

PIP-II Project

Interface Specification Document for PIP2IT HWR RF
Distribution LLRF and Cooling Systems

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Revision History

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0.0	May 22, 2019	James Steimel	Initial Version of the document
			Changes / revisions

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1. Purpose

The purpose of this document is to describe the external interfaces between the HWR RF Distribution and the building infrastructure for PIP2IT. It also describes the external interfaces between the HWR RF Distribution and the LLRF system at PIP2IT.

2. Building Infrastructure

2.1. Building Environment

- Possible environment temperature: 10-40 °C.
- Possible environment humidity: 10-95%.

2.2. Water Cooling

- Maximum inlet water pressure: 150 psig
- Maximum water pressure drop: 60psi
- Required flow, circulator: **minimum**
- Required flow, load: **minimum**
- Cooling water temperature nominal: 25-35 °C.
- Cooling water header, Circulator: **Copper/SS NPT (male) of 1/4" size**
- Cooling water header, Load:

2.3. Water Cooling Instrumentation

- **Circulator return temperature electrical interface**
- **Circulator flow meter electrical interface**
- **Load return temperature electrical interface**
- **Load flow meter electrical interface**

3. LLRF

- Forward and reflected coupler connection: Type - N for 3/8" flexible (50 ohm), coaxial RF cable
- Maximum forward signal power: 10 dBm