



# MIMO Combo Antenna

## MODEL: AW-10

V1.0 2013-11-29

**MIMO LTE+MIMO Dual Band 2.4-5.0GHz+GNSS**



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### Overview:

The **AW-10** is the multi-band antenna, which covers GNSS/700~2700MHz/ 2400~2500MHz /5150~5850MHz frequencies. It is specially designed for any telemetry applications, which utilize those bands. The high sensitivity of **AW-10** will enhance the performance of your telemetry devices.

### Features:

1. Heavy-duty low profile compact structure
2. Screws mount, IP67 Fully waterproof
3. Covers all the mobile communication network
4. **GLONASS feature is optional**

### Applications:

1. Vehicle tracking
2. GPS Navigation
3. Telemetry Application
4. Transportation and remote monitoring

### Specification:

Category	GPS Antenna	LTE Antenna
Frequency	1575.42MHz (L1, GPS) 1602MHz (GLONASS)	704~960 MHz,1710~2690 MHz
Gain	27dB @ 3V	6.9dBi@700~960MHz(1m Cable) 4.0dBi@1710~2170MHz(1m Cable) 2.7dBi@2300~2690MHz(1m Cable)
V.S.W.R	≤ 1.5	<2.2 (with 1m cable)
Noise Figure	1.2 Max	-
Band Width	43MHz @ S11 ≤ -10dB	256MHz for frequency of 704-960MHz 460MHz for frequency of 1710-2170MHz 100MHz for frequency of 2400-2500MHz 700MHz for frequency of 5150-5850MHz
Impedance	50 Ohm	50 Ohm
Cable/Connector	1m RG-174 Cable-SMA(P)	1m RG-58 Cable-SMA(P)
Polarization	R.H.C.P	Linear
Power supply	3.0 ~ 5.5V DC	-
Power Consumption	6.1~13mA	-
Power Handling Capacity	-	10W
Operation Temperature	-45degC to +80degC	
Category	2.4G~2.5G	5.1G~5.8G
Frequency	2400~2500MHz	5100~5850MHz
Gain	3.9dBi (1m Cable)	3.3dBi (1m Cable)
V.S.W.R	≤ 1.7	≤ 1.55
Cable/Connector	1m RG-174 Cable-SMA(P)	1m RG-174 Cable-SMA(P)
Polarization	Linear	Linear
Dimension	110mm(Dia.) x 40mm(H)	
Operation Temperature	-40degC to +80degC	
Storage Temperature	-45degC to +100degC	

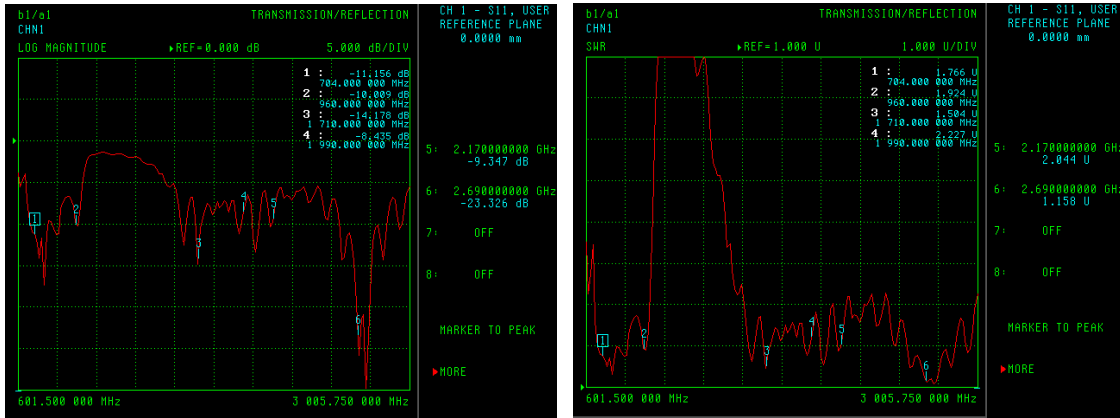
\* This specification is subject to change without prior notice

\* Customization specifications is welcome

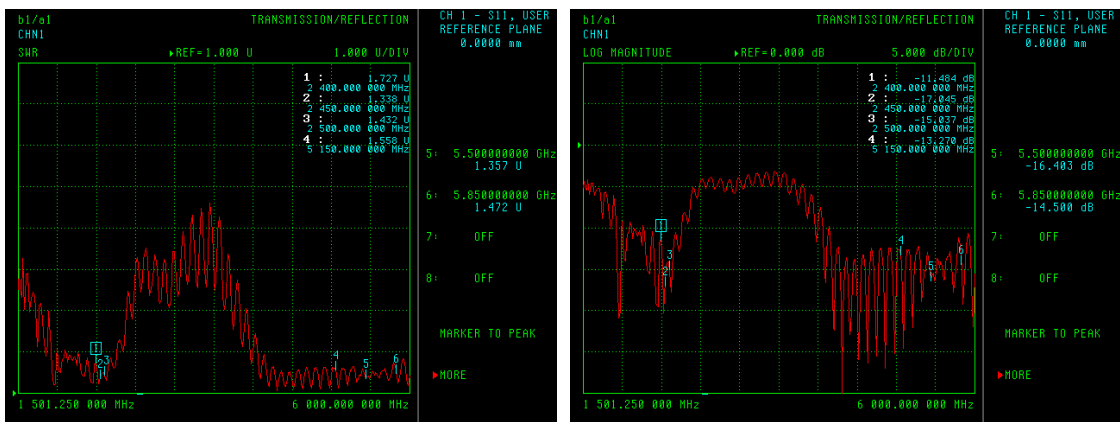
\* GLONASS is optional

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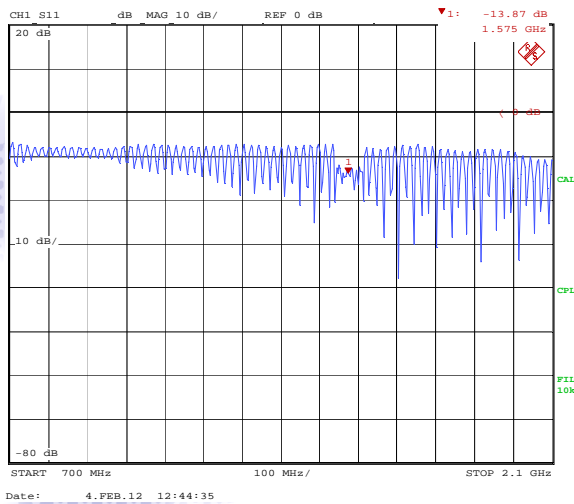
### LTE Return Loss & VSWR:



### WLAN (2.4G+5G) Antenna Return Loss & VSWR:



### GPS Return Loss:



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### LTE 3D Gain@1M RG-58:

Frequency (MHz)	704	734	756	768	787	824	868	880	915
Efficiency (%)	35.44	78.61	82.65	77.2	74.71	56.01	39.87	44.63	67.09
Gain (dBi)	1.37	6.9	6.03	7.16	5.38	5.82	1.76	1.56	3.87
Average Gain (dB)	-4.51	-1.05	-0.83	-1.12	-1.27	-2.52	-3.99	-3.5	-1.73

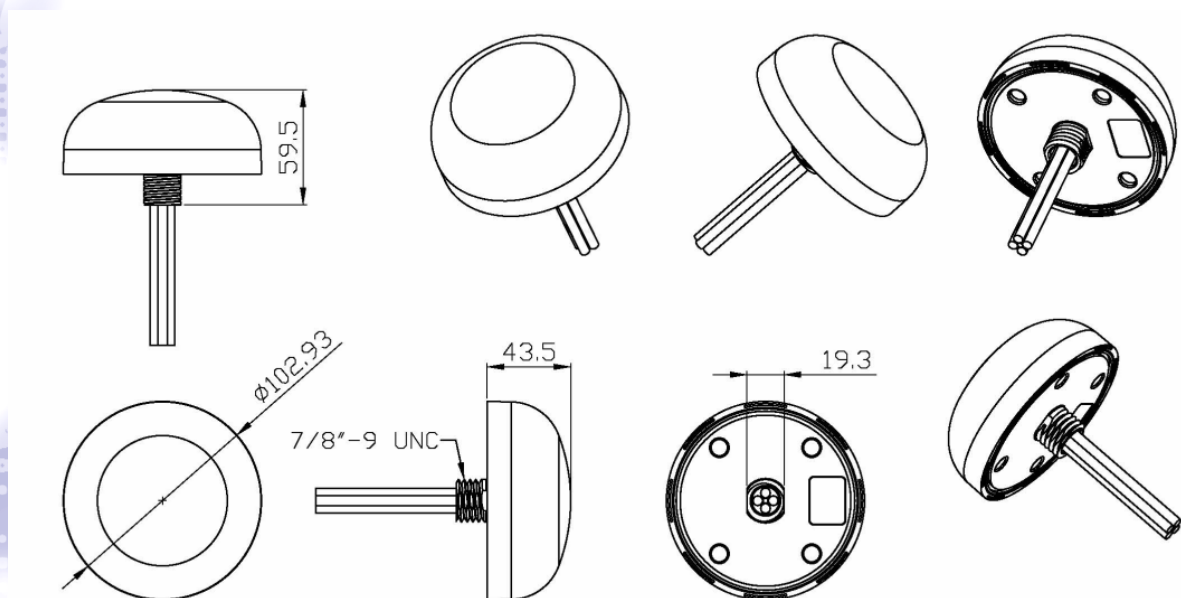
Frequency (MHz)	960	1710	1785	1805	1850	1880	1920	1990	2110
Efficiency (%)	54.35	46.22	52.41	52.67	51.03	48.7	56.13	49.5	37.05
Gain (dBi)	4.31	3.03	2.54	3.58	2.09	4.07	2.29	3.46	0.66
Average Gain (dB)	-2.65	-3.35	-2.81	-2.78	-2.92	-3.13	-2.51	-3.05	-4.31

Frequency (MHz)	2140	2170	2300	2400	2500	2570	2620	2690
Efficiency (%)	49.46	42.08	45.76	38.58	44.42	51.73	47.2	56.09
Gain (dBi)	1.48	1.86	1.85	0.37	0.72	1.51	1.66	2.78
Average Gain (dB)	-3.06	-3.76	-3.4	-4.14	-3.52	-2.86	-3.26	-2.51

### WLAN (2.4G+5G) 3D Gain@ 1M RG-58:

Frequency (MHz)	2400	2450	2500	5150	5250	5350	5500	5650	5750	5850
Efficiency (%)	45.17	50.64	49.91	25.67	34.8	29.79	38.12	37.18	37.67	46.2
Gain (dBi)	1.52	3.92	1.71	0.94	2.44	1.07	1.99	2.7	2.31	3.3
Average Gain (dB)	-3.45	-2.95	-3.02	-5.91	-4.58	-5.26	-4.19	-4.3	-4.24	-3.35

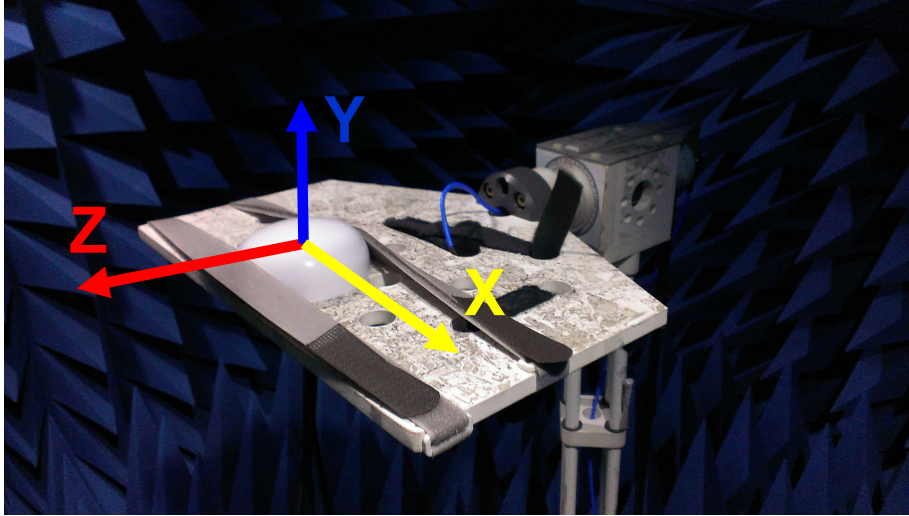
### Antenna Dimension:



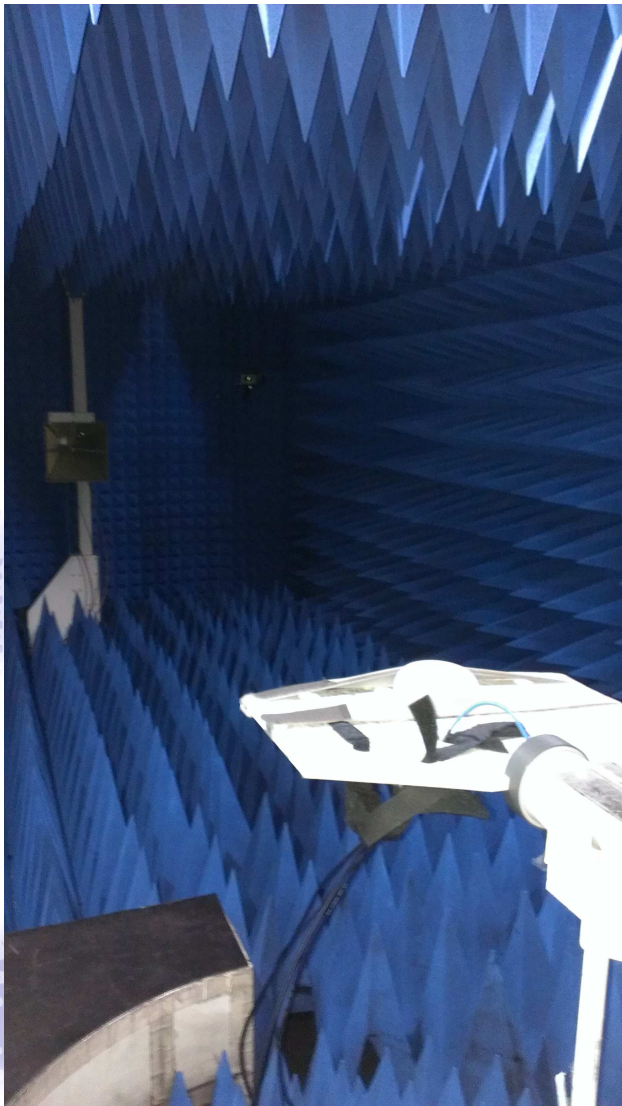
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### Antenna Testing Setup:

- The antenna is tested in the SANAV CTIA standard 3D anechoic chamber



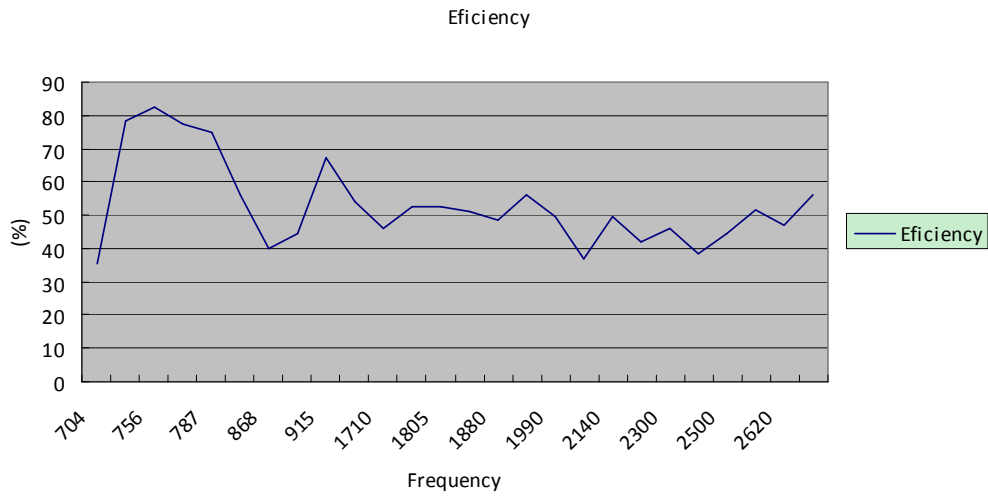
3 axis of antenna on the rotation table



Rotation table & Horn antenna

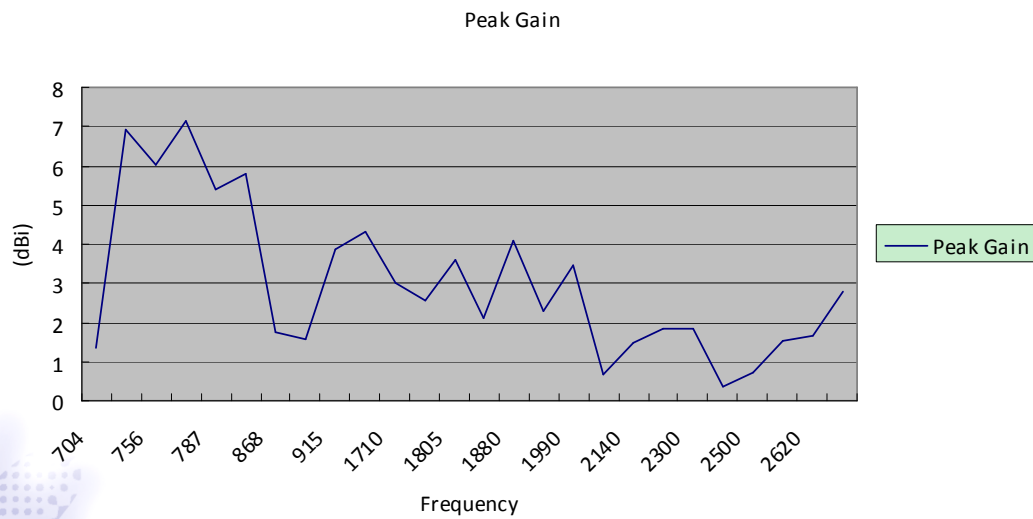
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### Antenna Efficiency Curve - LTE:

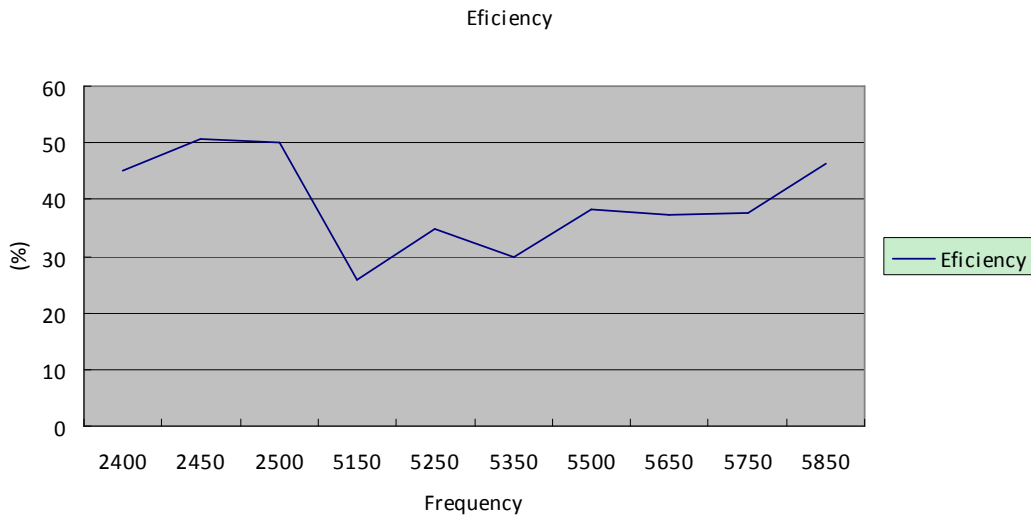


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### Antenna Peak Gain Curve - LTE:

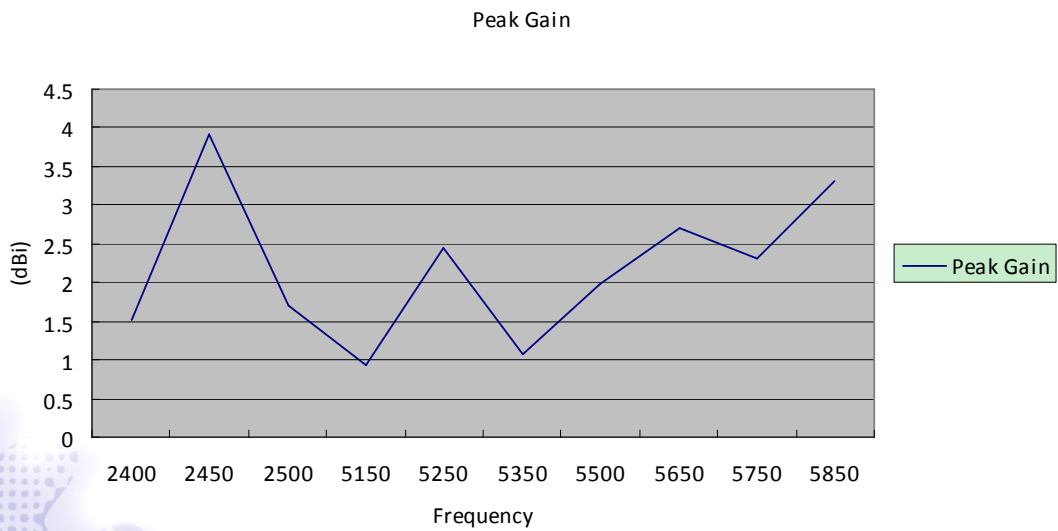


### Antenna Efficiency Curve - WLAN:



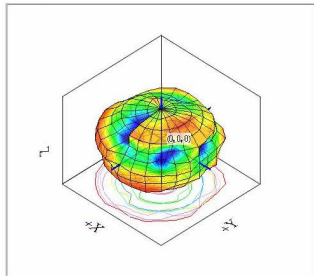
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### Antenna Peak Gain Curve - WLAN:

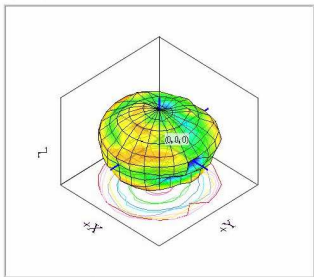


### Antenna Pattern LTE:

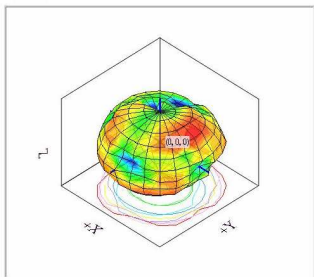
704CH



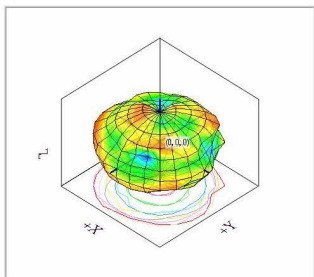
768CH



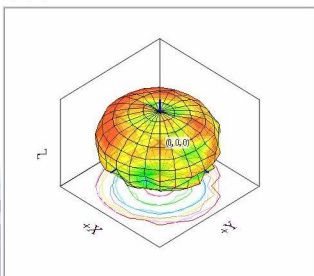
868CH



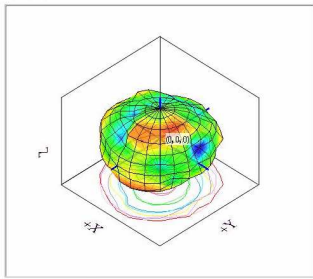
960CH



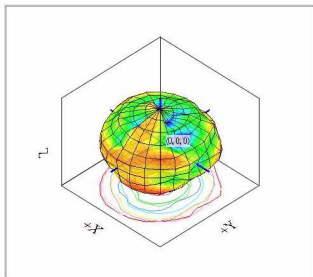
1805CH



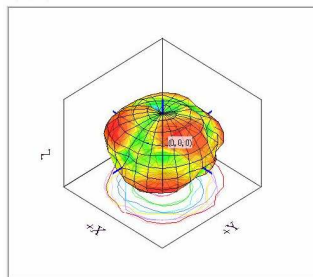
734CH



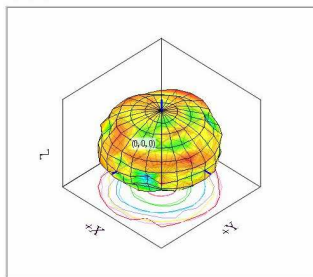
787CH



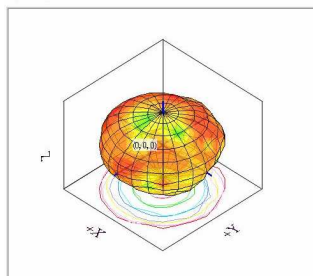
880CH



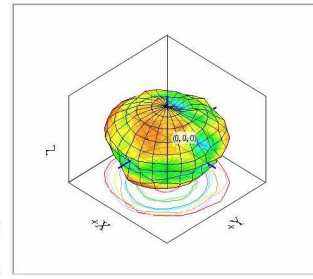
1710CH



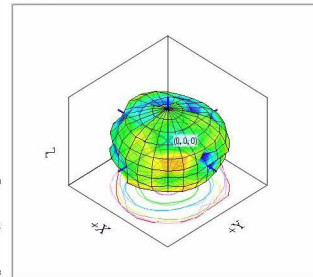
1850CH



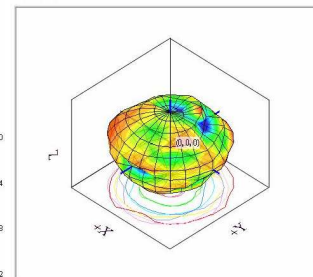
756CH



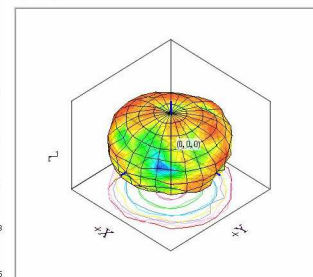
824CH



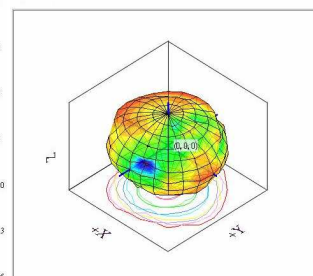
915CH



1785CH



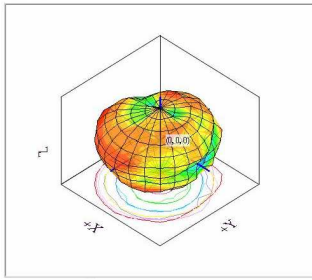
1880CH



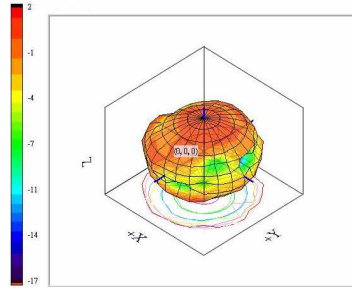
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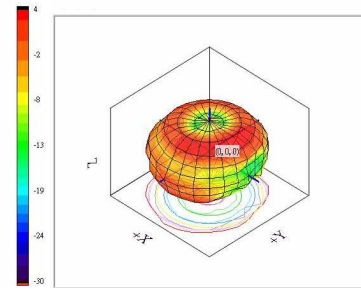
1920CH



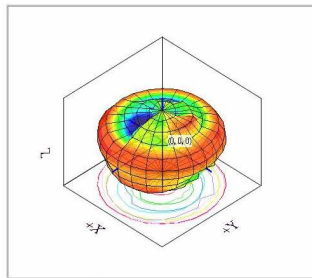
1990CH



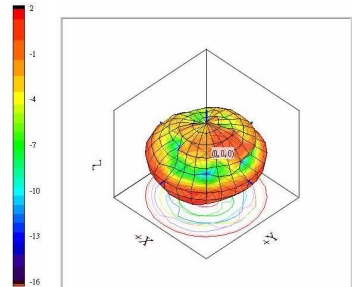
2110CH



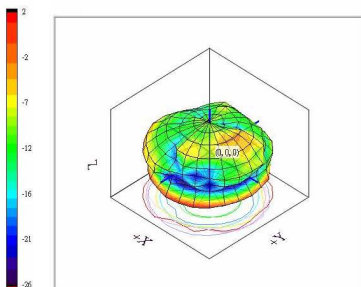
2140CH



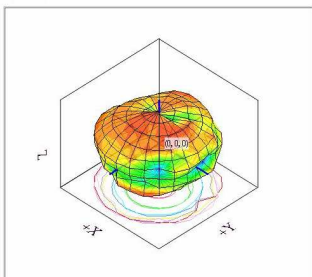
2170CH



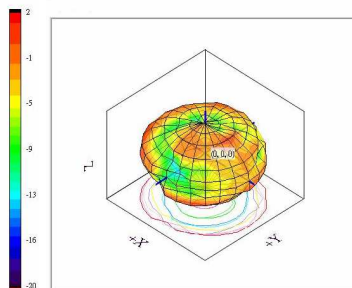
2300CH



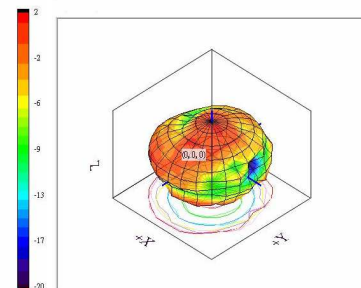
2400CH



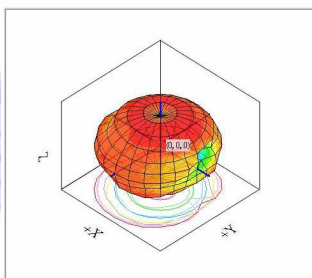
2500CH



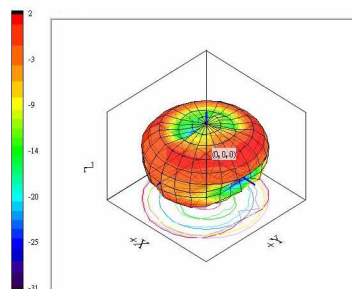
2570CH



2620CH

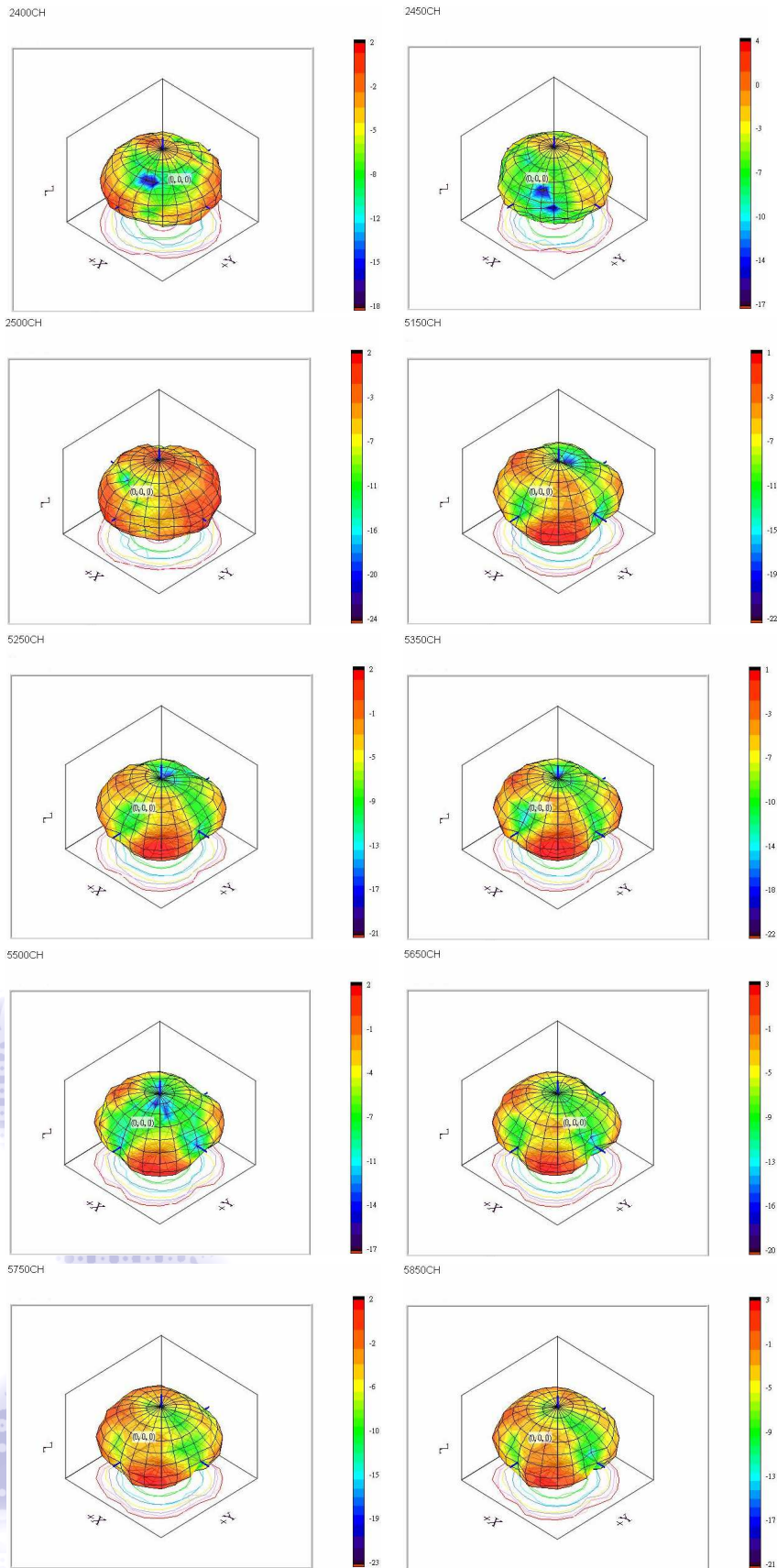


2690CH



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## Antenna Pattern WLAN:



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