GeoRadar Division

GPR Low Frequency Configuration for deep investigation

RIS Configuration with Low Frequency Antennas

COMPONENTS:

- Data Logger (PC Panasonic CF 19 or other PC)
- Single Channel Control Unit (DAD 1CH)
- Very Low Frequency Unshielded Antennas: 25 and 40 MHz
- Low Frequency Shielded Antennas: 80 and 100 MHz
- Survey kit: Acquisition kit and Survey Wheel Kit

Data Logger: PC Panasonic CF 19

Data Logger: PC Hammerhead HF54

Single Channel Control Unit

Very Low Frequency Unshielded Antennas: 25 and 40 MHz

Low Frequency Unshielded Antennas: 80 and 100 MHz

VERY LOW FREQUENCY UNSHIELDED ANTENNA FEATURES

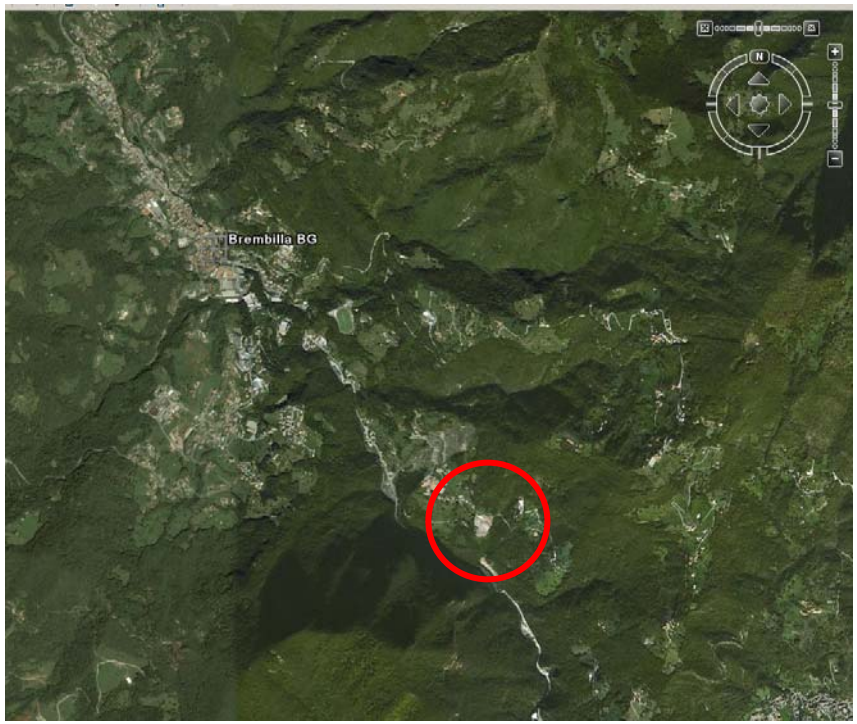
- Separated transmitter and receiver antennas (TX-RX spaced up to 1 meter).
- Antenna Type: Unshielded Dipole
- Nominal Frequency: 25 MHz and 40 MHz
- Configuration: Bi-static
- 25 MHz Antenna size (LxWxH): 400x120x55 cm
- 25 MHz Dipole size: 200x3,6 cm
- 40 MHz Antenna size (LxWxH): 274x120x55 cm
- 40 MHz Dipole size: 137x3,6 cm
- Weight: 18 Kg
- Relative humidity: <90% (non-condensing)
- Rain Proof (IP 65)
- Supplied with a mechanical moving kit and a 2m antenna cable
- Temperature: -40°C / 50°C

LOW FREQUENCY UNSHIELDED ANTENNA FEATURES

Separated transmitter and receiver antennas permit bi-static data collection (antennas can be spaced up to 1 meter apart).

- Antenna Type: shielded ground-coupled dipole
- Nominal Frequency: 80 and 100 MHz
- Configuration: Bi-static and mono-static
- 80 MHz Antenna Dimensions (LxWxH):
  140(max)x70x30 cm (bistatic)
  90x70x30 cm (monostatic)
- 100 MHz Antenna Dimensions (LxWxH):
  190(max)x45x30 cm (bistatic)
  90x70x30 cm (monostatic)
- Weight: 23 Kg (80 MHz), 22 Kg (100 MHz)
- Relative humidity: <90% (non-condensing)
- Rain Proof (IP 65)
- Supplied with AC100 cable and drag kit
- Sledge with 2 wheels and Survey wheel kit (Optional)
- Temperature: -40°C / 50°C

GPR Low Frequency investigation in a limestone quarry (1/2)



Brembilla Quarry -Italy

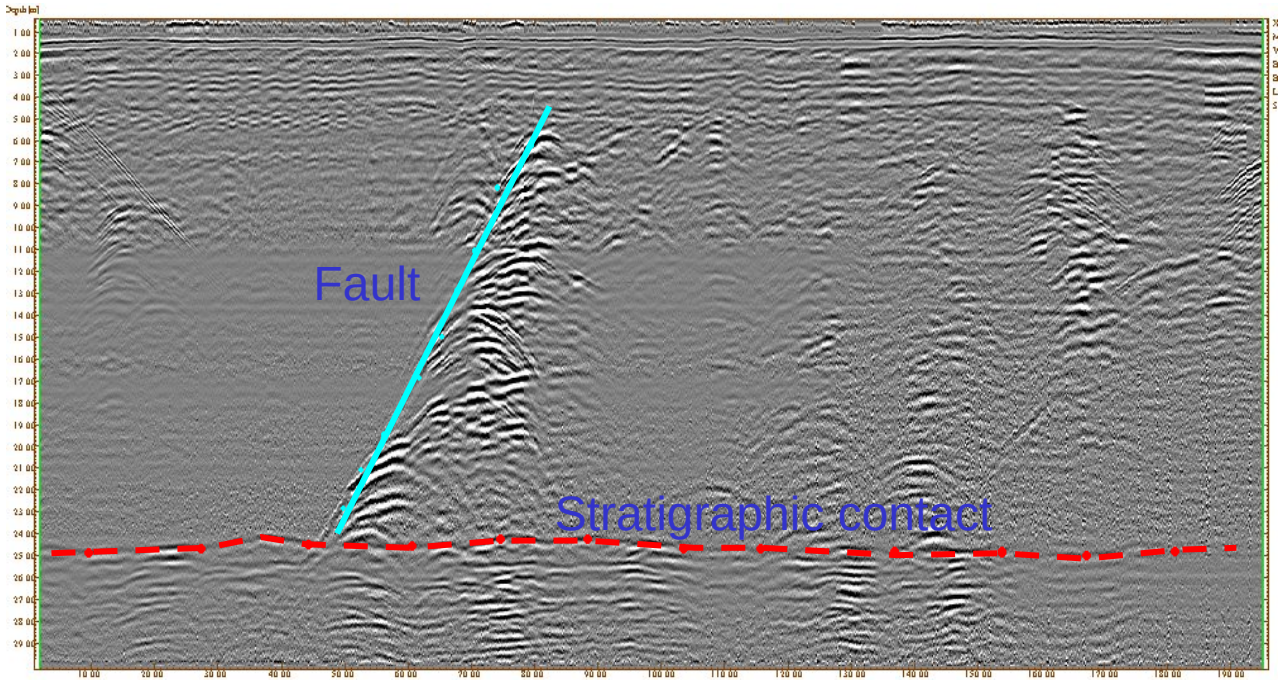
Geological application in a limestone quarry in Brembilla (Bergamo)- Italy:

- Study of the fractures and stratigraphy in a tunnel of the quarry to evaluate the rock stability.
- Used Configuration: RIS One with 80MHz Antenna

Brembilla Quarry – Italy

GPR Low Frequency investigation in a limestone quarry (2/2)

RIS Configuration with 80 MHz Shielded Antenna- Acquisition Phase



80 MHz Antenna Results

GPR Very Low Frequency investigation in a quarry (1/2)

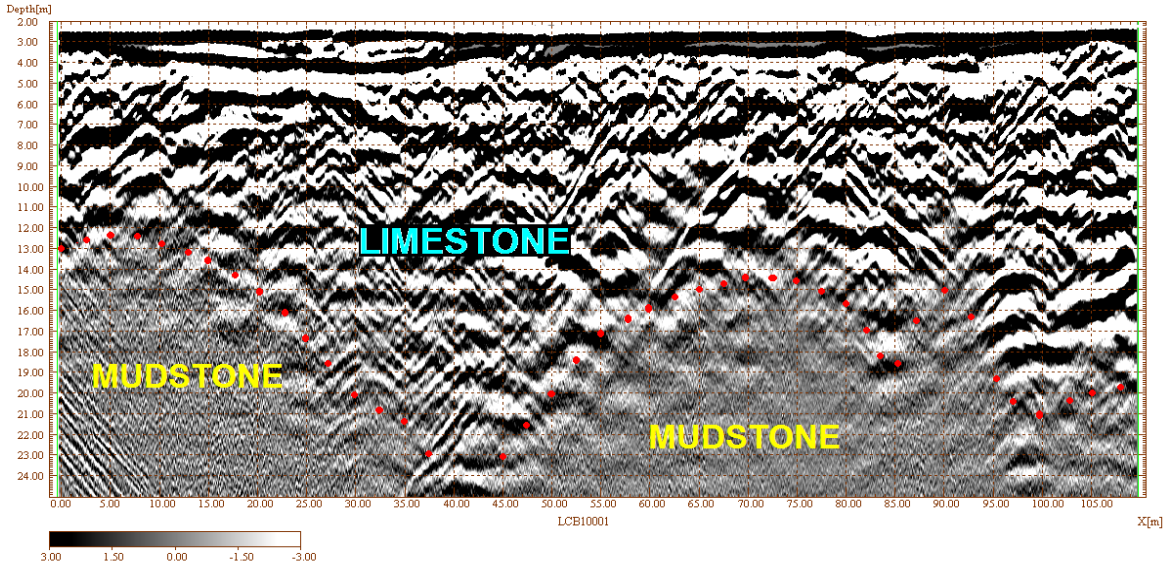
Vecchiano Quarry -Italy

Geological application in a limestone quarry in Vecchiano (Pisa)- Italy:

- Study of the stratigraphic contact between the limestone and the mudstone to evaluate the limestone thickness .
- Used Configuration: RIS One with 25MHz Unshielded Antenna

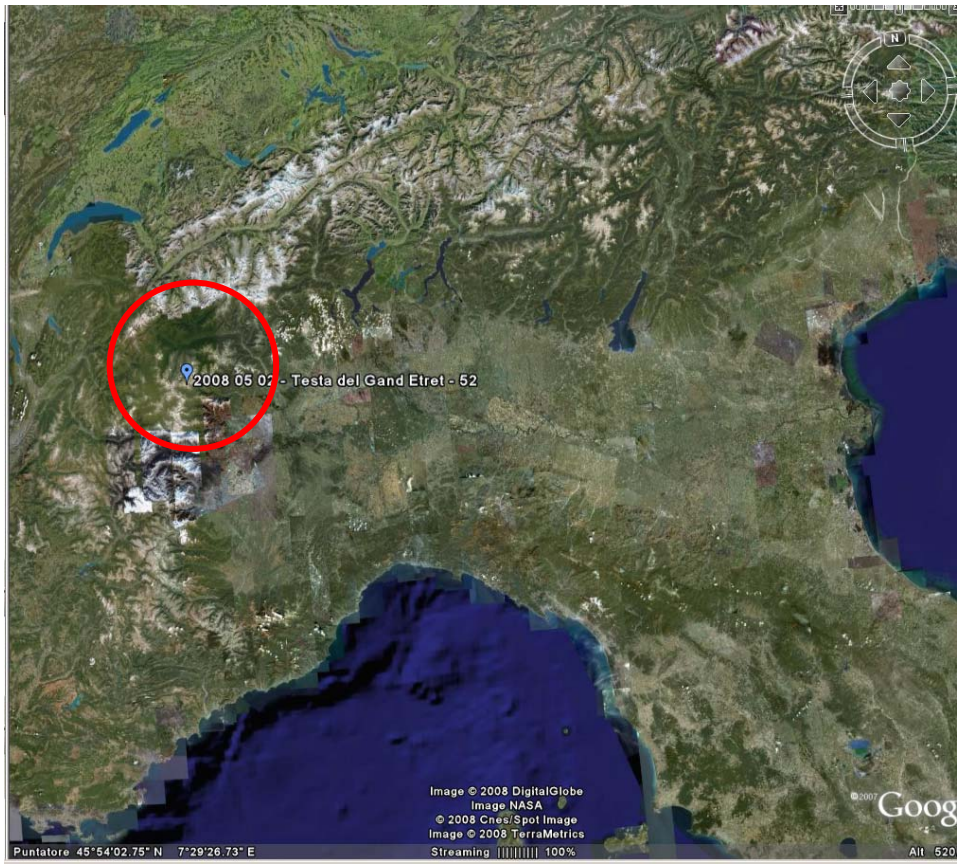
GPR Very Low Frequency investigation in a quarry (2/2)

RIS Configuration with 25 MHz Unshielded Antenna- Acquisition Phase



25 MHz Unshielded Antenna Results

GPR Very Low Frequency investigation in a glacier (1/2)



Grand Etret Glacier(Valle d'Aosta) - Italy

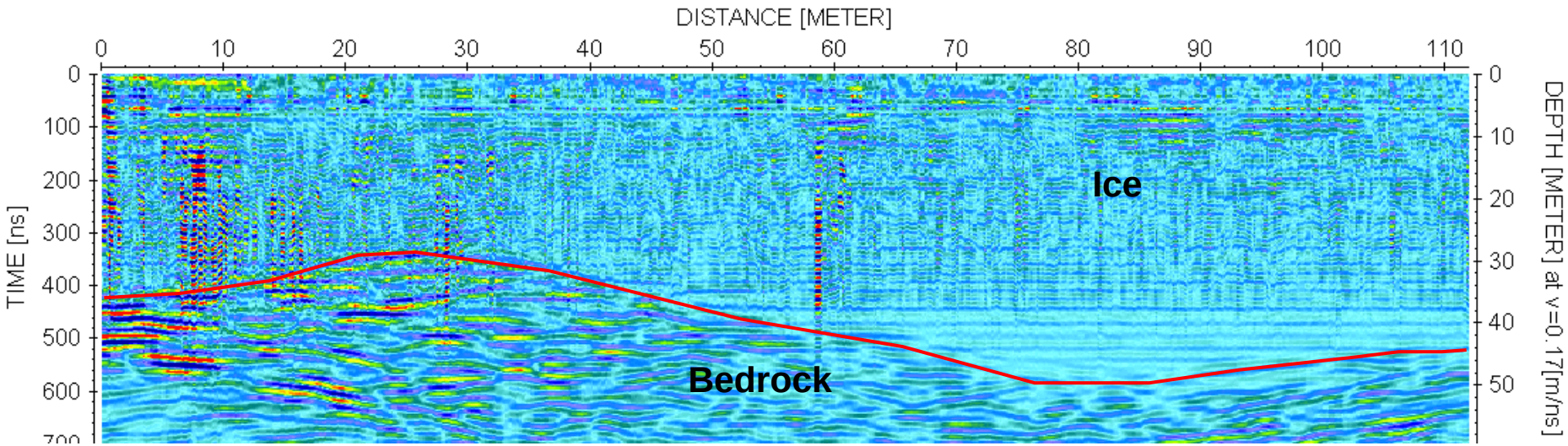
Geological application on the Grand Etrèt Glacier (Valle d'Aosta) - Italy:

- Study of the stratigraphic contact between the ice and the bedrock to evaluate the glacier mass balance.
- Used Configuration: RIS One with 25MHz Unshielded Antenna

Grand Etret Glacier (Valle d'Aosta) - Italy

GPR Very Low Frequency investigation in a glacier (2/2)

25 MHz Unshielded Antenna Results



RIS Configuration with 25 MHz Unshielded Antenna- Acquisition Phase

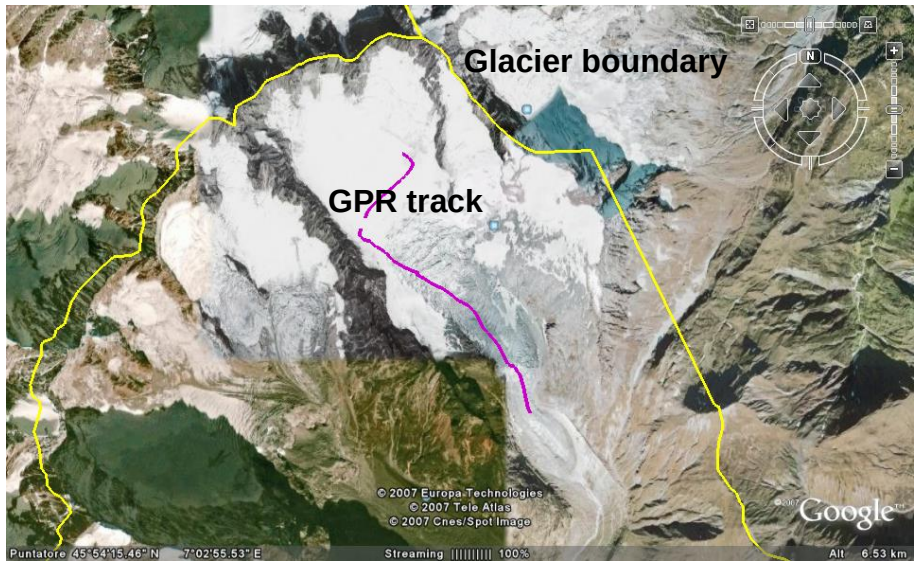
IDS INGEGNERIA DEI SISTEMI

GPR Low Frequency investigation in a glacier (1/2)

Pre de Bard Glacier (Valle d'Aosta) - Italy

Study of the Pre de Bard Glacier (Valle d'Aosta – Italy) to define:

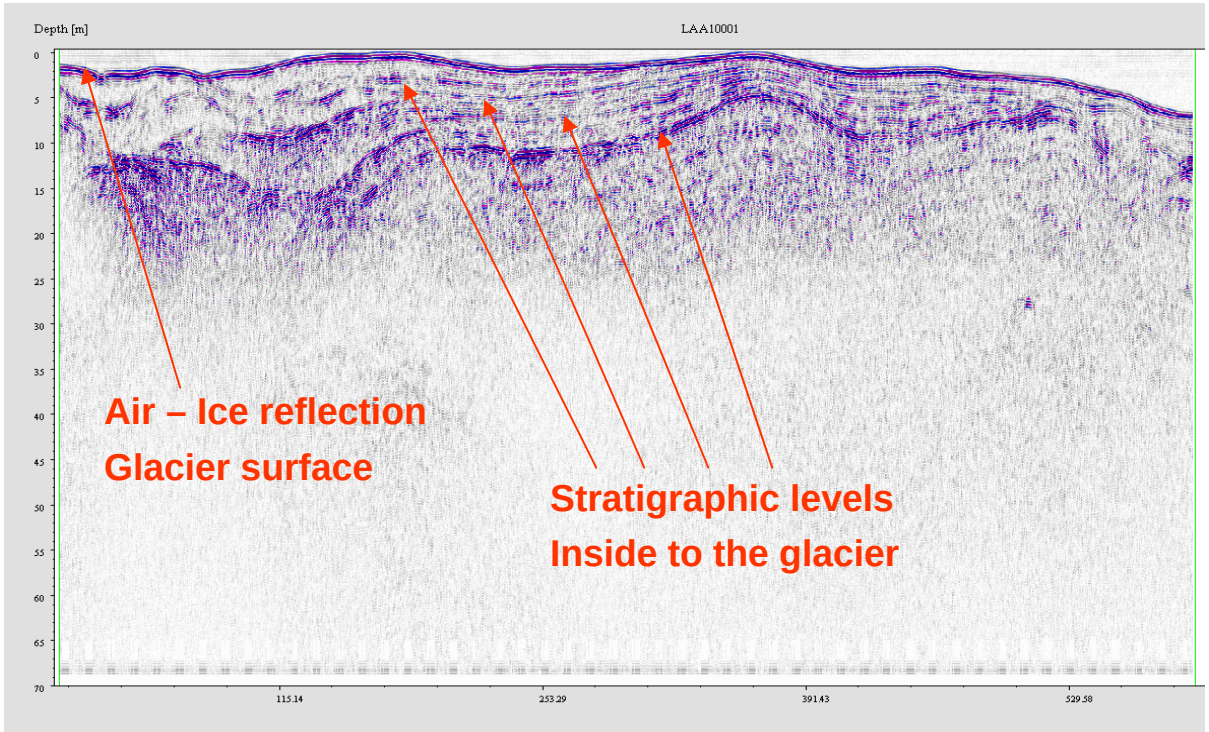
- Glacier Internal stratigraphy
- Presence of erratic stone
- Presence of crevasse
- Used Configuration: RIS One with 100MHz Shielded Antenna - Survey by helicopter.



Pre de Bard Glacier (Valle d'Aosta) - Italy

GPR Low Frequency investigation in a glacier (2/3)

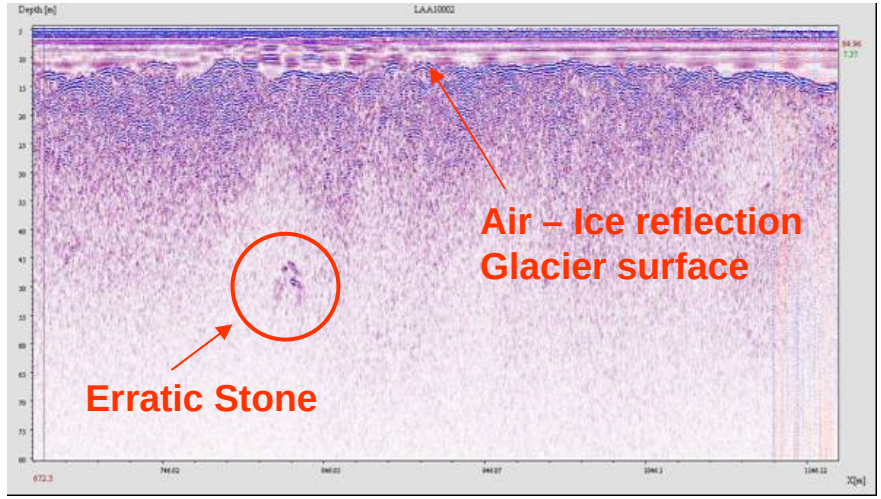
RIS Configuration with 100 MHz Shielded Antenna- Acquisition Phase



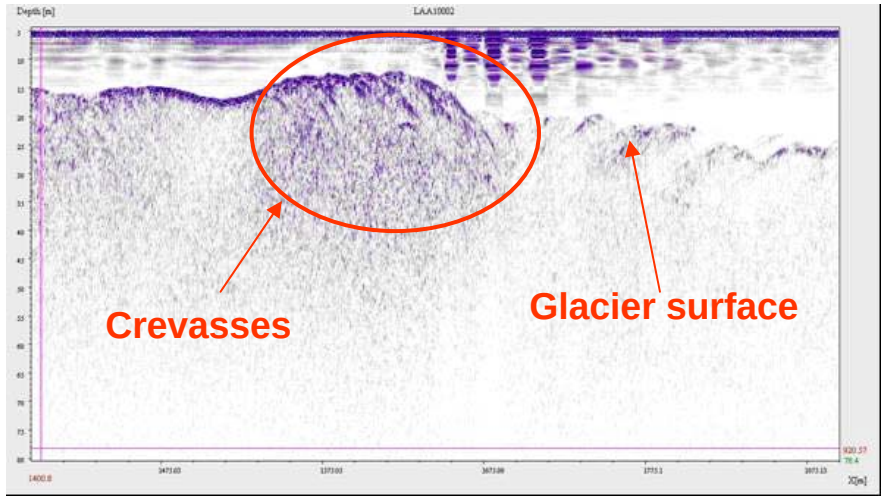
100 MHz Shielded Antenna Results

GPR Low Frequency investigation in a glacier (3/3)

RIS Configuration with 100 MHz Shielded Antenna- Acquisition Phase



100 MHz Shielded Antenna Results



100 MHz Shielded Antenna Results