

LCLS-II RF Controls Network Conventions

| Version | Date | Author/Modifier | Comment |
|---------|------------|-----------------|---|
| 0 | 11/10/2017 | Sonya Hoobler | Initial version. Covers CPUs, Chassis, SSAs |
| 1 | 07/30/2018 | Sonya Hoobler | Update SRF Res/Intlk & PRC IPs |
| 2 | 07/03/2019 | Sonya Hoobler | For LLRF chassis: remove public interfaces, add Kintex internal interface, add MAC addresses. |
| 3 | 11/24/2019 | Sonya Hoobler | Change MAC address format from using hyphens to colons |
| 4 | 02/12/2020 | Sonya Hoobler | Update CPU public node names and internal chassis node names |
| | | | |

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Gun and Buncher

Gun and Buncher CPU and RF Chassis Conventions – Local LLRF Network

| Device | | <i>Spartan Interface</i> | | | <i>Kintex Interface</i> | | |
|--------|------|-----------------------------------|---------------|-------------------|-------------------------------------|---------------|-------------------|
| | | FPGA board monitoring and control | | | EPICS<->LLRF internal communication | | |
| | | Node name | IP address | MAC address | Node name | IP address | |
| CPU | | cpu | 192.168.0.1 | | (same) | (same) | |
| Rack A | RFS1 | rfs1-gun-mgt | 192.168.0.101 | 02:00:00:00:01:01 | rfs1-gun | 192.168.0.111 | 02:00:00:00:01:11 |
| | RFS2 | rfs2-gun-mgt | 192.168.0.102 | 02:00:00:00:01:02 | rfs2-gun | 192.168.0.112 | 02:00:00:00:01:12 |
| | PRC | prc-gun-mgt | 192.168.0.103 | 02:00:00:00:01:03 | prc-gun | 192.168.0.113 | 02:00:00:00:01:13 |
| Rack B | RFS1 | rfs1-buncher-mgt | 192.168.0.201 | 02:00:00:00:02:01 | rfs1-buncher | 192.168.0.211 | 02:00:00:00:02:11 |
| | RFS2 | rfs2-buncher-mgt | 192.168.0.202 | 02:00:00:00:02:02 | rfs2-buncher | 192.168.0.212 | 02:00:00:00:02:12 |
| | PRC | prc-buncher-mgt | 192.168.0.203 | 02:00:00:00:02:03 | prc-buncher | 192.168.0.213 | 02:00:00:00:02:13 |

Gun and Buncher SSA Conventions

| SSA | <i>Public Interface</i> | | | |
|-------------|-------------------------|------------------|----------------|-----------------------------------|
| | Purpose | Network | Node name | IP address |
| Gun - 1 | EPICS RF Controls | LCLS2INST subnet | ssa-gunb-100-1 | Varies, assigned by network group |
| Gun - 2 | | | ssa-gunb-100-2 | |
| Buncher - 1 | | | ssa-gunb-455-1 | |
| Buncher - 2 | | | ssa-gunb-455-2 | |
| Buncher - 3 | | | ssa-gunb-455-3 | |
| Buncher - 4 | | | ssa-gunb-455-4 | |

Cryomodule

Cryomodule CPU and RF Chassis Conventions – Local LLRF Network

| Device | | <i>Spartan Interface</i> | | | <i>Kintex Interface</i> | | |
|--------|---------|-----------------------------------|---------------|-------------------|-------------------------------------|---------------|-------------------|
| | | FPGA board monitoring and control | | | EPICS<->LLRF internal communication | | |
| CPU | | Node name | IP address | MAC address | Node name | IP address | |
| CPU | | cpu | 192.168.0.1 | | (same) | (same) | |
| Rack A | Res/Int | resa-mgt | 192.168.0.100 | 02:00:00:00:01:00 | resa | 192.168.0.110 | 02:00:00:00:01:10 |
| | RFS1 | rfs1a-mgt | 192.168.0.101 | 02:00:00:00:01:01 | rfs1a | 192.168.0.111 | 02:00:00:00:01:11 |
| | RFS2 | rfs2a-mgt | 192.168.0.102 | 02:00:00:00:01:02 | rfs2a | 192.168.0.112 | 02:00:00:00:01:12 |
| | PRC | prca-mgt | 192.168.0.103 | 02:00:00:00:01:03 | prca | 192.168.0.113 | 02:00:00:00:01:13 |
| Rack B | Res/Int | resb-mgt | 192.168.0.200 | 02:00:00:00:02:00 | resa | 192.168.0.210 | 02:00:00:00:02:10 |
| | RFS1 | rfs1b-mgt | 192.168.0.201 | 02:00:00:00:02:01 | rfs1a | 192.168.0.211 | 02:00:00:00:02:11 |
| | RFS2 | rfs2b-mgt | 192.168.0.202 | 02:00:00:00:02:02 | rfs2a | 192.168.0.212 | 02:00:00:00:02:12 |
| | PRC | prcb-mgt | 192.168.0.203 | 02:00:00:00:02:03 | prca | 192.168.0.213 | 02:00:00:00:02:13 |

Cryomodule SSA Conventions

| SSA | <i>Public Interface</i> | | | |
|----------|-------------------------|------------------|-------------------|-----------------------------------|
| | Purpose | Network | Node name | IP address |
| Cavity 1 | EPICS RF Controls | LCLS2INST subnet | ssa-<area>-<cm>10 | Varies, assigned by network group |
| Cavity 2 | | | ssa-<area>-<cm>20 | |
| Cavity 3 | | | ssa-<area>-<cm>30 | |
| Cavity 4 | | | ssa-<area>-<cm>40 | |
| Cavity 5 | | | ssa-<area>-<cm>50 | |
| Cavity 6 | | | ssa-<area>-<cm>60 | |
| Cavity 7 | | | ssa-<area>-<cm>70 | |
| Cavity 8 | | | ssa-<area>-<cm>80 | |

area = beamline area, e.g. gunb, l0b, l1b, l2b, l3b

cm = 2-character cryomodule identifier: 01-35 for 1.3 GHz, H1-H2 for 3.9 GHz. Example: SSA for cavity 3 in CM15 would be ssa-l2b-1530

Cryomodule CPU Node Names

| Cryomodule | Beamline Area | CPU node name | Cryomodule | Beamline Area | CPU node name | Cryomodule | Beamline Area | CPU node name |
|--------------|---------------|---------------|--------------|---------------|---------------|------------|---------------|---------------|
| 01 | L0B | cpu-l0b-rf01 | 16 | L3B | cpu-l3b-rf16 | 33 | L3B | cpu-l3b-rf33 |
| 02 | L1B | cpu-l1b-rf02 | 17 | | cpu-l3b-rf17 | 34 | | cpu-l3b-rf34 |
| 03 | | cpu-l1b-rf03 | 18 | | cpu-l3b-rf18 | 35 | | cpu-l3b-rf35 |
| H1 (3.9 GHz) | | cpu-l1b-rfh1 | 19 | | cpu-l3b-rf19 | | | |
| H2 (3.9 GHz) | | cpu-l1b-rfh2 | 20 | | cpu-l3b-rf20 | | | |
| 04 | | L2B | cpu-l2b-rf04 | | 21 | | | |
| 05 | cpu-l2b-rf05 | | 22 | | cpu-l3b-rf22 | | | |
| 06 | cpu-l2b-rf06 | | 23 | | cpu-l3b-rf23 | | | |
| 07 | cpu-l2b-rf07 | | 24 | | cpu-l3b-rf24 | | | |
| 08 | cpu-l2b-rf08 | | 25 | | cpu-l3b-rf25 | | | |
| 09 | cpu-l2b-rf09 | | 26 | | cpu-l3b-rf26 | | | |
| 10 | cpu-l2b-rf10 | | 27 | | cpu-l3b-rf27 | | | |
| 11 | cpu-l2b-rf11 | | 28 | | cpu-l3b-rf28 | | | |
| 12 | cpu-l2b-rf12 | | 29 | | cpu-l3b-rf29 | | | |
| 13 | cpu-l2b-rf13 | | 30 | | cpu-l3b-rf30 | | | |
| 14 | cpu-l2b-rf14 | | 31 | cpu-l3b-rf31 | | | | |
| 15 | cpu-l2b-rf15 | 32 | cpu-l3b-rf32 | | | | | |