

MD1205

Multilayer Chip Antenna for Extra Wide Band (Preliminary Information)

MD1205 Multilayer Chip Antenna

◆ Features

- Size : 12.0mm(L)X5.05mm(W)X1.63mm(H)
- Light weight and low profile
- Omni-directional in azimuth
- Lead (Pb) Free

◆ Applications

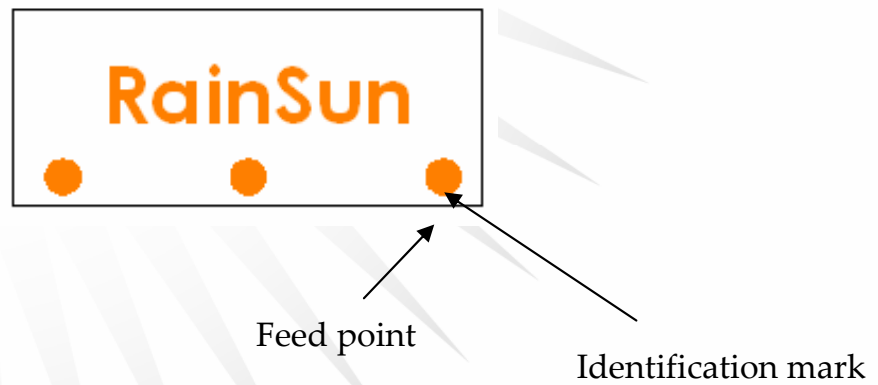
- Broad Band wireless communications
- GSM/DCS of 890-960, 1710-1880 MHz
- CDMA/PCS of 825-894, 1820-1990 MHz

Specifications

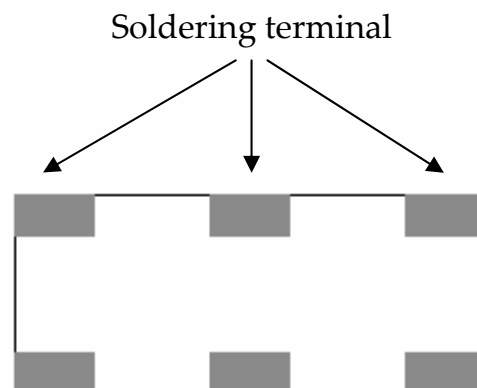
Frequency range	820~1950MHz
Peak gain	-0.3 dBi
Operation temperature	-40 ~ +85 °C
Storage temperature	-40 ~ +100 °C
VSWR	2.5 (Max)
Input Impedance	50 Ohm
Power handling	5W (Max)
Bandwidth	1130MHz (typ)
Azimuth beam width	Omni-directional
Polarization	Linear
Soldering pad	Natural tin

Pin configuration

Top view

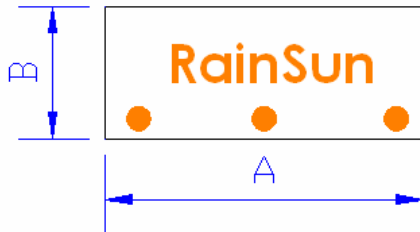


Bottom view

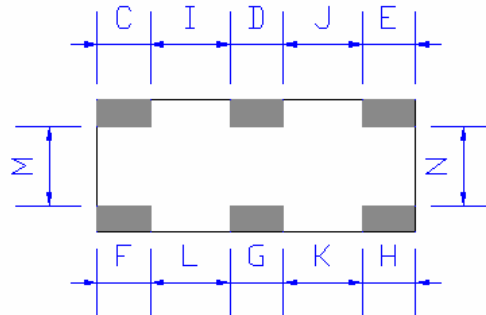


Dimensions

Top view

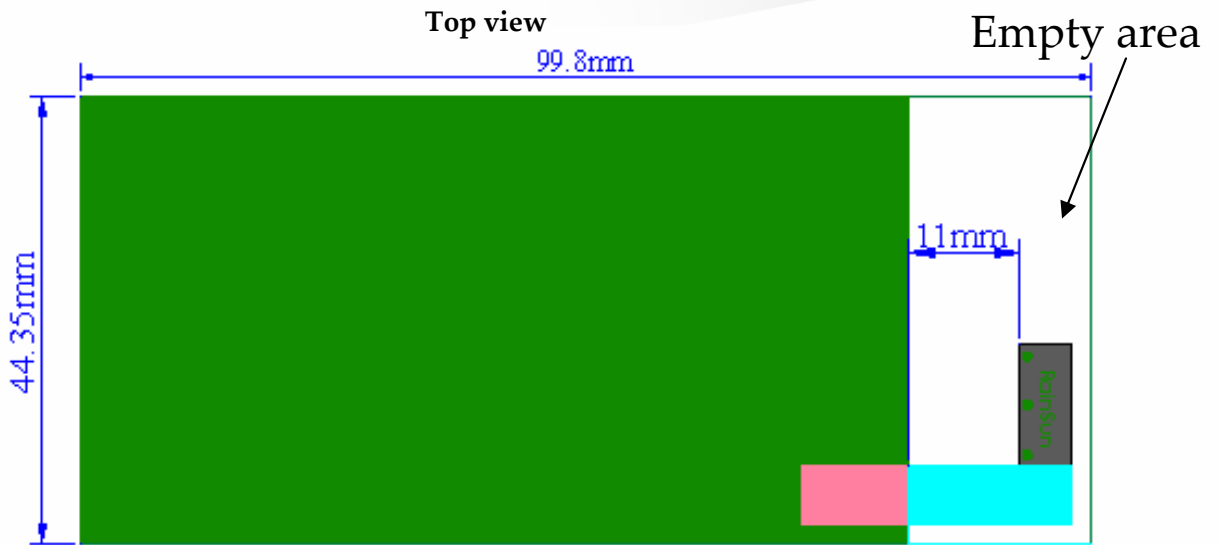


Bottom view



Symbol	Dimensions (mm)
A	12.0 ± 0.1
B	5.0 ± 0.1
C	2.0 ± 0.1
D	2.0 ± 0.1
E	2.0 ± 0.1
F	2.0 ± 0.1
G	2.0 ± 0.1
H	2.0 ± 0.1
I	3.0 ± 0.1
J	3.0 ± 0.1
K	3.0 ± 0.1
L	3.0 ± 0.1
M	3.0 ± 0.1
N	3.0 ± 0.1

Recommended Test Board Pattern



- GND plane
- Matching circuit
- 50 Ohm feeding line

Unit : mm

Board thickness : 0.8mm
Board material : FR4

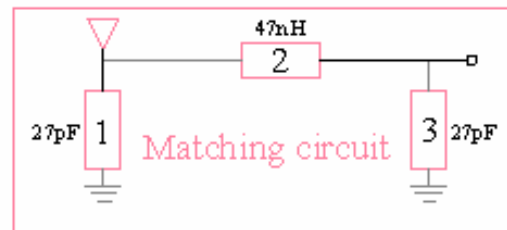
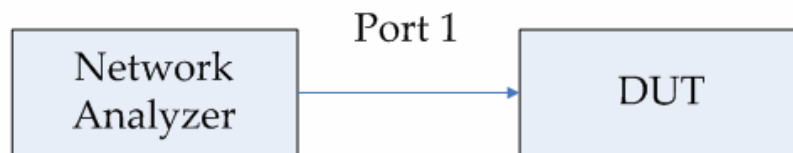


Fig-1

Testing Setup



Measurement



Testing Instrument:

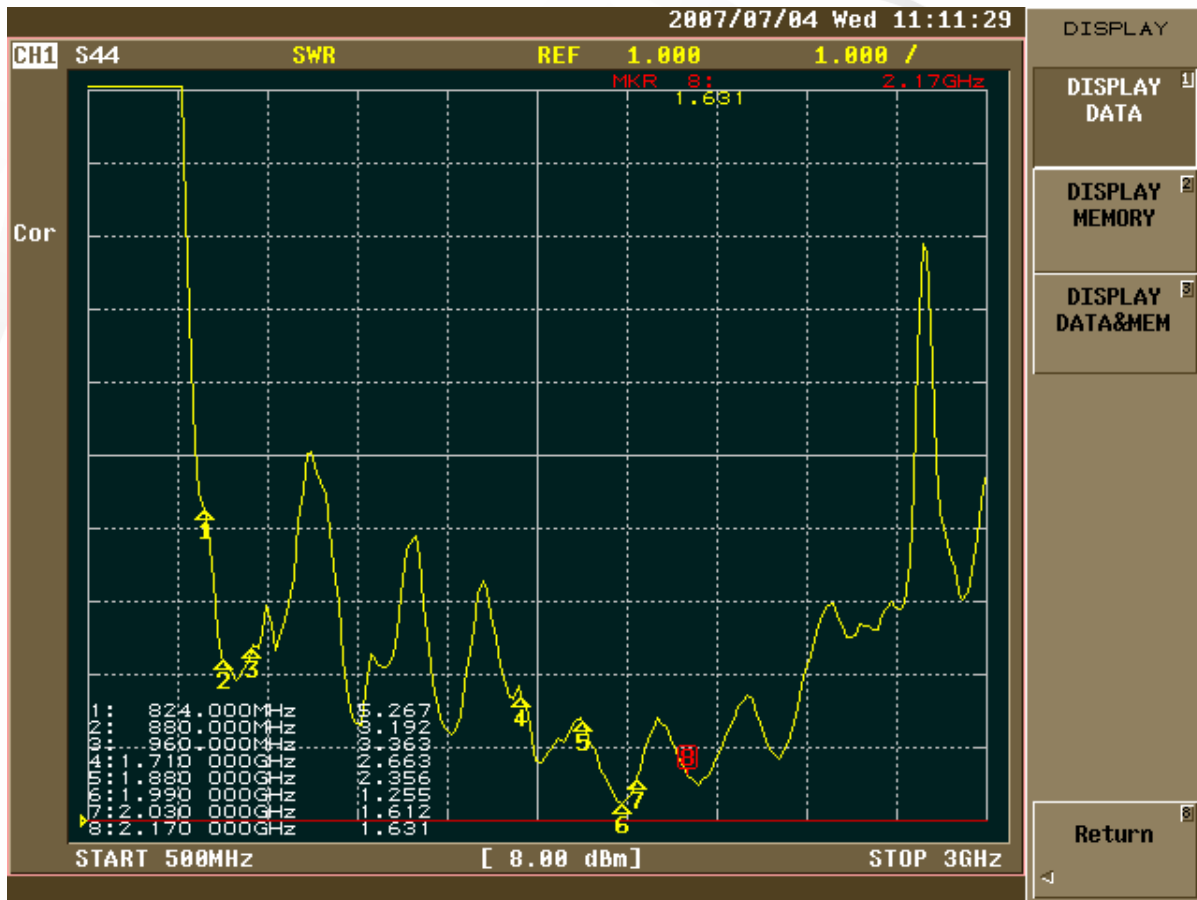
Anritsu 37369C VNA(Vector Network Analyzer)

VNA calibrate with 1 path reflection only calibration sequence on test board feed point.

The test board dimension and it's layout is the same as Fig-1.

Typical Electrical Characteristics

Return loss



Note	景文公板 灰色chip									
Ant. Port Input Pwr. (dBm)	0	0	0	0	0	0	0	0	0	0
Tot. Rad. Pwr. (dBm)	-7.0321	-4.29924	-3.83426	-1.60328	-1.45027	-2.57683	-2.39381	-2.53055	-2.49601	-1.53514
Peak EIRP (dBm)	-3.06148	-0.0245331	0.00309981	2.92397	2.85647	2.12896	2.41661	1.76356	1.43938	2.42909
Directivity (dBi)	3.97062	4.27471	3.83736	4.52725	4.30674	4.7058	4.81043	4.29411	3.93539	3.96423
Efficiency (dB)	-7.0321	-4.29924	-3.83426	-1.60328	-1.45027	-2.57683	-2.39381	-2.53055	-2.49601	-1.53514
Efficiency (%)	19.8057	37.16	41.3593	69.1308	71.6099	55.248	57.626	55.8399	56.2858	70.2241
Gain (dBi)	-3.06148	-0.0245331	0.00309981	2.92397	2.85647	2.12896	2.41661	1.76356	1.43938	2.42909
NHPRP ±Pi/4 (dBm)	-7.86711	-5.28629	-4.78424	-2.86357	-2.62035	-3.72682	-3.55314	-3.7905	-3.82176	-2.88524
NHPRP ±Pi/6 (dBm)	-9.11214	-6.66142	-6.35612	-4.18377	-3.79303	-4.72782	-4.55903	-5.02014	-5.13421	-4.514
NHPRP ±Pi/8 (dBm)	-10.4382	-7.95426	-7.71669	-5.351	-4.84787	-5.60717	-5.43108	-6.01288	-6.18505	-5.75858
Upper Hem. PRP (dBm)	-10.5844	-7.90292	-7.25394	-6.7442	-6.92406	-7.6155	-7.28845	-6.99946	-6.87461	-6.0621
Lower Hem. PRP (dBm)	-9.56059	-6.78758	-6.47047	-3.19051	-2.89838	-4.20995	-4.0943	-4.45089	-4.4674	-3.42353
NHPRP4 / TRP Ratio (dB)	-0.835002	-0.987045	-0.949971	-1.26028	-1.17008	-1.14999	-1.15933	-1.25994	-1.32574	-1.3501
NHPRP4 / TRP Ratio (%)	82.5087	79.6701	80.3532	74.8121	76.3822	76.7364	76.5715	74.8179	73.6929	73.2808
NHPRP6 / TRP Ratio (dB)	-2.08003	-2.36217	-2.52185	-2.58048	-2.34276	-2.15099	-2.16522	-2.48959	-2.6382	-2.97886
NHPRP6 / TRP Ratio (%)	61.9437	58.0474	55.9519	55.2016	58.3074	60.9398	60.7405	56.3691	54.4729	50.3632
NHPRP8 / TRP Ratio (dB)	-3.4061	-3.65501	-3.88243	-3.74772	-3.3976	-3.03033	-3.03726	-3.48232	-3.68903	-4.22344
NHPRP8 / TRP Ratio (%)	45.6447	43.1021	40.9032	42.1918	45.7341	49.7699	49.6905	44.8505	42.7658	37.8143
UHPRP / TRP Ratio (dB)	-3.55231	-3.60368	-3.41968	-5.14092	-5.47379	-5.03866	-4.89464	-4.46891	-4.37859	-4.52696
UHPRP / TRP Ratio (%)	44.1335	43.6146	45.5022	30.6132	28.3545	31.3425	32.3993	35.7363	36.4872	35.2617
LHPRP / TRP Ratio (dB)	-2.52849	-2.48834	-2.63621	-1.58723	-1.44811	-1.63312	-1.70049	-1.92034	-1.97139	-1.88839
LHPRP / TRP Ratio (%)	55.8665	56.3854	54.4978	69.3868	71.6455	68.6575	67.6007	64.2637	63.5128	64.7383
Front/Back Ratio (dB)	3.87645	7.12063	5.27525	8.5563	12.6292	15.8042	17.529	10.9668	10.3876	5.48383
Phi BW (°)	147	136	107	144	180	176	173	161	155	148
+ Phi BW (°)	80	80	58	82	72	116	115	111	93	109
- Phi BW (°)	67	56	49	62	108	60	58	50	62	39
Theta BW (°)	34	27	31	59	35	54	54	56	54	38
+ Th. BW (°)	12	13	20	12	13	38	37	42	40	10
- Th. BW (°)	22	14	11	47	22	16	17	14	14	28
Boresight Phi (°)	150	135	150	300	30	330	330	330	345	270
Boresight Th. (°)	120	120	120	120	105	90	90	90	90	135
Maximum Power (dBm)	-3.06148	-0.0245331	0.00309981	2.92397	2.85647	2.12896	2.41661	1.76356	1.43938	2.42909
Minimum Power (dBm)	-16.4336	-18.7773	-11.1906	-20.0498	-17.2368	-13.6752	-15.1124	-16.7065	-14.4459	-11.5475
Average Power (dBm)	-8.03154	-5.26476	-4.81546	-1.99014	-1.71583	-2.73491	-2.50972	-2.55421	-2.38283	-1.44174
Max/Min Ratio (dB)	13.3721	18.7528	11.1937	22.9738	20.0933	15.8042	17.529	18.47	15.8852	13.9766
Max/Avg Ratio (dB)	4.97006	5.24023	4.81856	4.91411	4.5723	4.86387	4.92634	4.31777	3.8222	3.87083
Min/Avg Ratio (dB)	-8.40205	-13.5126	-6.37511	-18.0597	-15.521	-10.9403	-12.6027	-14.1522	-12.063	-10.1058
Average Gain (dB)	-7.0321	-4.29924	-3.83426	-1.60328	-1.45027	-2.57683	-2.39381	-2.53055	-2.49601	-1.53514
E-Plane BW (°)	34	29	33	39	38	67	65	78	55	97
+ E-Plane BW (°)	12	14	21	18	15	19	20	16	15	21
- E-Plane BW (°)	22	15	12	21	23	48	45	62	40	76
H-Plane BW (°)	152	124	118	46	98	94	104	176	165	37
- H-Plane BW (°)	98	81	91	29	64	66	74	145	71	24