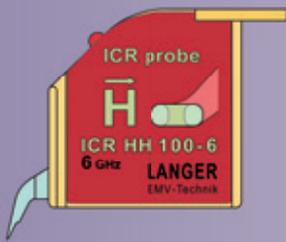


## Overview

ICR Near-Field Microprobes





# ICR

Near-Field Microprobe

**LANGER**  
EMV-Technik

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2020-03-17 GM

## Short Description

The ICR probes are used to measure magnetic or electric near fields. A preamplifier is integrated in the probe housing, which is powered by the BT 706 bias tee. Adjustment screws on the housing allow manual alignment of the probe tip to the probe housing. The probe supports the collision protection function of the Langer scanners, which stops the movement during vertical travel if the device under test is touched. The housing can also be mounted on commercially available testers.

**Attention!** The tip is very sensitive to impact due to its construction, therefore we recommend positioning the probe through an automatic positioning system.

## Technical Parameters

Frequency range	0.5 MHz up to 6 GHz
Resolution	60 µm up to 300 µm
Internal diameter / electrode surface area	see overview probe types

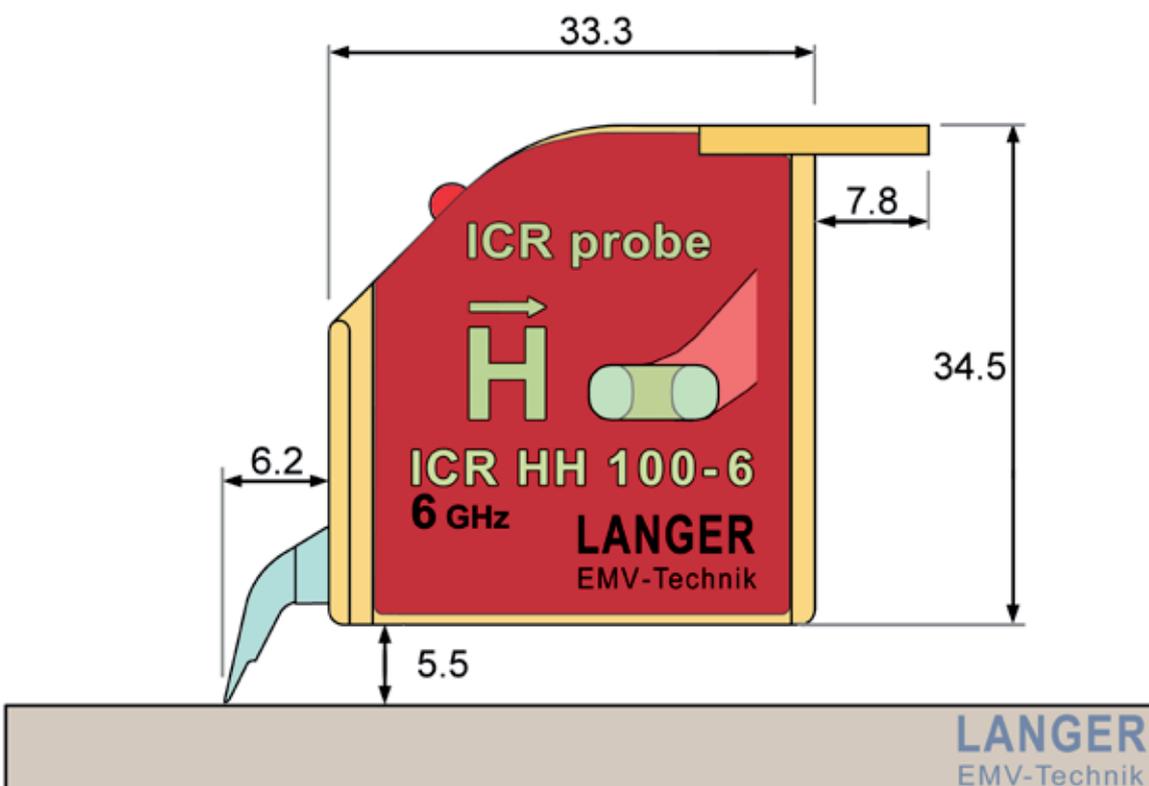
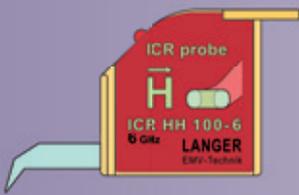


Image 1: Example of ICR near-field microprobe with normal probe tip (schematic)





# ICR Ls

Near-Field Microprobe  
with extended probe tip

## Short Description

The ICR Ls is manufactured with an extended probe tip according to customer requirements.

- for customer-specific measurement set-up

## Technical Parameters

Max. horizontal distance from coil to probe body	24 mm
Resolution	according to product portfolio of Langer EMV-Technik
Internal diameter / electrode surface area	according to product portfolio of Langer EMV-Technik

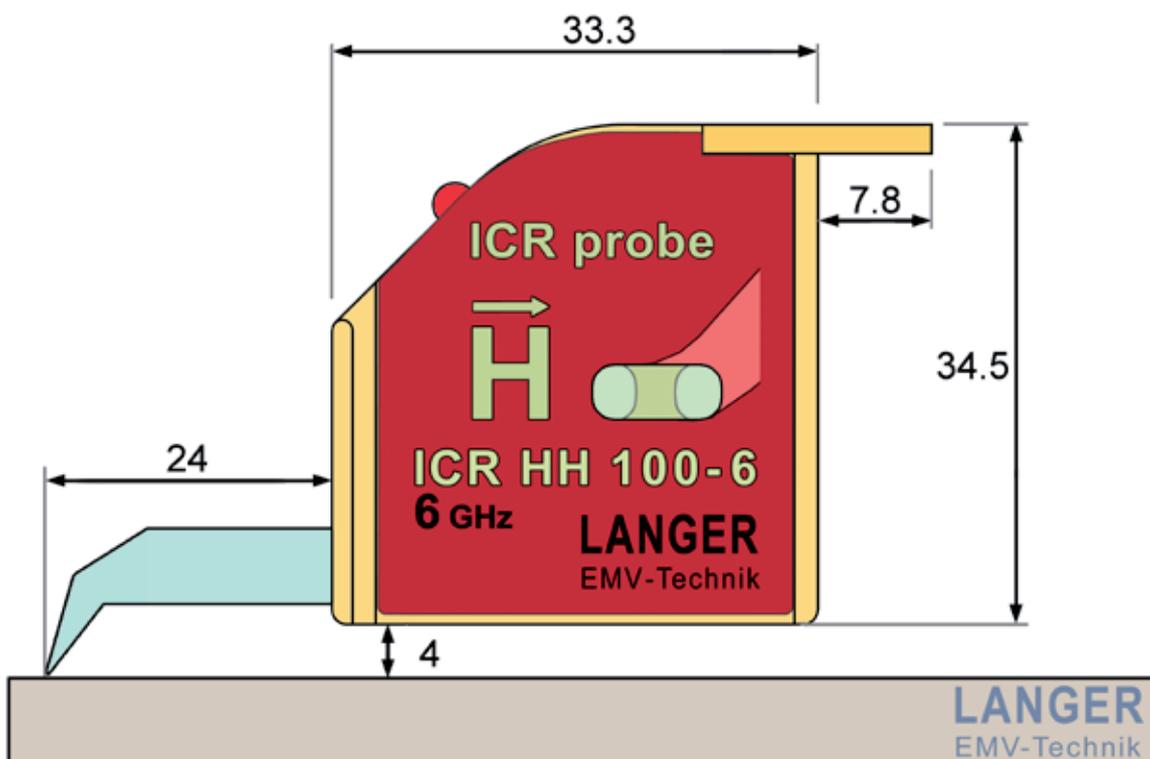
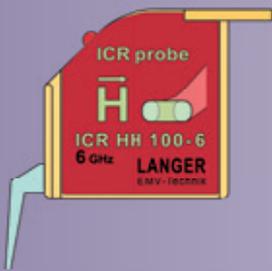


Image 1: Example of ICR near-field microprobe with extended probe tip (schematic)





# ICR Ds

Near-Field Microprobe  
with deeper probe tip



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## Short Description

The ICR Ds is manufactured with a deeper probe tip according to customer requirements.

- for customer-specific measurement set-up

## Technical Parameters

Max. vertical distance from coil to lower edge of the probe body	40 mm
Resolution	according to product portfolio of Langer EMV-Technik
Internal diameter / electrode surface area	according to product portfolio of Langer EMV-Technik

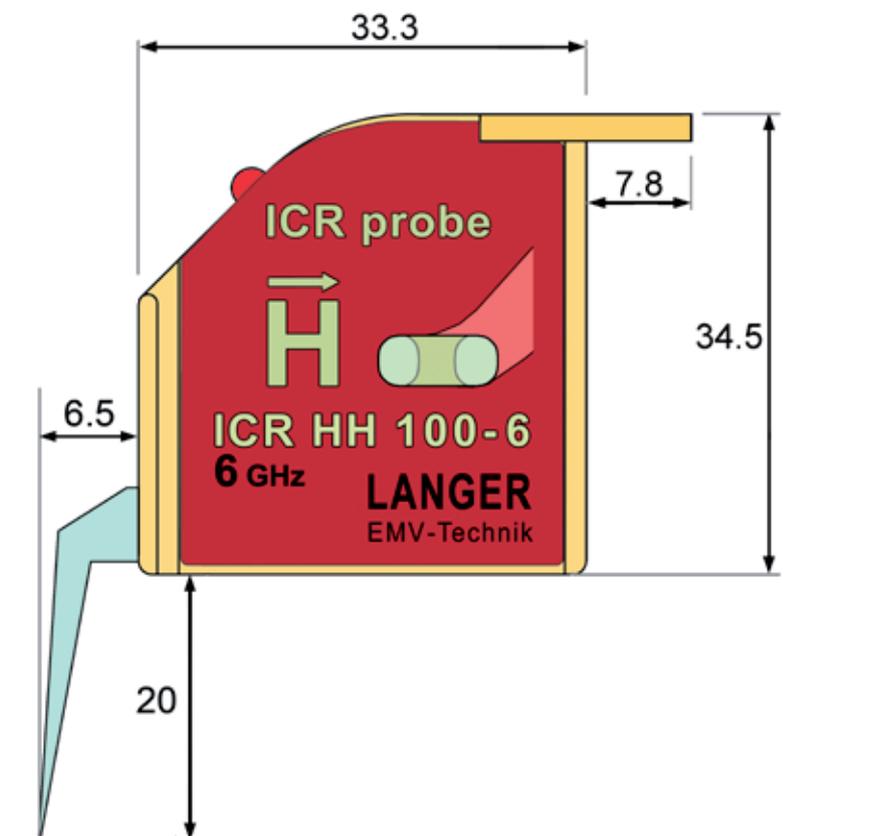


Image 1: Example of ICR near-field microprobe with deeper probe tip (schematic)

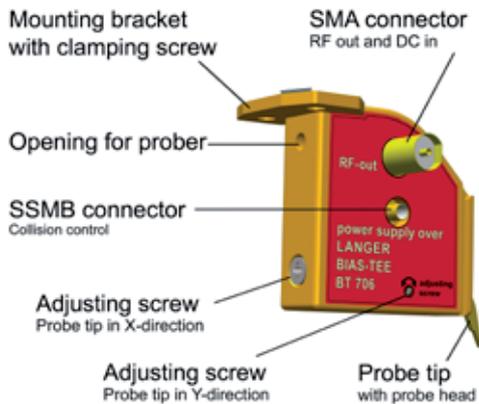




# ICR Near-Field Microprobes - Design and Descriptions -

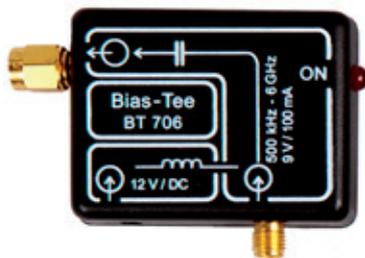
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## Design

- Probe housing with integrated preamplifier
- Adjusting screws
- Probe tip with probe head
- SMA output
- SSMB output
- Mounting bracket with clamping screw for fixation on the prober

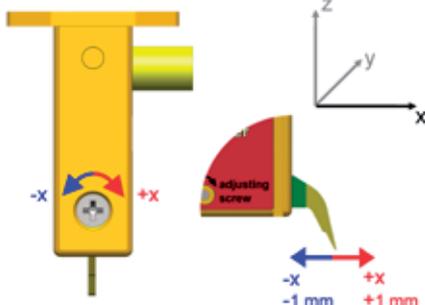


Use ICR probes  
only with BT 706 Bias Tee

## BT 706 Bias Tee

The Bias tee is used for the power supply of ICR near-field microprobes and stabilizes their voltage supply (9 V, 100 mA). The bias tee is inserted into the signal path between the active near-field probe and the spectrum analyzer or oscilloscope and powered by a plug-in power supply. Frequency range: 500 kHz to 6 GHz  
Connector: SMA  
Supply voltage: 12 V / 70 mA plug-in power supply

Adjusting screw for moving  
the probe tip in +x and -x - direction

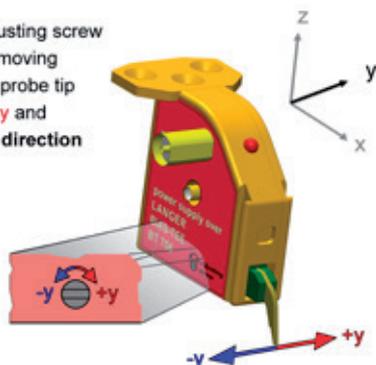


## Adjusting screw for X-direction

The adjustment screw on the back of the ICR probe is used to adjust the probe tip in the x-direction (see diagram).

The adjustment travel is  $\pm 1$  mm.

Adjusting screw  
for moving  
the probe tip  
in +y and  
-y - direction



## Adjusting screw for Y-direction

The adjustment screw on the left side of the ICR probe is used to adjust the probe tip in the y-direction (see diagram).

The adjustment travel is  $\pm 1$  mm.

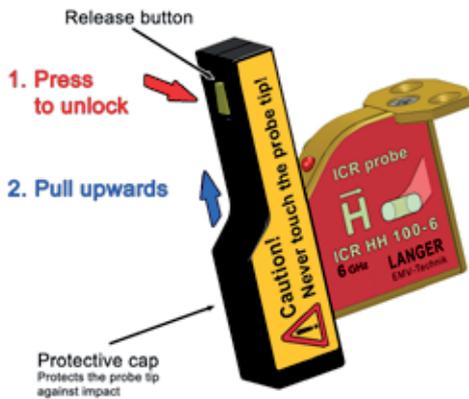




# ICR Near-Field Microprobes - Design and Descriptions -

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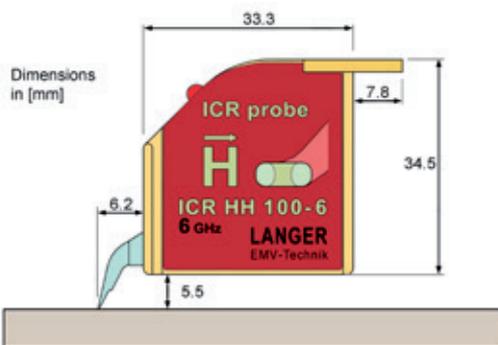
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## Protective cap

The removal of the protective cap is shown in the figure on the left. The protective cap should only be removed for measurements and should always be re-attached when the probe is not in use.

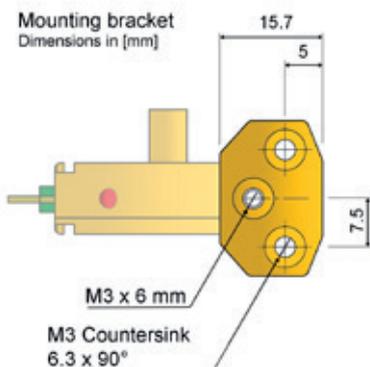
The underside of the protective cap is open, so care must be taken to ensure that nothing penetrates the inside of the protective cap from below. Otherwise damage to the probe tip cannot be ruled out.



## View - side view

Information on:

- Probe type (here: ICR HH 100-6)
- Resolution (here: 100  $\mu$ m)
- Frequency range (here: 6 GHz)
- Orientation (here: horizontal)

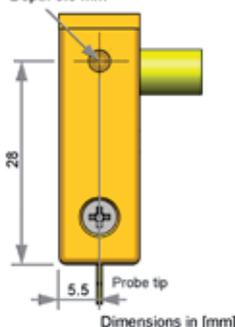


## View - top view

An ICR probe can be attached to a Langer scanner via the mounting bracket.

Opening for prober

$\varnothing$  3 mm  
Depth 5.5 mm



## View - rear side

Alternatively, the ICR probe can be installed on a micro manipulator. For this purpose, the opening on the back below the mounting bracket is available.

The clamping screw is used for fixation.





# ICR Near-Field Microprobes - Overview Probe Types -

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Type	Inner Diameter	Orientation		Measuring Range
ICR HV 100-27	100 µm		vertical	1.5 MHz to 6 GHz
ICR HV 100-6				2.5 MHz to 6 GHz
ICR HH 100-27	100 µm		horizontal	1.5 MHz to 6 GHz
ICR HH 100-6				2.5 MHz to 6 GHz
ICR HV 150-27	150 µm		vertical	1.5 MHz to 6 GHz
ICR HV 150-6				2.5 MHz to 6 GHz
ICR HH 150-27	150 µm		horizontal	1.5 MHz to 6 GHz
ICR HH 150-6				2.5 MHz to 6 GHz
ICR HV 250-75	250 µm		vertical	500 kHz to 2 GHz
ICR HV 250-6				2.5 MHz to 6 GHz
ICR HH 250-75	250 µm		horizontal	500 kHz to 2 GHz
ICR HH 250-6				2.5 MHz to 6 GHz
ICR HV 500-75	500 µm		vertical	500 kHz to 1 GHz
ICR HV 500-6				2 MHz to 6 GHz
ICR HH 500-75	500 µm		horizontal	500 kHz to 1 GHz
ICR HH 500-6				2 MHz to 6 GHz
ICR E 150	150 µm x 35 µm		horizontal	7 MHz to 3 GHz

