9. 200 KW 175MHZ CW SSPA + CAVITY COMBINER + LLRF

Name of the infrastructure	200 kW 175 MHz CW SSPA + cavity combiner + LLRF
Location of infrastructure (town, country)	Madrid, Spain
Web site address	http://www.ciemat.es
Legal name of organization operating the infrastructure	CIEMAT, Centro de Investigaciones Energéticas Mediambientales y Tecnológicas
Location of organization (town, country)	Madrid, Spain
Key Accelerator Research Area(s)	RF power systems for accelerators, accelerator components RF conditioning, high power testing of RF components
General description of the infrastructure	Solid-state high efficiency demonstrator for the IFMIF-DONES RF Power System
Already existing or planned	Planned
Unique features	Solid state technology using high efficiency cavity combiner
Present situation/future changes/expected lifetime	Under design and development
Accelerator infrastructure or component test infrastructure	Accelerator infrastructure (RF source prototype)
Shared facility/infrastructure	Yes
Main user community	RF systems for accelerators
Open for external users	yes
If open to external users: Modality of access to the infrastructure (access unit)	There are different modalities to access the facility like a “Service Contract” or a “Collaboration Agreement” among others
Number of access units available for external users	Depending on the availability of the part of the installation needed
If open to external users: Support offered by the organization operating the infrastructure	The equipment is under the responsibility of the CIEMAT, which are in charge of the operation, maintenance and safety issues. CIEMAT agrees to provide the personnel to ensure these functions.
Review procedure for requested access	Either after discussion with CIEMAT, or in the frame of an international contract, European or else
How to apply	By contacting the responsible
Can the infrastructure be made available?	yes
If YES, fraction of time that could be made available (%)	Depending on the internal projects going on, and on the facility needed.
Contact details (name, Institute, email,)	Cristina de la Morena / David Regidor Fusion Technology Division Avenida Complutense, 40 28040, Madrid cristina.delamorena@ciemat.es / david.regidor@ciemat.es Tel.: +34 91 496 2600/ +34 91 346 6434
if available: costing model (how is the annual operating cost calculated)	If service is delivered to internal CIEMAT clients, costs are calculated on a basis of an all-in fee package. Special conditions may be applicable for tests performed in the frame of approved official cooperation agreements.
Estimated investment cost (replacement value)	2 M€

Pictures

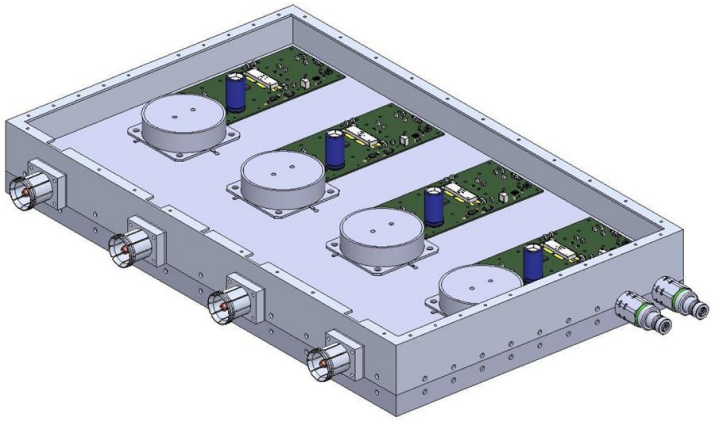

Fig. 15. Solid state Amplifier Module

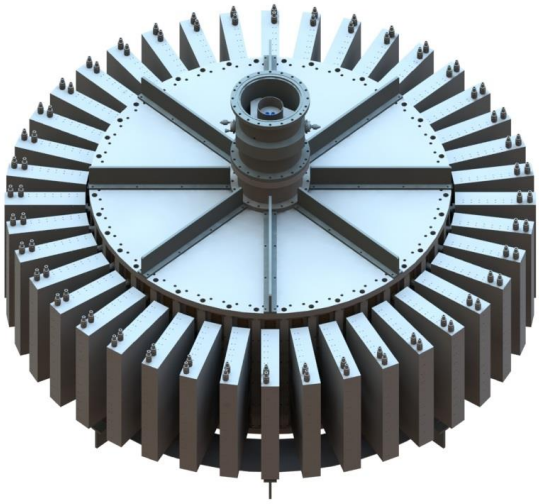

Fig. 16. Solid state Amplifier Modules and single-step cavity combiner

Fig. 17. Cavity combiner prototype in the CIEMAT High Power RF Laboratory

5. 400 KW 750 MHZ 0.2% D.C. SSPA

Name of the infrastructure	400 kW 750 MHz 0,2% d.c. SSPA
Location of infrastructure (town, country)	Madrid, Spain
Web site address	http://www.ciemat.es
Legal name of organization operating the infrastructure	CIEMAT, Centro de Investigaciones Energéticas Mediambientales y Tecnológicas
Location of organization (town, country)	Madrid, Spain
Key Accelerator Research Area(s)	RF structures, medical accelerators
General description of the infrastructure	The objective of this infrastructure is to contribute to the technological development in high frequency RF structures with special interest in future applications in the high energies and medical fields. The frequency of 750 MHz is especially interesting in the field of linear accelerators, especially for medical applications, with some low-beta accelerating structures being developed or proposed nowadays. This facility is composed by the following infrastructures and / or activities: 1. Set of amplifiers for providing up to 400 kW RF power at 750 MHz frequency using solid state technology.
Already existing or planned	In progress
Unique features	400 kW 750MHz 0,2% d.c SSPA
Present situation/future changes/expected lifetime	No large change presently planned. Expected lifetime: more than 10 years
Accelerator infrastructure or component test infrastructure	Component test infrastructure
Shared facility/infrastructure	Yes
Main user community	R&D institutes, linear accelerators users, medical accelerators
Open for external users	yes
If open to external users: Modality of access to the infrastructure (access unit)	There are different modalities to access the facility like a “Service Contract” or a “Collaboration Agreement” among others
Number of access units available for external users	Depending on the availability of the part of the installation needed
If open to external users: Support offered by the organization operating the infrastructure	If service is delivered to internal CIEMAT clients, costs are calculated on a basis of an all-in fee package. Special conditions may be applicable for tests performed in the frame of approved official cooperation agreements.
Review procedure for requested access	Either after discussion with CIEMAT, or in the frame of an international contract, European or else
How to apply	By contacting the responsible
Can the infrastructure be made available?	yes
If YES, fraction of time that could be made available (%)	Depending on the internal projects going on, and on the facility needed.
Contact details (name, Institute, email,)	Daniel Gavela Accelerator Unit Avenida Complutense, 40 28040, Madrid daniel.gavela@ciemat.es Tel.: +34 91 496 2573
if available: costing model (how is the annual operating cost calculated)	If service is delivered to internal CIEMAT clients, costs are calculated on a basis of an all-in fee package. Special conditions may be applicable for tests performed in the frame of approved official cooperation agreements.

Pictures

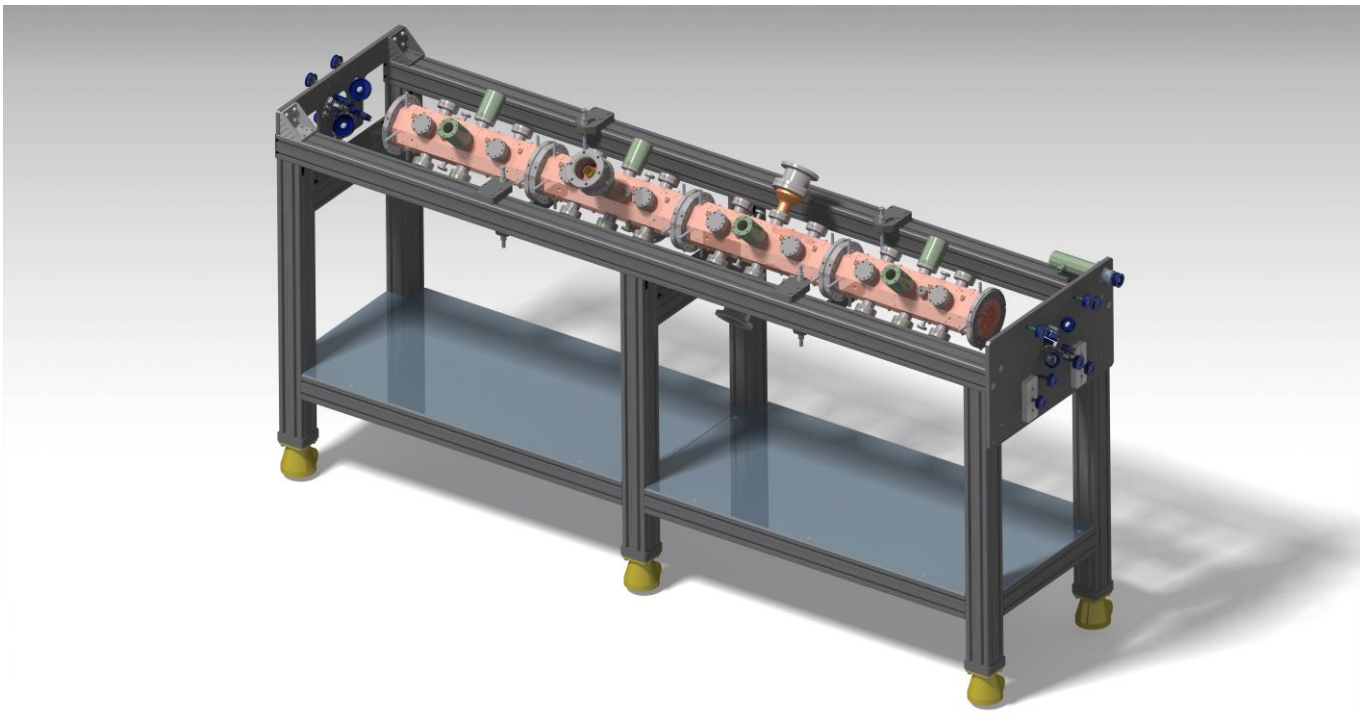

Fig. 9. Low power RF test bench