



Kyutech

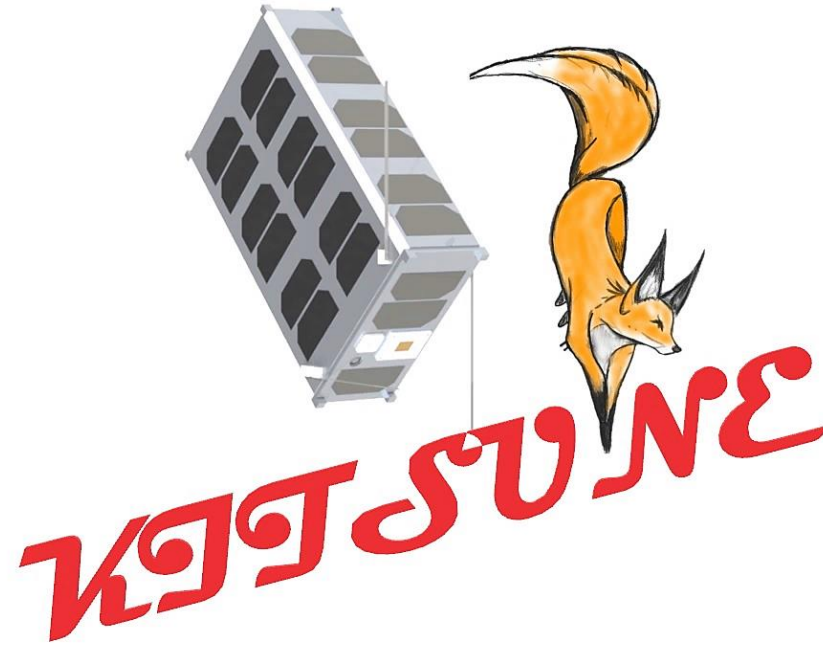
Kyushu Institute of Technology

国立大学法人

九州工業大学



Laboratory of
Spacecraft
Environment
INteraction
Engineering



Radiation Pattern

Date: 25th of December 2019

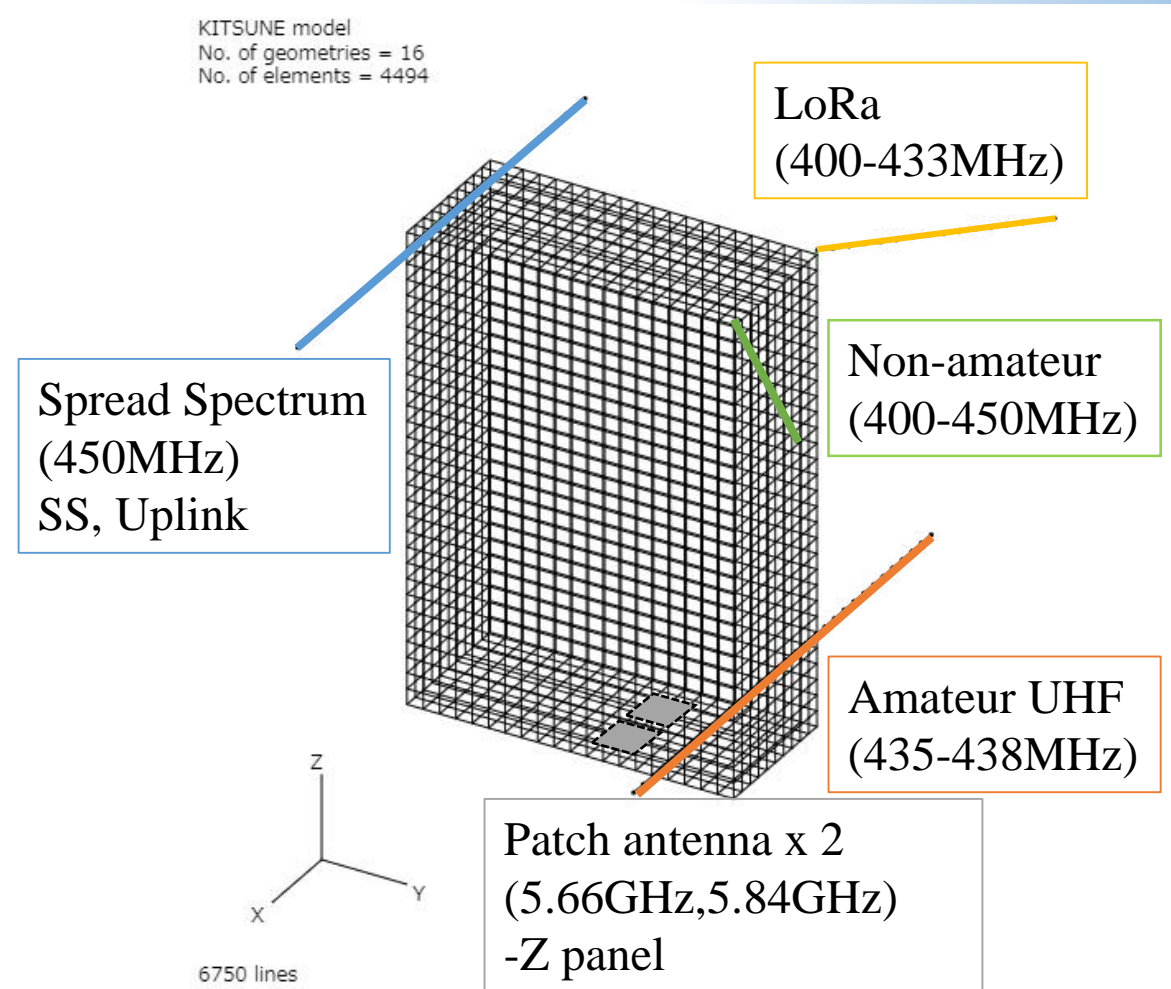
Editor : Daisuke Nakayama



Over View

- 6U Cube Sat
- 6 antennas
 - 2 Dipole antennas
 - 2 Monopole antennas
 - 2 Patch antennas

- Amateur
 - 435-438MHz : Dipole
 - 5.66GHz & 5.84GHz : Patch
- Non-amateur
 - 400 & 450MHz : Monopole
 - 400MHz SS : Dipole
 - 400 & 433MHz LoRa : Monopole



OpenMOM simulation model

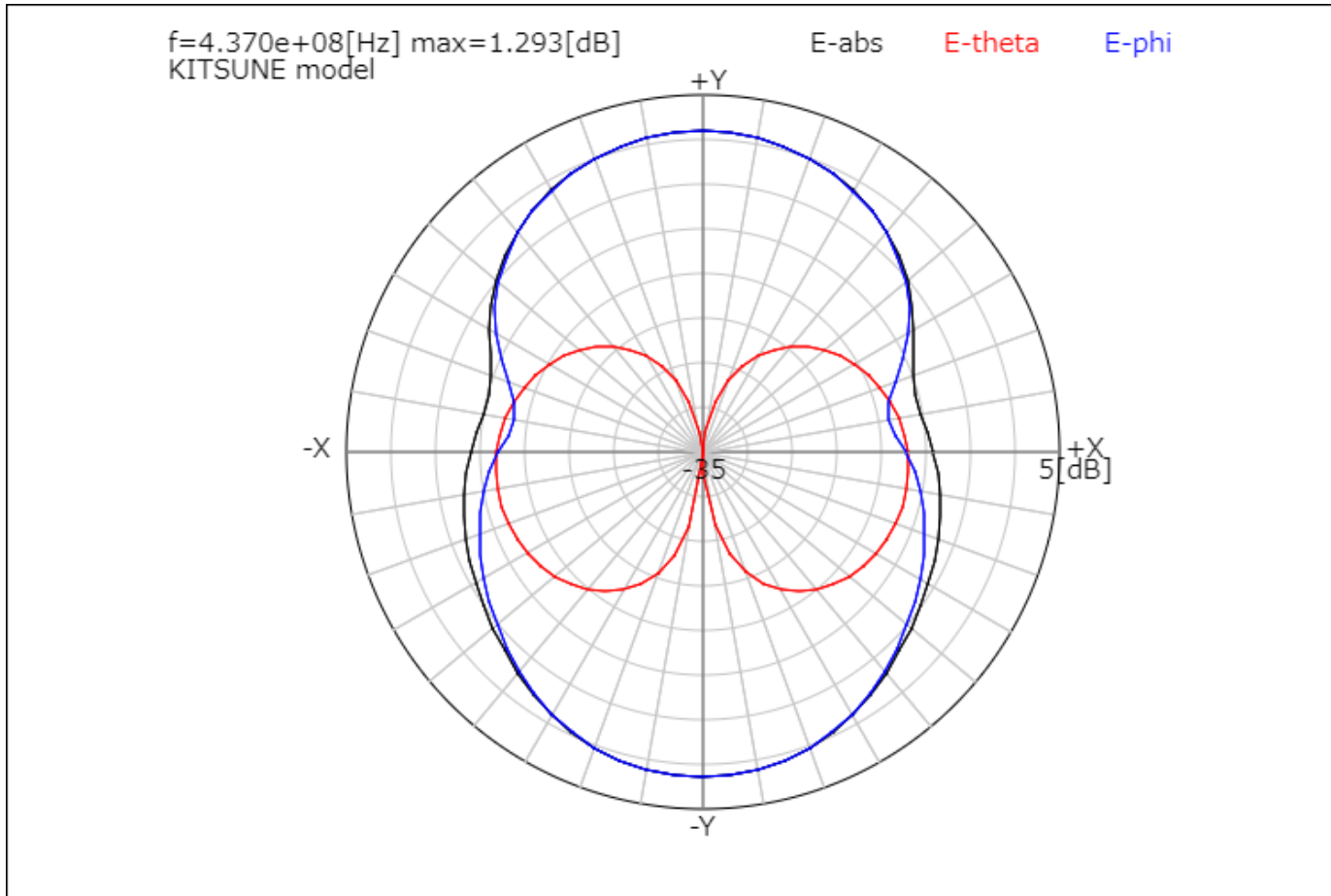


Amateur band

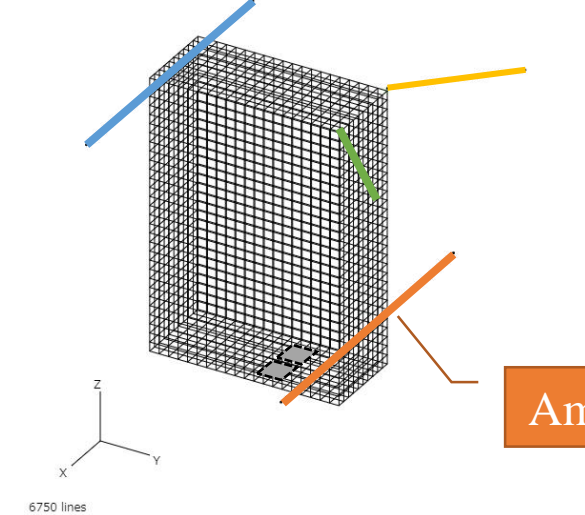
435MHz-438MHz

5.66GHz & 5.84GHz

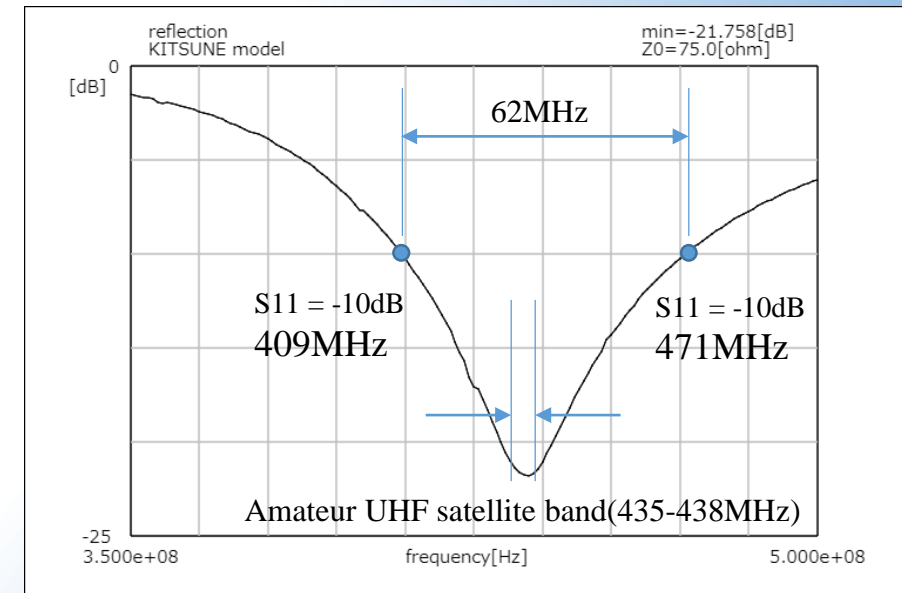
Amateur UHF



KITSUNE model
No. of geometries = 16
No. of elements = 4494



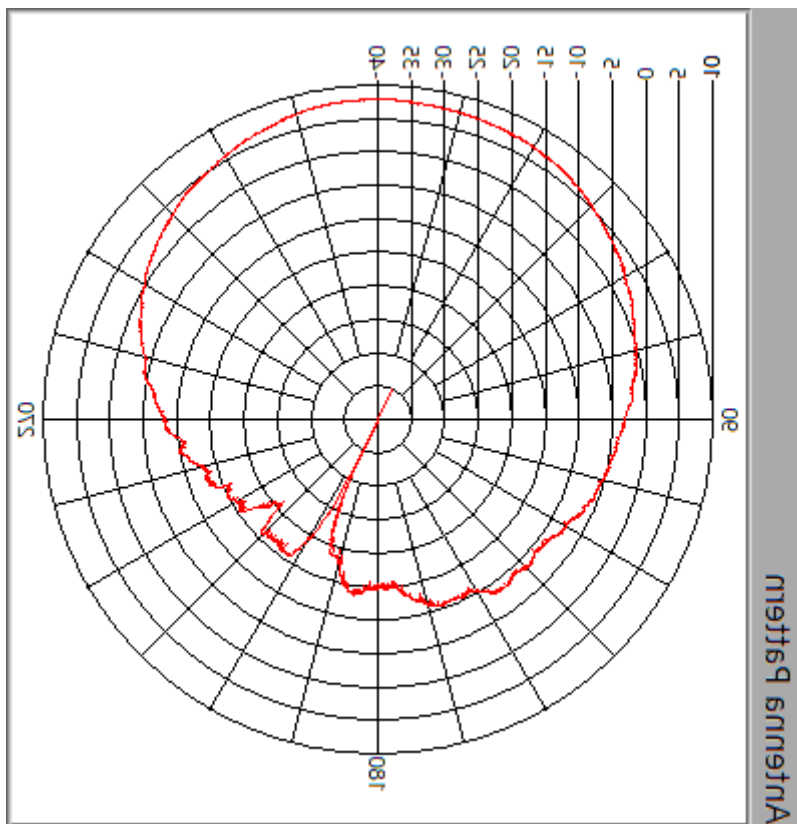
Amateur UHF



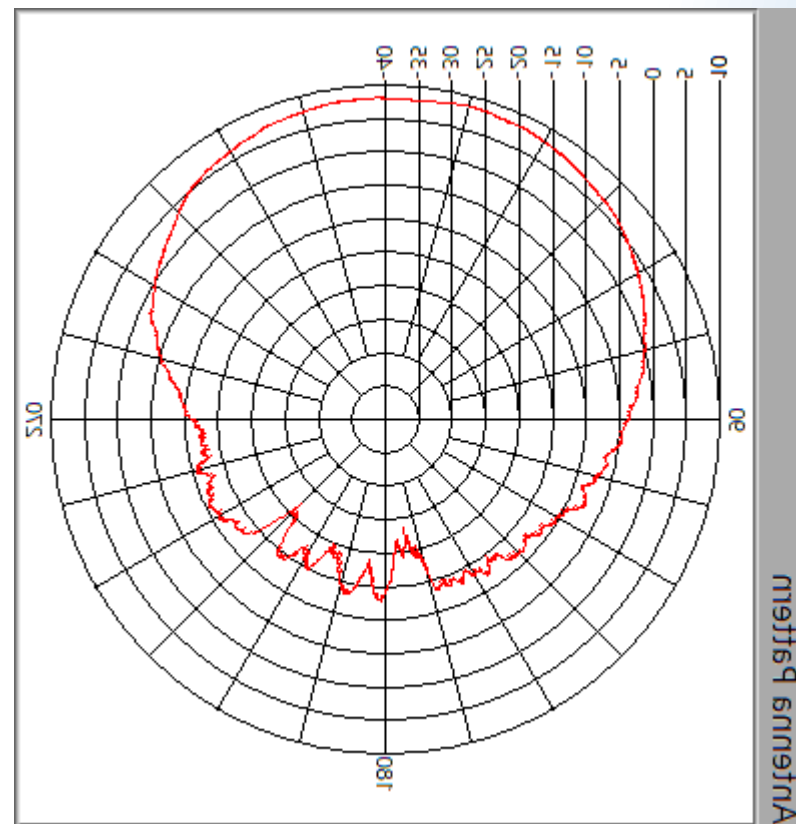


C-band patch antenna

Maximum gain is 8.4dBi



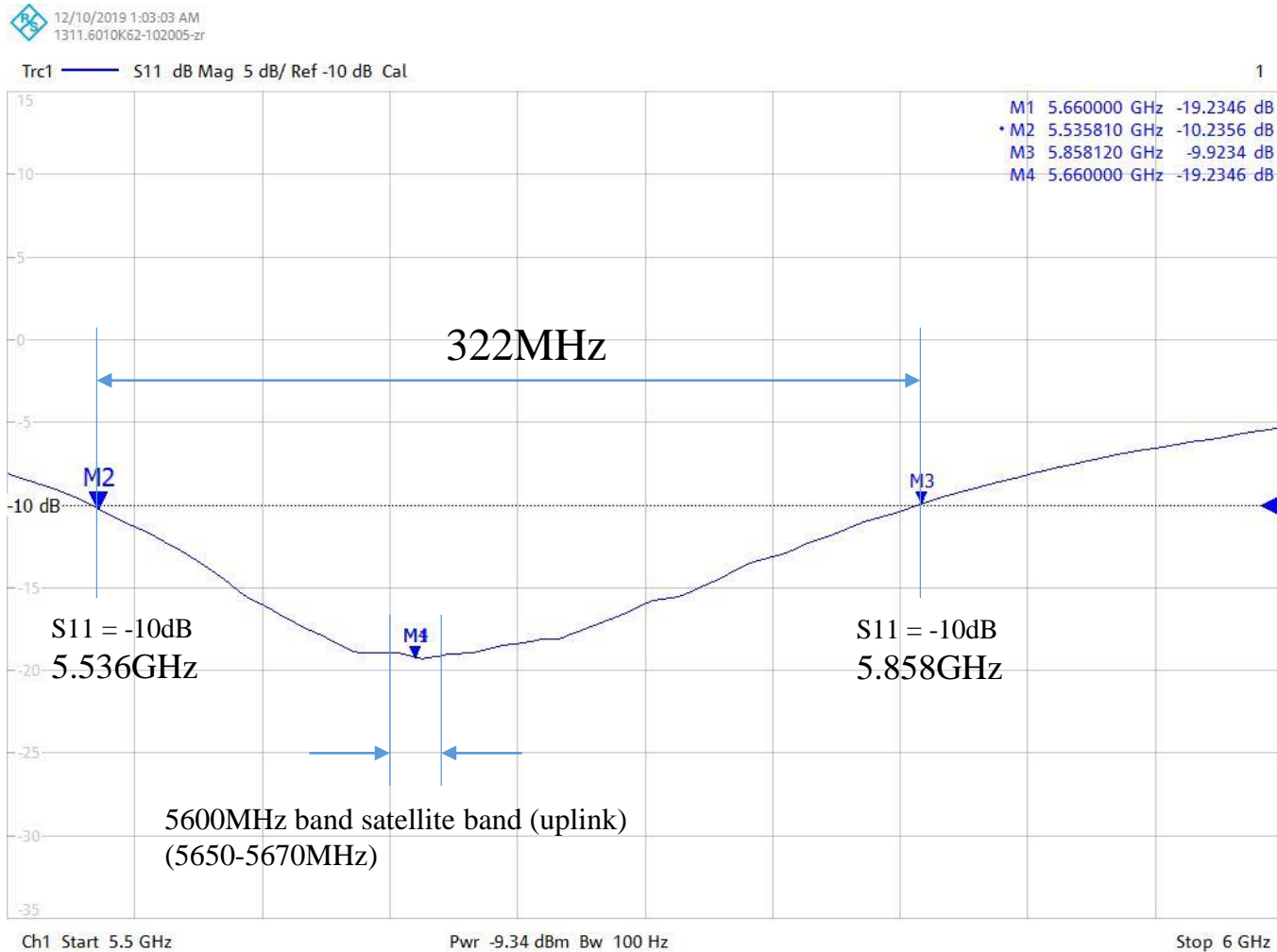
X-axis rotate



Y-axis rotate

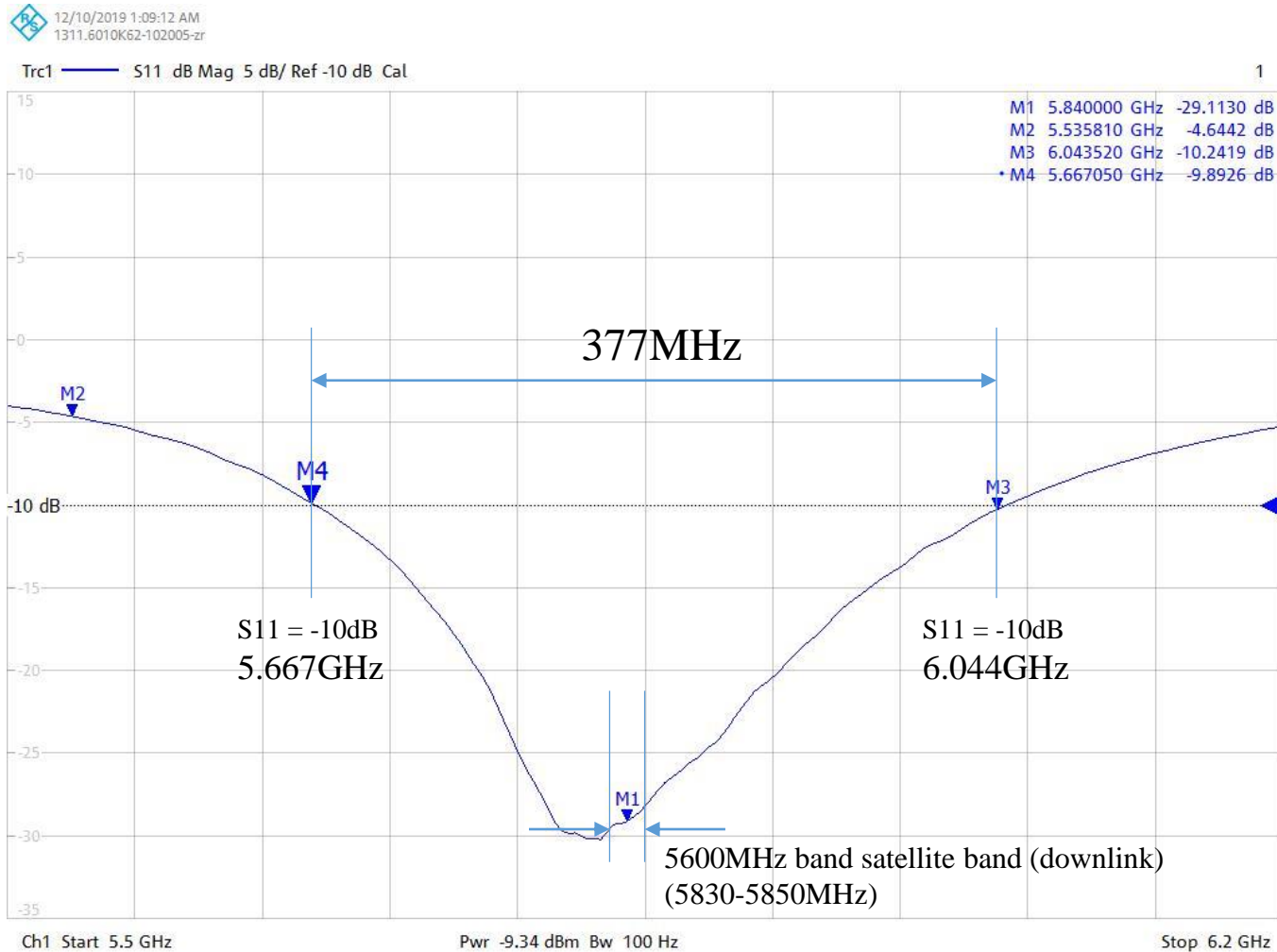


C-band return loss (5.66GHz)





C-band return loss (5.84GHz)





Non-Amateur band

400MHz-450MHz

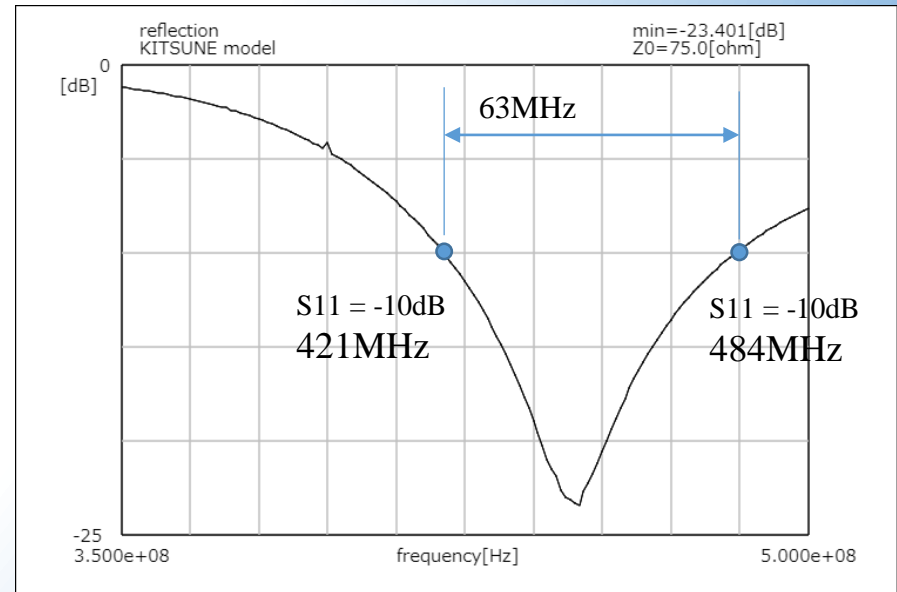
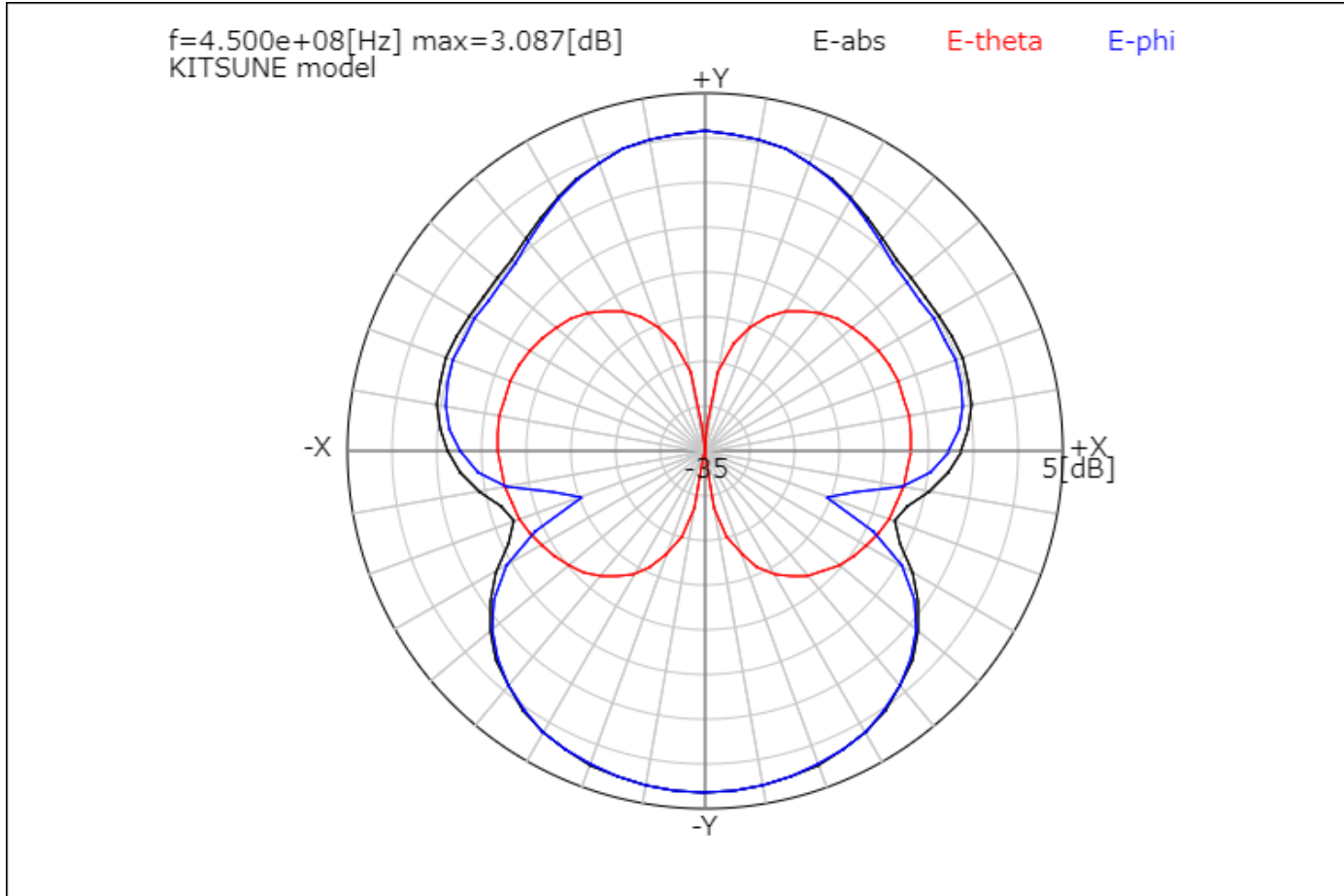
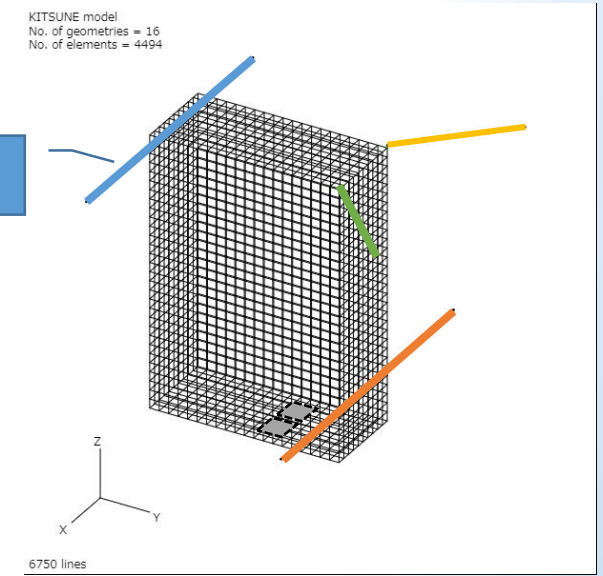
400MHz-433MHz

450MHz

SS Uplink



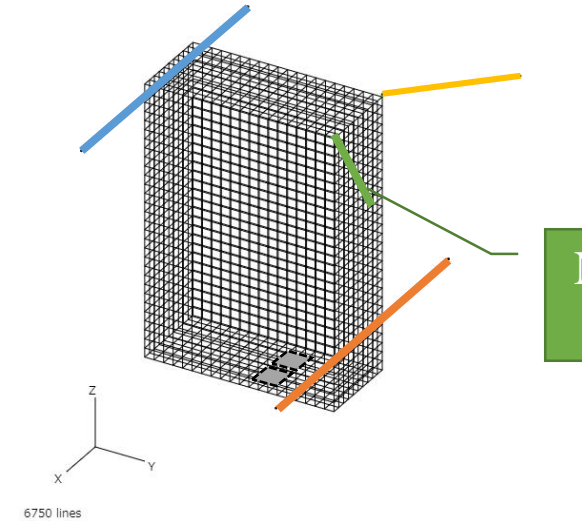
SS Uplink



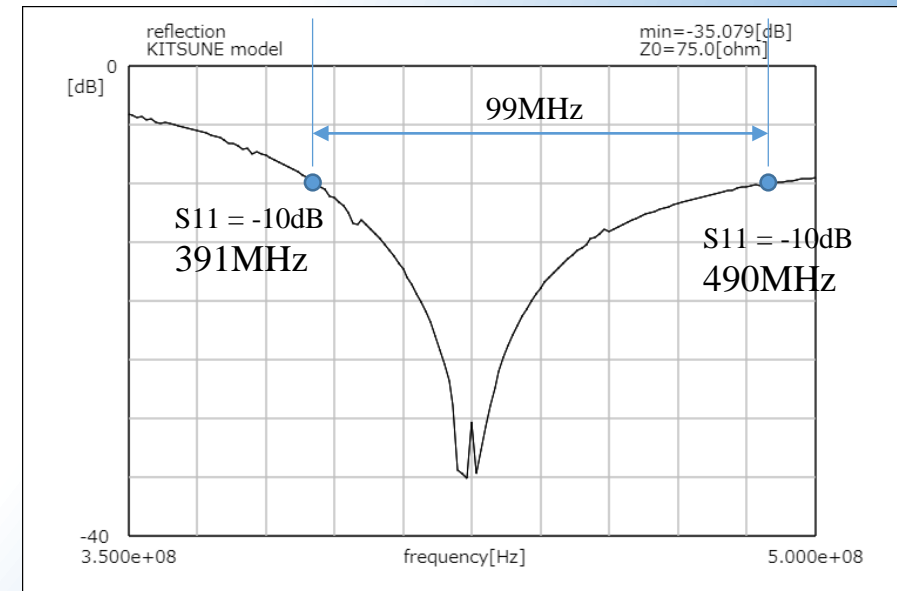
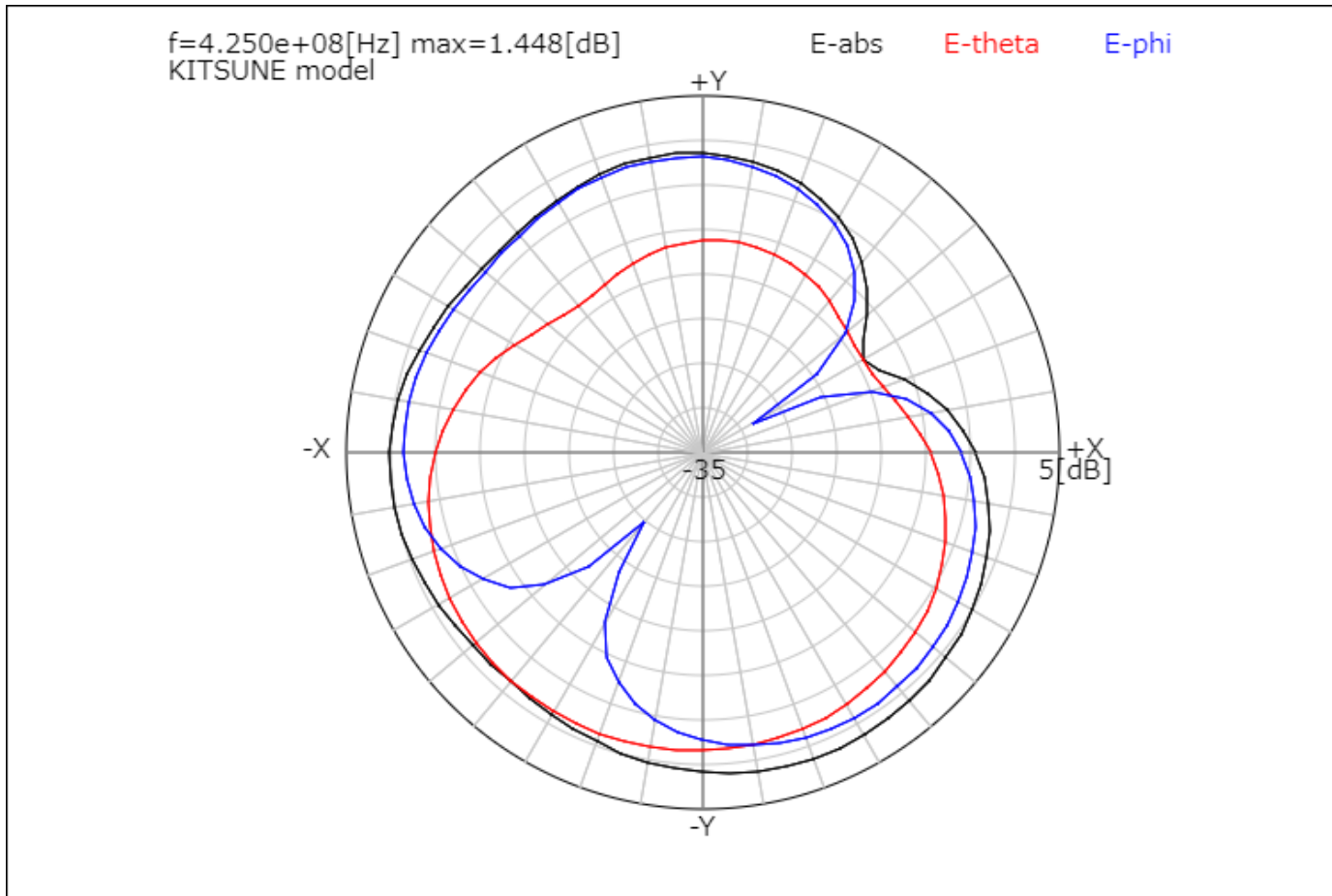
Non-amateur CMD&TLM



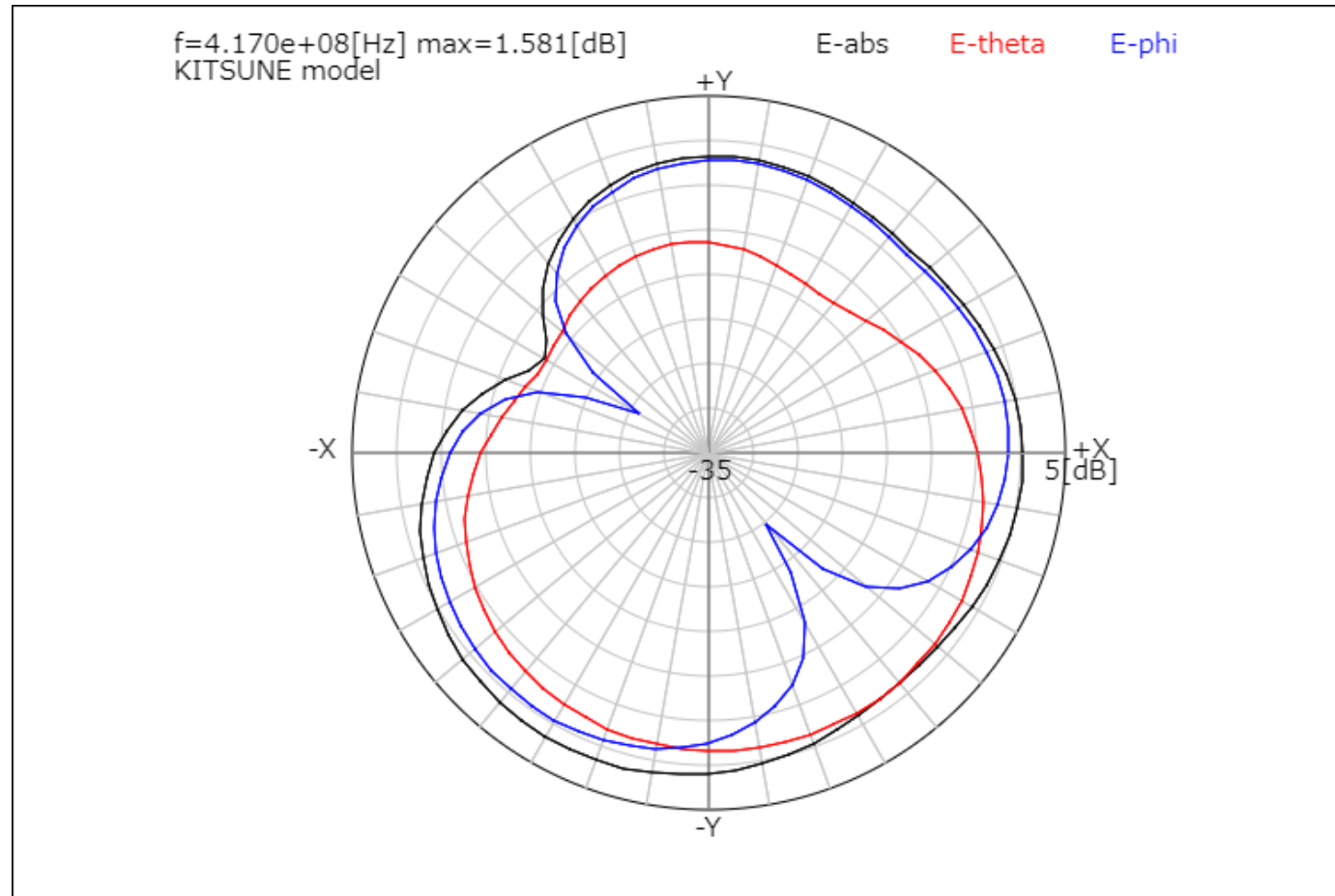
KITSUNE model
No. of geometries = 16
No. of elements = 4494



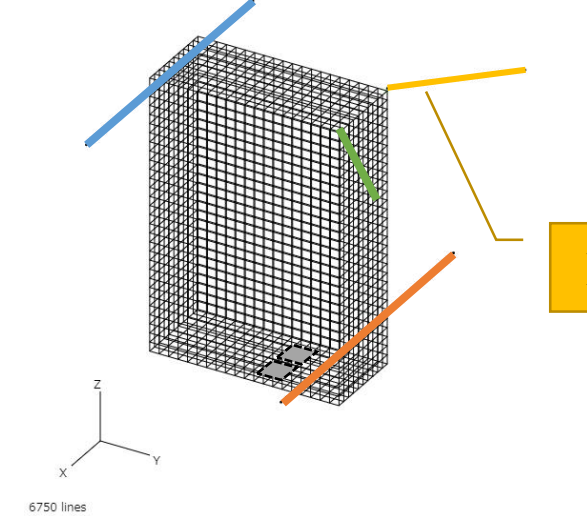
Non-Amateur
CMD&TLM



LoRa Uplink



KITSUNE model
No. of geometries = 16
No. of elements = 4494



LoRa Uplink

