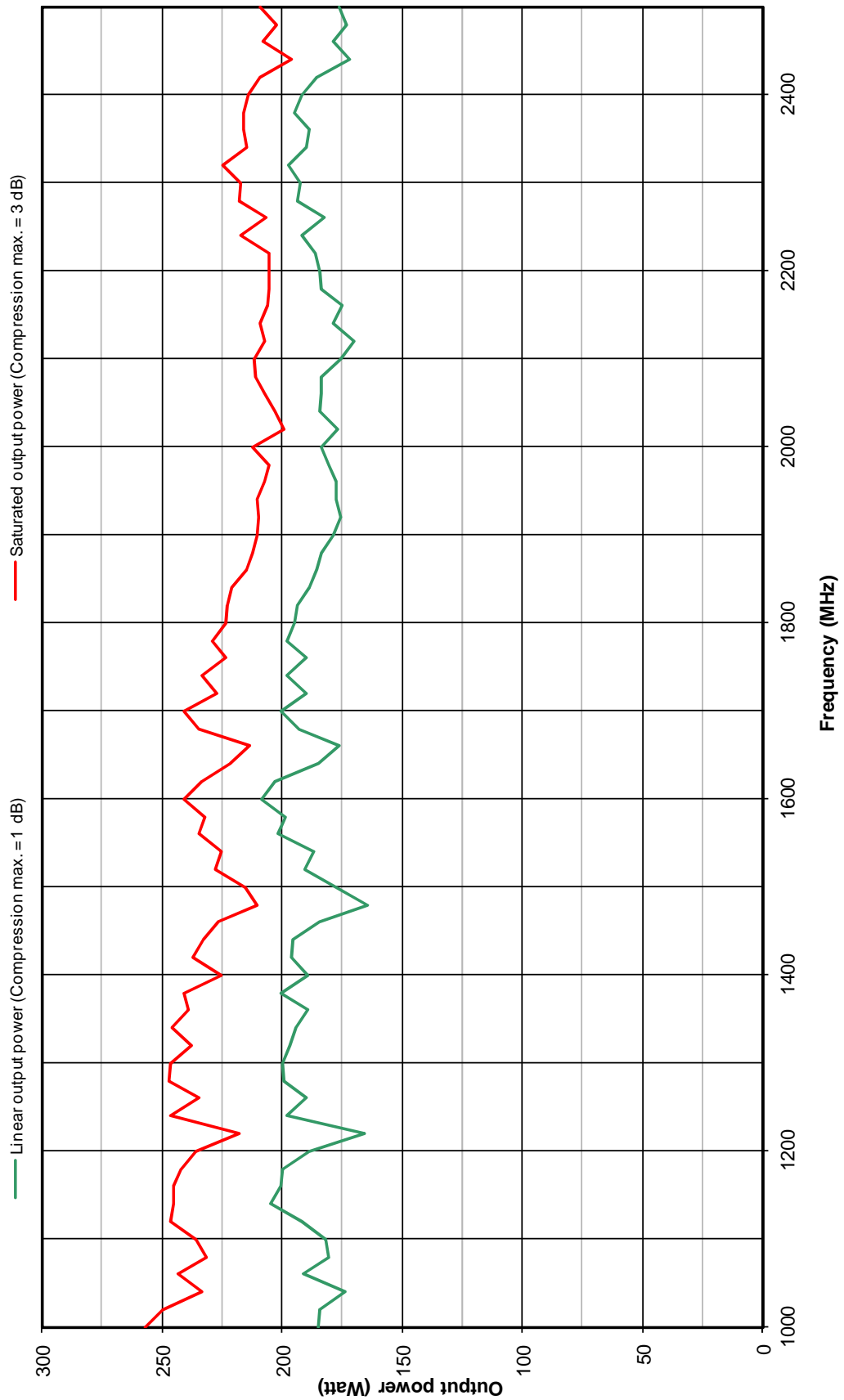
Frequency	Input power	Output power	Output power	Compression
MHz	dBm	dBm	Watt	dB
1000	7.03	54.10	257	3
1020	7.22	53.97	250	3
1040	6.64	53.67	233	3
1060	5.86	53.86	243	3
1080	4.88	53.65	232	3
1100	3.60	53.73	236	3
1120	3.60	53.92	246	3
1140	3.78	53.89	245	3
1160	3.23	53.89	245	3
1180	2.86	53.83	242	3
1200	3.48	53.72	236	3
1220	4.10	53.38	218	3
1240	5.45	53.92	247	3
1260	6.64	53.71	235	3
1280	6.64	53.92	247	3
1300	6.05	53.92	247	3
1320	6.64	53.76	238	3
1340	8.00	53.91	246	3
1360	8.20	53.78	239	3
1380	8.77	53.82	241	3
1400	8.36	53.53	225	3
1420	7.13	53.75	237	3
1440	6.52	53.67	233	3
1460	5.66	53.55	226	3
1480	4.69	53.23	210	3
1500	4.34	53.33	215	3
1520	5.26	53.58	228	3
1540	5.86	53.53	225	3
1560	6.62	53.71	235	3
1580	7.61	53.66	232	3
1600	8.00	53.81	240	3
1620	8.98	53.68	233	3
1640	9.39	53.46	222	3
1660	9.59	53.30	214	3
1680	9.18	53.70	234	3
1700	8.36	53.81	241	3
1720	7.13	53.56	227	3
1740	7.34	53.68	233	3
1760	7.13	53.49	224	3
1780	7.54	53.60	229	3
1800	7.34	53.49	223	3
1820	6.52	53.48	223	3
1840	6.05	53.45	221	3
1860	5.47	53.32	215	3
1880	5.66	53.26	212	3
1900	5.86	53.23	210	3
1920	5.86	53.22	210	3
1940	5.86	53.23	210	3
1960	5.86	53.16	207	3

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1980	5.86	53.13	205	3
2000	6.44	53.26	212	3
2020	7.03	52.99	199	3
2040	7.03	53.07	203	3
2060	7.22	53.17	207	3
2080	6.64	53.25	211	3
2100	5.47	53.25	212	3
2120	4.30	53.17	208	3
2140	3.41	53.20	209	3
2160	3.04	53.14	206	3
2180	3.23	53.12	205	3
2200	3.97	53.13	205	3
2220	3.97	53.13	206	3
2240	3.60	53.37	217	3
2260	3.23	53.15	206	3
2280	3.41	53.38	218	3
2300	3.23	53.37	217	3
2320	2.86	53.51	224	3
2340	2.78	53.32	215	3
2360	1.90	53.34	216	3
2380	1.90	53.34	216	3
2400	2.78	53.30	214	3
2420	2.78	53.21	209	3
2440	3.30	52.92	196	3
2460	3.92	53.17	208	3
2480	3.74	53.06	203	3
2500	3.02	53.21	209	3

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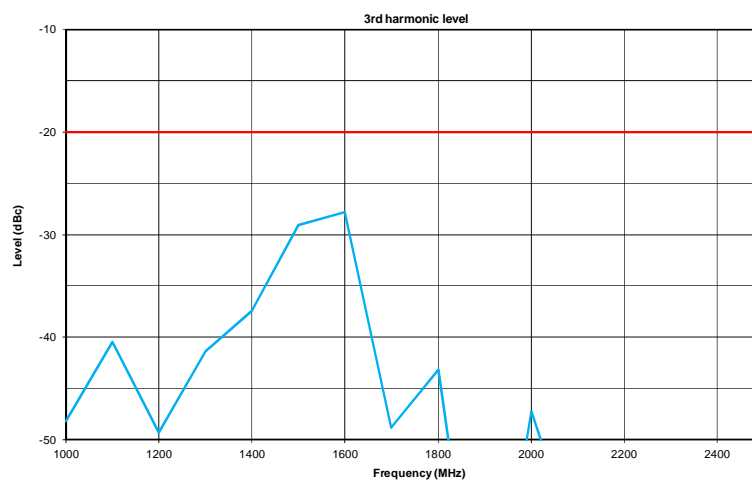
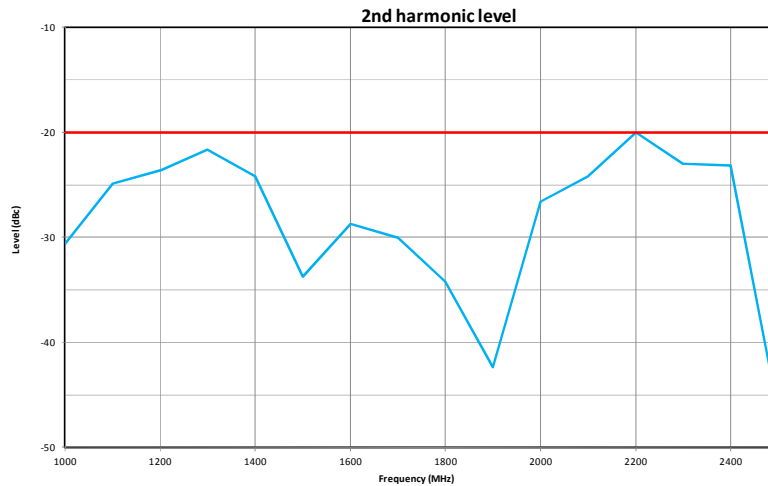
**7. Output power – Curves at 1 and 3 dB compression**



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## 8. Harmonic distortion at 1 dB compression or nominal power

Frequency MHz	Harmonic Level		Compression dB	Output Power Watt
	H2 dBc	H3 dBc		
1000	-31	-48	1	185
1100	-25	-40	1	182
1200	-24	-49	1	189
1300	-22	-41	1	200
1400	-24	-37	1	189
1500	-34	-29	1	177
1600	-29	-28	1	209
1700	-30	-49	1	200
1800	-34	-43	1	195
1900	-42	<-50	1	179
2000	-27	-47	1	184
2100	-24	<-50	1	176
2200	-20	<-50	0.9	172
2300	-23	<-50	1	192
2400	-23	<-50	1	192
2500	-47	<-50	1	176



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## 9. Lists of measuring instruments

Type	Model	Serial number	Last Calibration	Contract <sup>1</sup>
Power meter	Rohde & Schwarz NRP-Z91 1168.8004.02 9kHz-6GHz	101012	03/AUG/15	Rohde & Schwarz n° 1100-104227
Network analyser	Keysight ENA 5071C 9kHz-6.5GHz	MY46110058	03/AUG/15	Keysight n° 1-7095622787-1
Network analyser	Keysight ENA E5080A 9kHz-6.5GHz	MY55100382	03/AUG/15	Keysight n° 1-4155187-4968297-1
Power meter	Rohde & Schwarz NRVS 1020.1809K02	10486	04/AUG/15	Rohde & Schwarz n° 1100-104225
Power sensor	Rohde & Schwarz NRV-Z51 857.9004.02 DC-18GHz	833490/0005	03/AUG/15	Rohde & Schwarz n° 1100-104226
Power meter	Rohde & Schwarz NRP-Z91 1168.8004.02 9kHz-6GHz	102568	19/FEB/16	Rohde & Schwarz n° 10-300379402
Spectrum analyser	Keysight N9000A 9kHz-26.5GHz/CXA	MY53030118	31/JUL/15	Keysight n° 1-7095622883-1
Network analyser	Keysight ENA 5071C 9kHz-6.5GHz	MY46520441	03/AUG/15	Keysight n° 1-7095622842-1
Power meter	Rohde & Schwarz NRP-Z91 1168.8004.02 9kHz-6GHz	100063	03/AUG/15	Rohde & Schwarz n° 1100-104230

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