



(electrical feed structures) (pellet) (dielectric resonator antenna, DRA),  
 (high dielectric antenna, HDA), (dielectrically-loaded antenna, DLA)

(radiate) (device) , DRA (radio wave) (substrate)  
 (monopole probes) (monopole aperture feeds) (oblong),  
 가 [ 가 , ,  
 (microstrip transmission line), (coplanar waveguide), (slotline)  
 (strip feed) ].  
 가 (dipole probes)

09/431,548 KINGSLEY, S.P. O'KEEFE, S.G.가  
 'Beam steering and monopulse processing of probe-fed dielectric resonator antennas'[IEE Proceedings  
 - Radar Sonar and Navigation, 146, 3, 121 - 125, 199]

(incrementally) 가

DRA (volume) ,  
 . DRA ,

(conductive radiation element)가 (modify)  
 (encased),

DRA 가 ,  
 (resonating medium)

(DRA) 가 1983 [LONG, S.A., McALLISTER  
 R, M.W., and SHEN, L.C.: 'The Resonant Cylindrical Dielectric Cavity Antenna', IEEE Transactions on Antennas  
 and Propagation, AP-31, 1983, pp 406-412], , 가

가 [MONGIA, R.K. and BHARTI  
 A, P.: 'Dielectric Resonator Antennas - A Review and General Design Relations for Resonant Frequency and  
 Bandwidth', International Journal of Microwave and Millimetre-Wave Computer-Aided Engineering, 1994, 4,  
 (3), pp 230-247].

PETOSA, A., ITTIPIBOON, A., ANTAR, Y.M.M., ROSCOE, D  
 ., CUHACI, M.: 'Recent advances in Dielectric-Resonator Antenna Technology', IEEE Antennas and Propagation  
 Magazine, 1998, 40, (3), pp 35 - 48

(excited) , DRA (geometry) 가

[McALLISTER, M.W., LONG, S.A. and CONWAY G.L.: 'Rectangular Dielectric Resonator Antenna', Electronics Letters, 1983, 19, (6), pp 218-219].

[ITTIPIBOON, A., MONGIA, R.K., ANTAR, Y.M.M., BHARTIA, P. and CUHACI, M.: 'Aperture Fed Rectangular and Triangular Dielectric Resonators for use as Magnetic Dipole Antennas', Electronics Letters, 1993, 29, (23), pp 2001-2002].

(hemisphere)[LEUNG, K.W.: 'Simple results for conformal-strip excited hemispherical dielectric reso

nator antenna', Electronics Letters, 2000, 36, (11)].

[LONG, S.A., McALLISTER, M.W., and SHEN, L.C.: 'The Resonant Cylindrical Dielectric Cavity Antenna', IEEE Transactions on Antennas and Propagation, AP-31, 1983, pp 406-412].

(half-split cylinder) [MONGIA, R.K., ITTIPIBOON, A., ANANTAR, Y.M.M., BHARTIA, P. and CUHACI, M: 'A Half-Split Cylindrical Dielectric Resonator Antenna Using Slot-Coupling', IEEE Microwave and guided Wave Letters, 1993, Vol. 3, No. 2, pp 38-39].

DRA [TAM, M.T.K. and MURCH, R.D.: 'Half volume dielectric resonator antenna designs', Electronics Letters, 1997, 33, (23), pp 1914 - 1916]. (sectorising)

(high dielectric antenna, HDA) DRA, HDA (power)

DRA HDA (primary radiator) DLA (conductive component)(modify) DLA가 (medium)

DLA (microstrip feedline)

DLA (assembly-line processes) DRA, HDA (PCB) (a piece)

DRA HDA DLA

(feed structure)

DRA, HDA DLA

1

가

2

(PCB) (metallisation) 가

(major surfaces)

DRA, HDA DLA

(slot feeding) 가

PCB

(pick-and-place machine) (reel)

PCB( )

(conducting epoxy) 가

가

가

B PCB (solder paste) (reflow oven) 가 PC 가 (conductive silver paint)가 (deposit) (cost effective) (hot plate) (microstrip feeding) 50 (ohm)( (balanced) (joint) (pad) ( 1 ). ( 2 ). ( 3 ). ( lower surface), / PC ( , extend) (non-matching) (half-split cylindrical) 가 DRA HDA 가 DLA PCB 1 2 1 PCB (D RA HDA ) DLA DLA (wall 2 ) (fed up), (fed onto). DLA 2 (feed or connection point) (terminate) 1 1 2 (exposed end surf 가) DLA DRA HDA DRA HDA (feed) ( )

( ) ( )  
 , (volume) /  
 가  
 , 가 (off - centre) ,  
 (directional component) , DRA , HDA (arr  
 가 ay) (feeding) .  
 3 , , 가 .  
 4 , 가 , 가  
 , , .  
 1 PCB  
 2 PCB 가 PCB  
 3 PCB PCB  
 4  
 5 DLA .  
 6  
 1 PCB(3) (2) ( ) (1) ( )  
 1) (off - centre) , ( soldered joint) ,  
 2 1 PCB(3) 가 (4) PCB(3) (2) , (1) (5)  
 (1) 가  
 3 1 2 PCB(3) 가 (6) PCB(3) (2) , (1) 가  
 (7) 가



(dielectric substrate)  
(dielectric pellet)

1 2. ,

1 3. 2 ,

1 4. 3 ,

(glued)

4 5. ,

(conducting epoxy)

1 6. 3 ,

1 7. 6 ,

7 8. ,

(conductive silver paint)

1 9. 8 ,

1 10. 8 ,

(offset position)

10 11. ,

12.

1 11 ,

가

12 13. ,

가

12 14. 13 ,

/

1 15. 14 ,

1 16. 15 ,

1 17. 15 ,

1 18. 15 ,

18 19. ,

19 20. ,

(underside surface)

19 21. ,

(side surface)

(top surface)

22.

21 ,

23.

23 24.

24 25.

23 26.

26 27.

der paste) (sol

가 가

23 28. 27

(reel) , 가

23 29. 28

29 30.

(metallic paint)

31.

(off - centre)

32.

(feeding) ,

가

33.

34.



