Modulating Sine Wave: 1 kHz

Frequency of wave:

\[ f = \frac{c}{\lambda} = 10 \text{ GHz} \]

\[ \lambda = 3 \text{ cm} \text{ (measured)} \]

\[ f = 3 \times 10^8 \text{ m/s} \]

\[ c = 3 \times 10^8 \text{ m/s} \]

\[ \lambda = 0.03 \text{ m} \]

E-field is approximately on a horizontal plane.
B-field is on a vertical plane.
K1 - E & B Fields of Microwaves
(NEW EQUIPMENT)

- Thornton microwave generator
- Thornton amplifier power supply
- Tektronix AM-502 Differential Amplifier
- E & B microwave probes
- 2 long coax cables + 1 long harness cable
- Tektronix 465 scope
- 2 wooden wood block
- HP 3310A Function Generator (F62)
- Camera + camera mount + cables + switcher

Note: the differential amplifier picks up 60 cycles from power cords. It may need to be reoriented perpendicular to the cords or moved away from them!
Ed & Field's J's Model (NEW EQUIPMENT)

Settings for equipment:

- Tektronix 9350 Scope
  - CH 1: Volt/Div: 0.2
  - TRIG MODE: AUTO
  - COUPLING: AC
  - SOURCE: CH1

- Tektronix AM502 Differential Amplifier
  - BNC input to + , AC depressed
  - GAIN: 200

- Filter:
  - HF: 0.1 MHz
  - LF: 1 Hz

- Thorton Amplifier / Power supply
  - GAIN = 50 (actually settings useful unless Amp was for a speaker)

- H/P 3510A Function Generator
  - Function: Sine
  - Range: 100
  - Knob: 10
  - Output level: not exceeding 15 Vp-p
    (≈ 10 Vp-p is good)
For this demo, set up the same equipment as in K3 without the amp, speaker, and receiver.
In other words, just have the microwave generator and transmitter of the horn. This hook up E-field probe, B-field probe, and/or E-field probe w/ 1/4 wave reflector alternately to scope.
Scope settings (2):

20 mV/100 mV
0.5 mm/100 mm

E-field is approximately horizontal
H-field is vertical.