

## RF-THz 200mm Manual Prober Specifications

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Public

## Former events

Object of the modifications	Date	Version
Initial Version	17/07/2025	1.0
Corrections	23/07/2025	1.1
Corrections#2	25/07/2025	1.2

## Abstract

This document presents the technical specifications for purchase of a 200mm general purpose RF/mmW prober with THz capabilities

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# 1. Context

## 1.1. Scope

The LAIR Laboratory of CEA/LETI is a design team of 30ish people focusing on various RF topics and market targets.

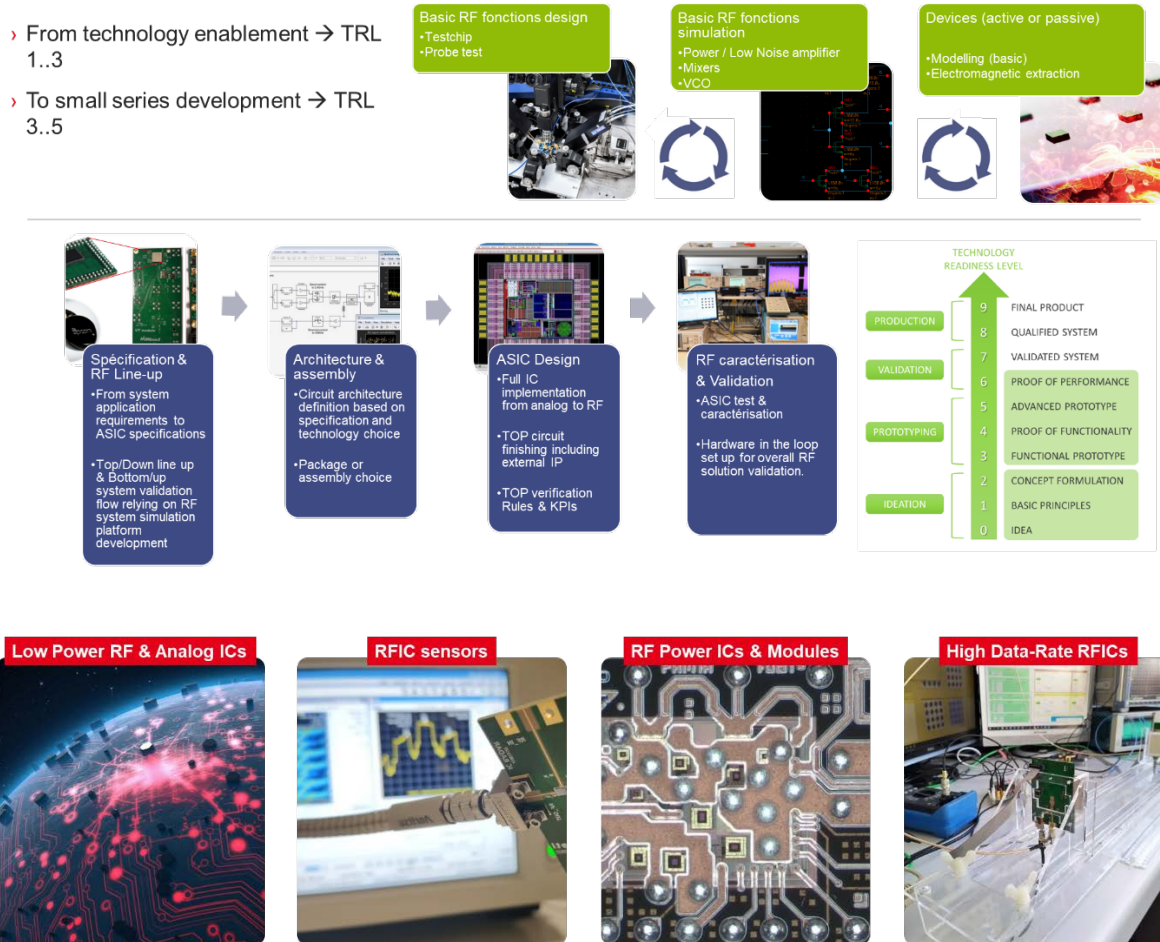


Figure 1: LAIR scope of activities

Our products frequency range spread from sub-6GHz to THz and our characterization volume is around 10 prototypes per year. Current Lab configuration already has 4 probers, 2 of them being dedicated to RF (including one semi-automatic with THz Head Micropositioners).



Figure 2: existing RF dedicated probers

These probers have critical occupation schedules and we wish to add a manual probers that fits all of our applications.

The users that are manipulating are RF design engineers, familiar with basics on-wafer measurement but not experts.

## 1.2. Lab environment

### 1.2.1. Facilities

The Lab has vacuum and compressed air capabilities available.

### 1.2.2. Dimensions

The Prober is meant to be hosted on a Thorlabs PFP6090-7 table (size 610x1190 mm).

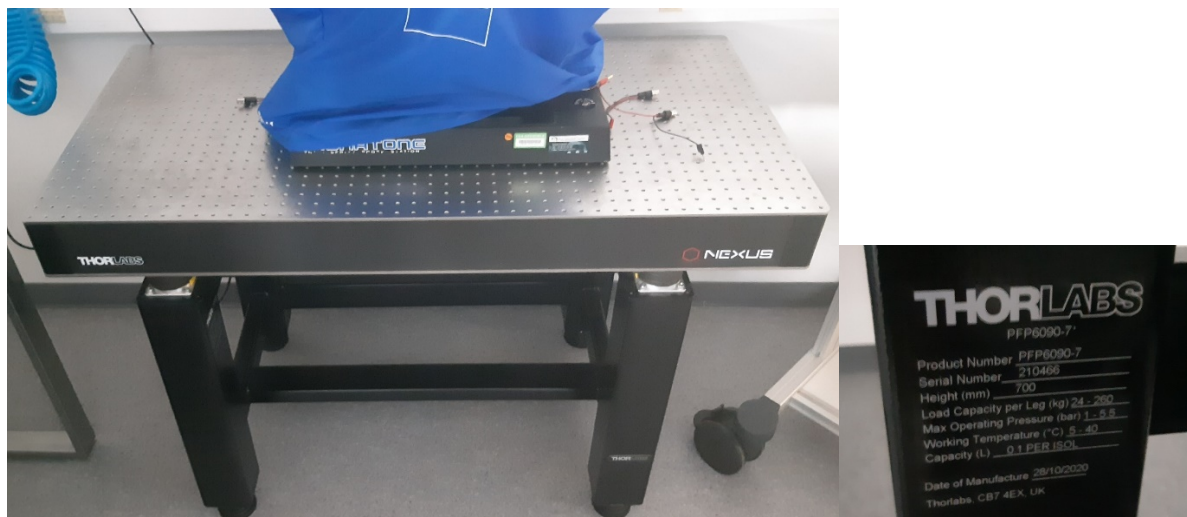


Figure 3: Prober table

### 1.2.3. THz heads used

Supplier	Model	Photograph
R&S	ZC170	
	ZC330 (same size)	
VDI	CCD	

SAX



SGX



MixAMC-I



Table 1: THz heads list



## 2. Technical Specifications

### 2.1. Asked features

The desired Prober features are summarized on the following table:

Feature	Spec/qty	mandatory	comment
<b>Chuck</b>			
Chuck size	200 mm	Yes	Manual positioning and Z-contact
Thermal Chuck	0	No	Ambient measurements only
Chuck connection	Coaxial	Yes	Triaxial ok but not mandatory
Cal Substrate auxiliary sites	1	Yes	2nd extra site, or cleaning site nice to have but not mandatory
<b>Optical</b>			
Electronic camera	1	Yes	Binocular not needed
Min size of the interest objects	20-30 um (THz pads)	Yes	Priority to the min observable size.
Max size of the interest objects	X≈3mm/Y≈2 mm (chip)	No	
Software	/	No	Image Capture feature nice to have
<b>Calibration features</b>			
Calibration software	1	No	Nice to have
X/Y Contact repeatability feature	/	Yes	Either software aided alignment or measurement of critical micro positioner position (x – east for example).
X/Y Contact repeatability feature	1	Yes	Measurement of Z height.
<b>Micropositioners</b>			
THz head	2 (1 of each)	Yes	East-West (see 1.2.3 for compatibility specs)
RF (up to 67 GHz)	2 (1 of each)	Yes	North-South (screwed or magnetic, no vacuum)
<b>Included accessories</b>			
Probes GSGSG-100 um (DC-67GHz)	2	Yes	1.85mm connectors.
Probes GSG - 100 um (DC-67GHz)	2	Yes	1.85mm connectors.
Calibration Substrate single	1	Yes	GSG-100um
Calibration Substrate differential	1	Yes	GSGSG-100um

Table 2: Asked features

### 2.2. options

This equipment list has to be quoted independently (price and delivery date for each item). Items can be independently chosen by the CEA in any multiple of requested quantity.

Option #	Feature	Qty per batch	comment
<b>Micropositionners</b>			
1	RF (up to 67 GHz)	2 (1 of each)	East-West (magnetic, not screwed or vacuum)
2	RF (up to 67GHz)	2 (1 of each)	North-South (magnetic, not screwed or vacuum)
<b>Cables and adapters 67GHz</b>			

3	Cables DC-67GHz	2	Have to be paired two by two. 1.85mm connectors. 1.5m length. One straight connector (Female), one 90°(Male)
	V-K Adapters	2	Male 2.92mm to Female 1.85mm
	K-V Adapters	2	Female 2.92mm to Male 1.85mm
<b>Cables and probes 40GHz</b>			
4	Cables DC-40GHz	2	Have to be paired two by two. 2.92mm connectors. 1.5m length. One straight connector (Female), one 90°(Male)
	GSGSG-100um	1	2.92mm connectors. DC-40 GHz
	GSG-100um	1	2.92mm connectors. DC-40 GHz
<b>Probes 67GHz</b>			
5	Probes GSGSG-100 um (DC-67GHz)	2	1.85mm connectors.
	Probes GSG - 100 um (DC-67GHz)	2	1.85mm connectors.

**Table 3: Options**

### 3. General observations

All equipment has to be CE certified (electrical and machines standards).

The equipment must be received by December 10, 2025. Failure to comply with this minimum requirement will result in the bidder's offer being rejected.

The supplier can propose either a remote (Visio conference) demonstration or on-site presentation (with or without equipment) of its offer between the 1<sup>st</sup> and 9<sup>th</sup> of September 2025 (not mandatory).

For each visiting person from the supplier the following table must be filled and a two-sided copy of ID card/passport should be provided more than one week before the visit for UE citizen, more than 3 weeks before the visit for non-UE.

Thank you for completing every column with the information required. Thanks for sending a two-sided copy of your ID card/passport.									
Last name	First Name	Maiden Name (for women)	Sex M/F	Birth date Day/Month/Year	Place of Birth	Country of Birth	Nationality	Company	Position

**Table 4 Visit table**