

9

, , , , , .

(antenna diversity)

, ,

eander line antenna)

(normal mode helix) (m
- F (Planar Inverted - F Antenna) (PIFA)

(10%) ,

, PIFA

가 ,

가

가

(antenna feed)가

가

가

0108899.6 (radiator)

PHGB010056)

(ground conductor)

가

()가 ,

(2) , (correlation)

()

가 가 가

가

1

2 (separability)

3 가

4 - (back - coupled) 가

5 -

6 5 MHz (f) dB (simulated return loss) (S_{11})

7 1000 2800 MHz 5 (S mith chart).

8 5

9 - - (doubly - slotted capacitively back - coup led)

10 9 MHz (f) dB (S_{11})

11 1000 2800 MHz 9

12 가 9 MHz (f) dB (S_{11})

13 1000 2800 MHz , 가 , 9

14 가 9 MHz (f) dB (S_{11})

15 1000 2800 MHz , 가 , 9

가

1 (104) 가 (108) (106) (arm)(102) (106) (102,104) 2 (106) 가

1 (102) 80 mm NEC() , 40 mm 1 mm 2 (104) 2 (R+jX)

(Ref R Ref X) 가 (self - wave resonance) 가

(P₁) , R₂ jX₂ (P₂) $\frac{P_1}{P_2} = \frac{R_1}{R_2}$ 가 R₁ jX₁

가 (R₁) 0 (R₁) 가 (capacitive back - coupling) 가

가 가 4 (matching circuit) Q (simulation) Q가 1) Q

50 Q

가 5 (502) 10 × 40 × 100 mm (504) 2 mm 10 × 10 mm (506) (coupling effectiveness) (502) (506) (506) (compromise) (support)(510) 0.5 pF (502) (506) (502)

가 , (S₁₁) 1000 2800 MHz (f) 6
 (Ansoft Corporation)가 , (HFSS)
 (" L") 가 1900 MHz . ()
 90 %) 7 dB 60 MHz , 가 7
 3% .

(502) (504) 1900 MHz 3 - j90 , .
 8 , , HFSS
 0019335.9
 가 .

9 . , 가 . 가
 (902) (912) 10 × 40 × 100 mm
 (912) 3 mm 29.5 mm , (902) 12 mm
 , (504) 10 × 10 mm (506)
 , (902) (908) 4 mm (510) .

FSS (S₁₁) 1000 2800 MHz (f) 10 가 , H
 504) . (504) , ()
 . 1.83 GHz 2.24 GHz . 1
 UK 0019335.9 , (504) (912)
 2 (912) , (912) 가 (912) 1
 가 11 .
 2

(matching)
 2
 가 , 가 (disconnected)

1000 2800 MHz (f) (S₁₁) 가 12 . 7 dB
 750 MHz 40 % . 1710 2170 MHz 가
 UMTS DCS 1800 .
 가 13 .
 60 mm 1 cm - 3 , (hand - held)
 49 1900 MHz 1.6 S/m
 (S₁₁) 가 14 15
 , 27 % ()
) .

가
0.7
가 3

(decorrelated)
(902)

	주파수 (MHz)		
	1711	1918	2170
환경	0.58	0.21	0.63
시골	0.46	0.10	0.51
교외	0.45	0.10	0.50
도시 매크로/마이크로셀	0.46	0.11	0.51
도시 피크셀	0.34	0.04	0.37
육외-육내	0.35	0.05	0.39
육내			

(902) 3

60 mm

	주파수 (MHz)		
	1711	1918	2170
환경	0.21	0.04	0.45
시골	0.14	0.05	0.46
교외	0.18	0.06	0.45
도시 매크로/마이크로셀	0.10	0.00	0.38
도시 피크셀	0.06	0.02	0.30
육외-육내	0.09	0.01	0.31
육내			

(504)가

(504)

DCS1800 UMTS
(902) (912)

가 (coverage)

(trade - off)

가 가

(912)

가 50

가 (902)

가

9

1711 MHz

0.2

(sacrificial)(-) 가
(coupling element)

가

(radiating element) , (PCB)
EMC

" (a an)"
(comprising)"

(57)

1.

(antenna feeds) (ground conductor)

2.

1

3.

2

(conducting plate) (par

allel plate capacitor)

4.

1 3

5.

4

(major axis)

6.

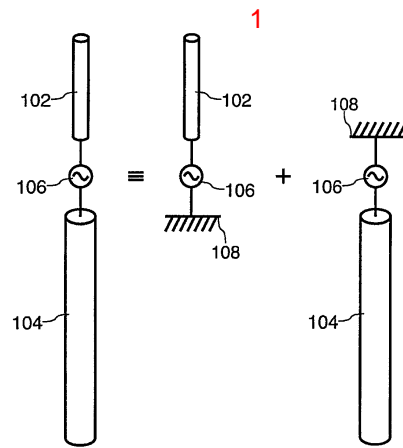
1 5 ,

7.

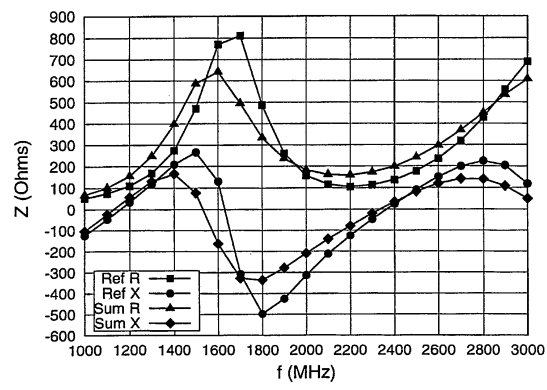
1 5 ,

8.

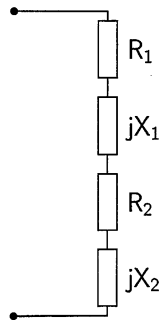
1 7 ,



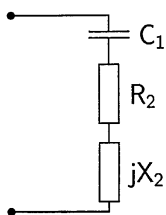
2



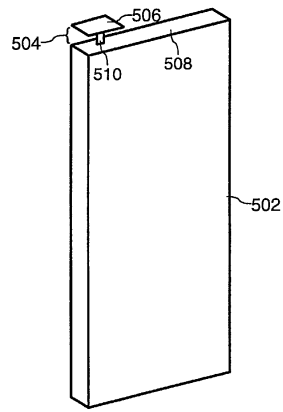
3



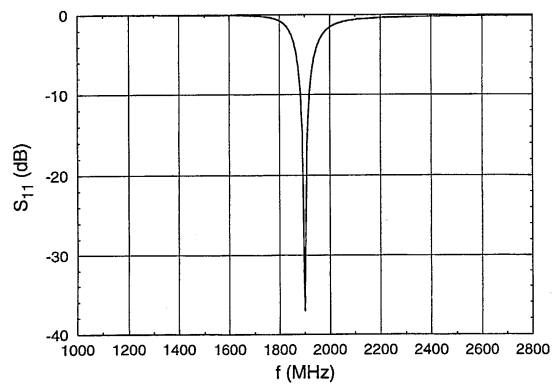
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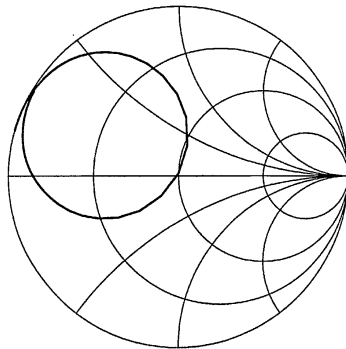
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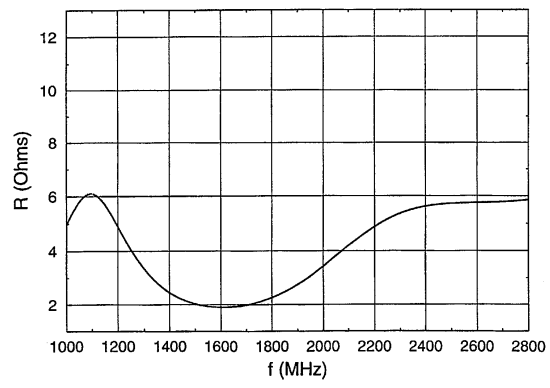
6



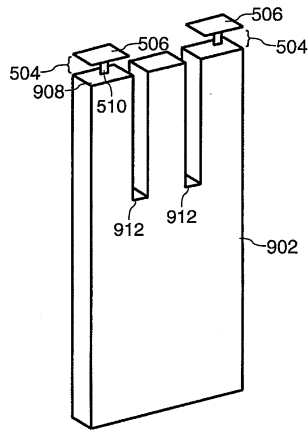
7



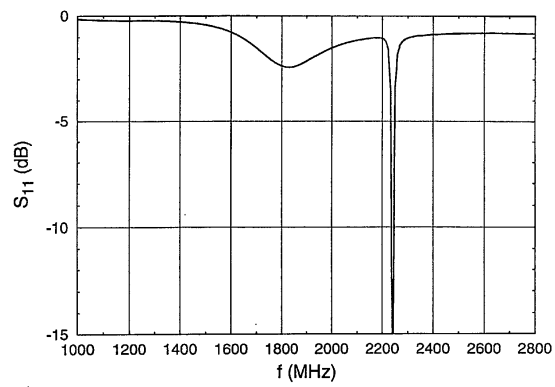
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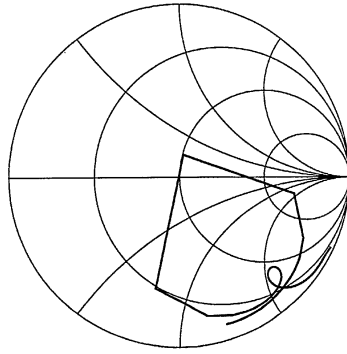
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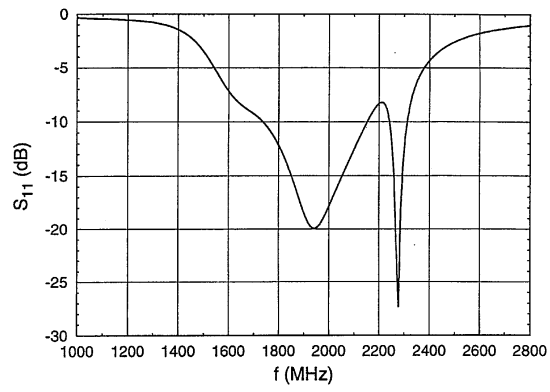
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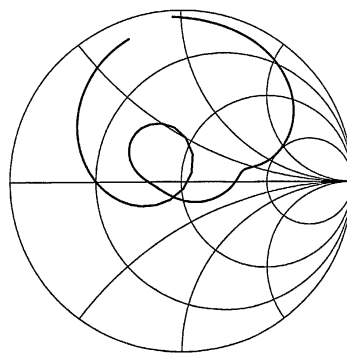
11



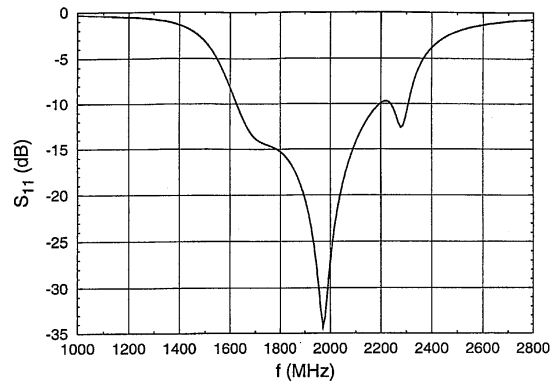
12



13



14



15

