

# PIP-II Project

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Interface Specification Document for PIP2IT SSR1 RF  
Distribution LLRF and Cooling Systems

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## Revision History

| Version # | Date         | Author        | Comment                         |
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| 0.0       | May 22, 2019 | James Steimel | Initial Version of the document |
|           |              |               | Changes / revisions             |
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## 1. Purpose

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The purpose of this document is to describe the external interfaces between the SSR1 RF Distribution and the building infrastructure for PIP2IT. It also describes the external interfaces between the SSR1 RF Distribution and the LLRF system at PIP2IT.

## 2. Building Infrastructure

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### 2.1. Building Environment

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

### 2.2. Water Cooling

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- Maximum inlet water pressure: 150 psig
- Maximum differential pressure: 60psi
- Required flow, circulator & load: minimum 2.5GPM maximum 4GPM
- Cooling water temperature nominal: 25-35 °C.
- Cooling water header, Circulator: ¼" NPT
- Cooling water header, Load: ½" NPT

### 2.3. Water Cooling Instrumentation

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- Circulator/load flow & temperature electrical interface: 4-20mA each signal
- +24V nominal, 4-20mA flow signal, 4-20mA temperature

## 3. LLRF

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