

```
subroutine lattice_time_2dtm
!***** lattice widths *****
dl=2.0d-3
dy=dl
dz=dl
!***** number of cells in pml (ncpml) *****
ncpml=8 ! number of cell in pml
tcpml=ncpml*dl ! thickness of pml
!***** sinusoidal frequency *****
freq=2.45d9 ! Hz
```

```
subroutine e_source_2dtm
do j=nint((yi(1)+yi(8))/2.0)-nint(20.0d-3/dy)-2, &
  nint((yi(1)+yi(8))/2.0)-nint(20.0d-3/dy)-1
do k=nint((zi(1)+zi(8))/2.0)-nint(25.0d-3/dz), &
  nint((zi(1)+zi(8))/2.0)-nint(25.0d-3/dz)+2
  ey(j,k)=1.0d0*dsin(2.0d0*pi*freq*time)
end do
end do
end subroutine e_source_2dtm
```

```
subroutine media_coeff_2dtm
! id=0 vacume
eps(0)=eps0
sig(0)=0.0d0
mu(0)=mu0
! id=1 pec,pmc (no define, see <e-field> or <h-field> )
```

```
! rectangular media
mys=nint((yi(1)+yi(8))/2.0)-nint(20.0d-3/dy)
mye=nint((yi(1)+yi(8))/2.0)+nint(100.0d-3/dy)
mzs=nint((zi(1)+zi(8))/2.0)-nint(25.0d-3/dz)
mze=nint((zi(1)+zi(8))/2.0)+nint(25.0d-3/dz)
call rectangular_media_1
```

```
! rectangular media
mys=nint((yi(1)+yi(8))/2.0)-nint(20.0d-3/dy)-2-nint(30.5d-3/dy)
mye=nint((yi(1)+yi(8))/2.0)-nint(20.0d-3/dy)-2
mzs=nint((zi(1)+zi(8))/2.0)-nint(25.0d-3/dz)
mze=nint((zi(1)+zi(8))/2.0)-nint(25.0d-3/dz)+2
call rectangular_media_1
```

```
subroutine rectangular_media_1
do j=mys,mye
do k=mzs,mze-1
  id_ez(j,k)=1
end do
end do
do j=mys,mye-1
do k=mzs,mze
  id_ey(j,k)=1
end do
end do
```

```
end subroutine rectangular_media_1
```

