

High-frequency Magnetic Probe

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1. Objective

Objectives are measurement of high-frequency waves, e.g. waves excited by ICRF antennas or waves excited by high-energy particles.

2. Apparatus

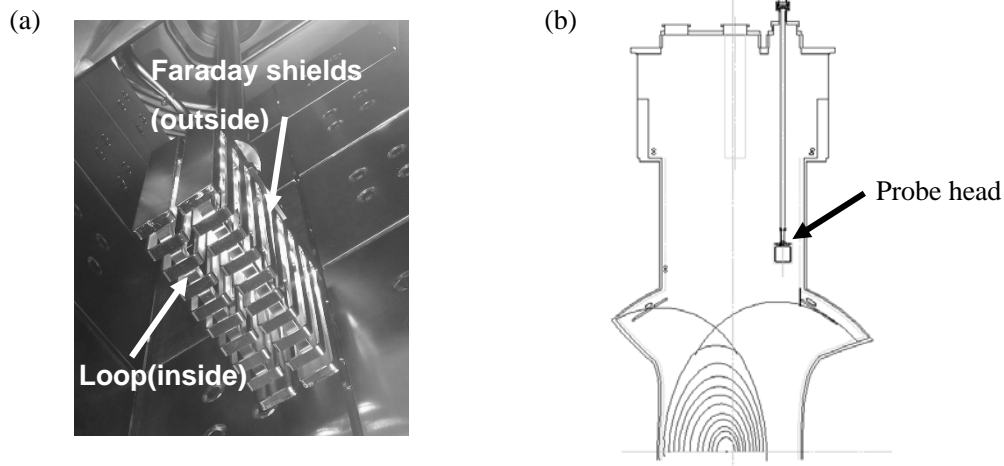


Fig. 1. (a) One pair of High-frequency Magnetic Probes. (b) Location of probes.

Probe head is one-turn loop with Faraday shield. Two loops are paired with different turn direction.

Frequency range: approximately 10 kHz-1 GHz

Loop size: 15 cm×15 cm

Installation ports: 5.5U and 6.5U ports

3. Data acquisition

3.1. LABCOM

Name of diagnostics: “ICH-ICE” and “ICH-ICE2”

ICH-ICE: measurement up to ≈ 100 MHz, e.g. 8 bit, 4 ch, 250 MS/s for 5 s

ICH-ICE2: measurement up to ≈ 1 GHz, e.g. 16 bit, 2 ch, 2.5 GS/s for $20 \mu\text{s} \times 5001$ points

Name of signal (ICH-ICE): “5.5u-neg.”, “5.5u-pos.”, “6.5u-neg.”, “6.5u-pos.”

Name of signal (ICH-ICE2): “5.5u-pos.”, “6.5u-pos.”

3.2. Analysis data server

FFT data for ICH-ICE and ICH-ICE2 are uploaded to analysis data server.

References

- [1] K. Saito, et al., Plasma Science and Technology 15 (2013) 209.
- [2] K. Saito, et al., Plasma and Fusion Research 13 (2018) 3402043.