

电磁场与电磁波实验守则

1

2

3

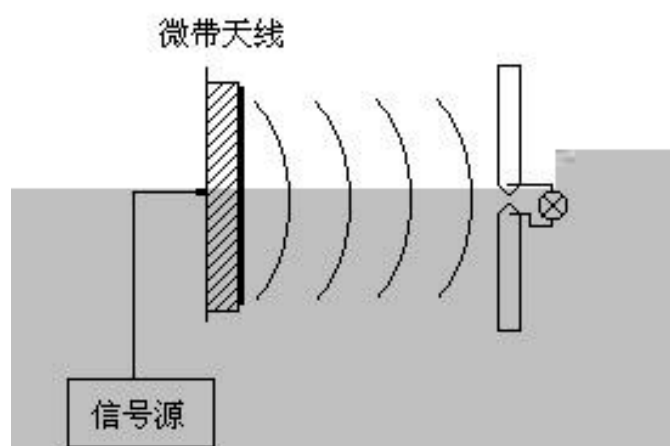
4

5

6

7

8

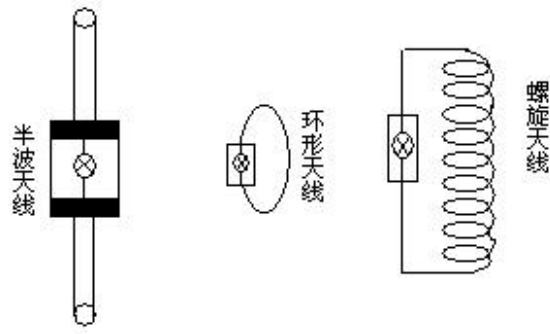


1

1

2

—



2

λ

$$= \lambda / 4$$

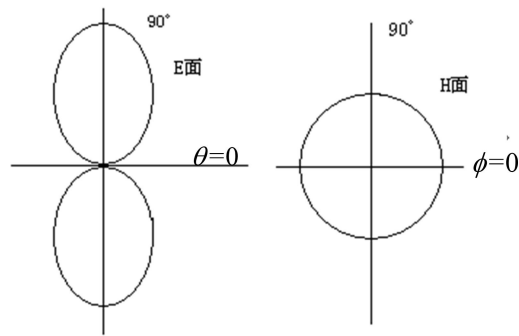
$$| \theta | = \frac{60}{\theta} \frac{\pi}{2} \theta = \frac{60}{\theta} \theta$$

θ

$$| \theta | = \frac{|\theta|}{\theta} = \frac{\pi}{2} \theta$$

θ

3



3

ϕ

$$\theta = \pi / 2$$

$$0.625\lambda$$

$$\theta = \pi / 2$$

$$\theta = \pi / 2$$

1

Signal
Standby

Tx

2

Tx

3

2

4

2

1

1

1

Tx

2

20cm

3

Tx

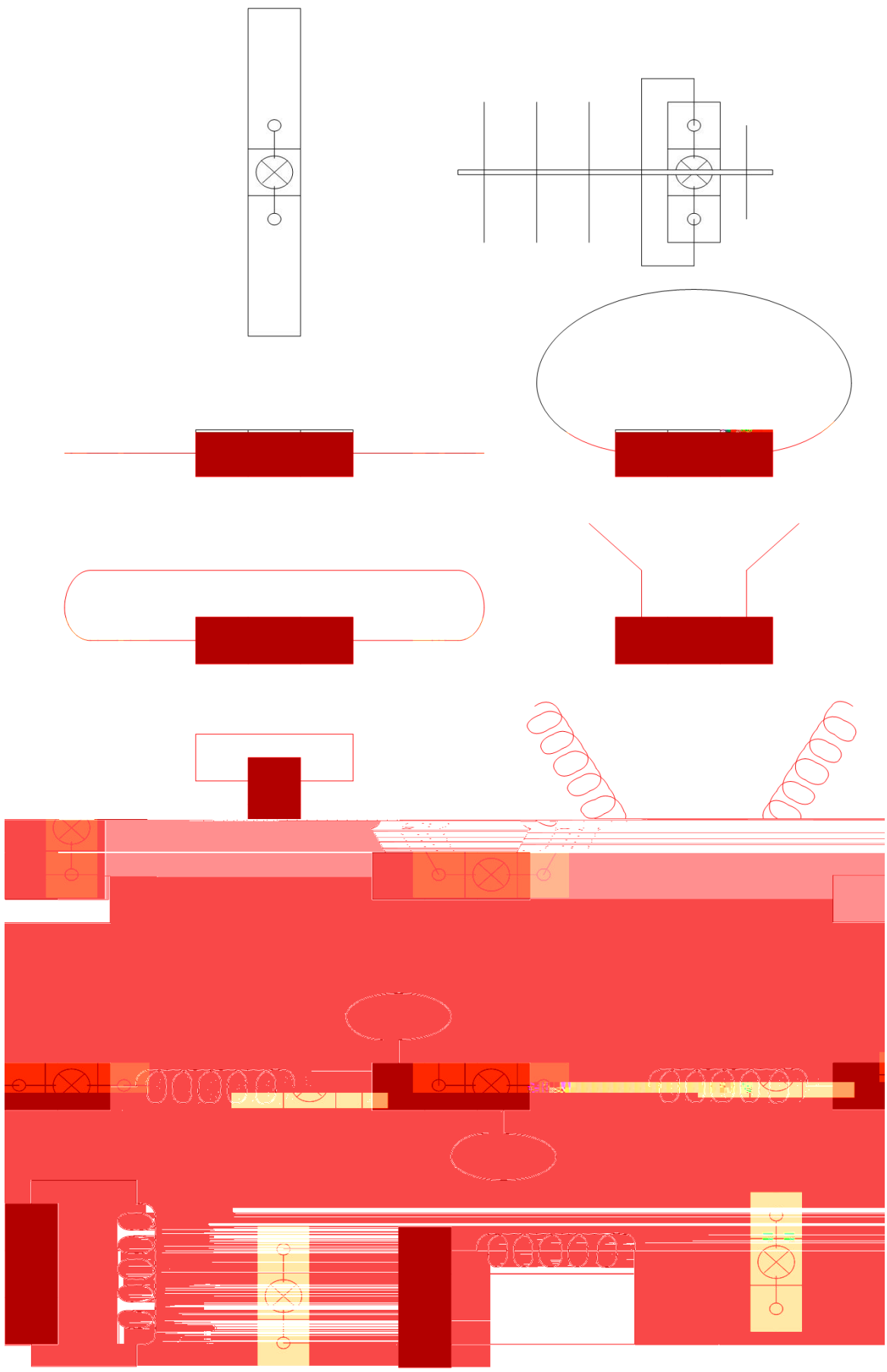
4

1

2

3

4



1

2

1

2

$$= \omega -$$

$$= \omega + \delta$$

$$\delta = \beta$$

$$\delta = \beta_1 = \pi = 0 \ 1 \ 2 \dots \dots \quad 1$$

$$\delta = \beta_2 = 2 + 1 \ \pi \ 2 = 0 \ 1 \ 2 \dots \dots \quad 2$$

$$_1 = \pi \ \beta = \lambda \ 2$$

$$\beta = 2\pi \left(\frac{2\Delta}{\lambda} + 1 \right)$$

λ

Δ

$$\Delta = \frac{\lambda}{4}$$

$$\lambda = 4\Delta$$

Δ



4

1

30 cm 35cm 40cm

2

Power

Tx

3

4

1 30cm

λ

2 35cm

3 40cm

2

2

1 Tx Alarm

Output

2

20cm

3 Tx

4

1

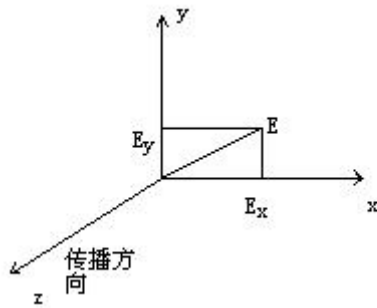
2

3

1
2
3

1
2
3

E
5 Z
X Y X Y



5

$$= \omega -$$

$$= \omega - + \delta$$

δ

$= 0$

$$= \omega$$

$$= \omega + \delta$$

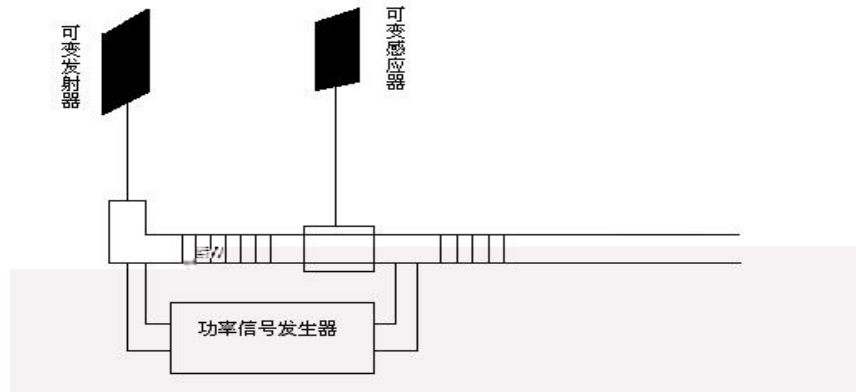
$$a^2 - b^2 + c^2 = 1$$

δ

$$\delta = +\pi / 2$$

$$\delta = \pm \pi / 2$$

$$\delta = -\pi / 2$$



6

1
Power

Output

2

45

Tx

3

3

4

45

Tx

5

3

6

3

1

Tx

Al arm

Output

2

20cm

3

Tx

4

1

2

3

4

1

2

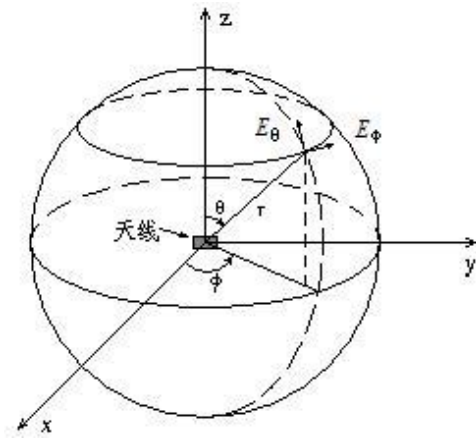
1

2

3

()

7



7

1°

()

()

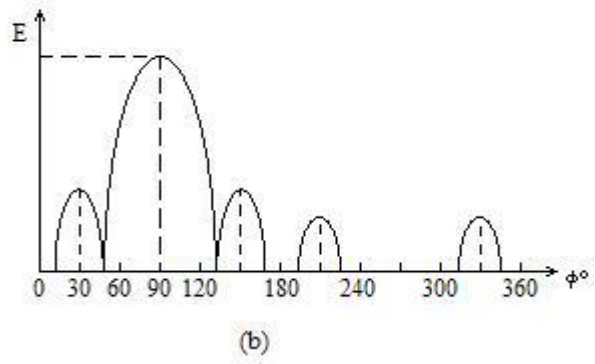
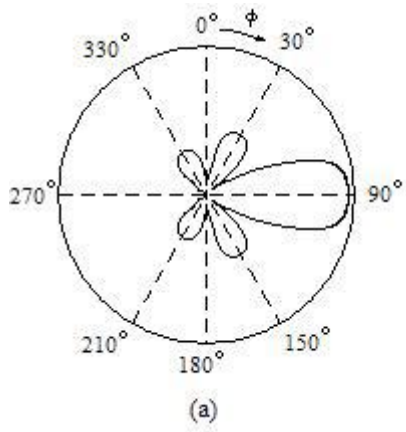
$E_{\theta\phi} / E$

$E_{\theta\phi}$

E

1

8

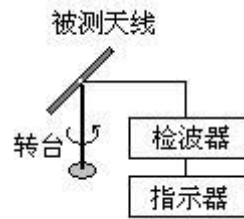
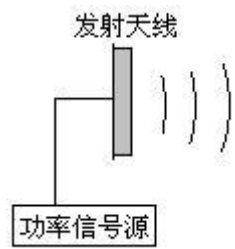


8

a

b

9



9

1

Signal

TX

2

TX

3

360°

4

5

1

TX

Alarm

2 TX

3

1 E H

2

1 E H 4

4 E H

E		0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
		190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	
H		0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
		190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	

2 E H

0°

180°

360°

3

E

3

4

