# MPS Logic:
# 2021-05-14-a

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# 1 Always Evaluated

## 1.1 Bypass Recover

| Name | *A* | GUNL | MS | BYKIK | LHS | GUNH | GUNS | BYKIKS |
|---|---|---|---|---|---|---|---|---|
| Not recovered | F | 0 Hz | 0 Hz | – | – | – | – | – |
| Ok | T | 30 Hz | 30 Hz | – | – | – | – | – |

Where
*A* = `LP_BYPASS_RECOVER`

## 1.2 Gun RF Peak Power 10-2

| Name | *A* | GUNL | MS | BYKIK | LHS | GUNH | GUNS | BYKIKS |
|---|---|---|---|---|---|---|---|---|
| Fault | F | 0 Hz | 0 Hz | – | – | – | – | – |
| Ok | T | 30 Hz | 30 Hz | – | – | – | – | – |

Where
*A* = `KLYS_LI10_21_PEAKPOWER_STATE`

## 1.3 Gun Waveguide Vacuum Summary

| Name | *A* | GUNL | MS | BYKIK | LHS | GUNH | GUNS | BYKIKS |
|---|---|---|---|---|---|---|---|---|
| Not Ok | F | 0 Hz | 0 Hz | – | – | – | – | – |
| Ok | T | 30 Hz | 30 Hz | – | – | – | – | – |

Where
*A* = `MKSU_LI10_61_WGVACSUM_STATE`

## 1.4 IOC-IN10-MP01 MPS Support IOC Heartbeat

| Name | *A* | GUNL | MS | BYKIK | LHS | GUNH | GUNS | BYKIKS |
|---|---|---|---|---|---|---|---|---|
| Not Ok | F | 0 Hz | 0 Hz | – | – | – | – | – |
| Ok | T | 30 Hz | 30 Hz | – | – | – | – | – |

Where
$A$ = IOC_IN10_MP01_HEARTBEATSUM_STATE

## 1.5 MPS Beam Permit: Gun RF

| Name | $A$ | GUNL | MS | BYKIK | LHS | GUNH | GUNS | BYKIKS |
|---|---|---|---|---|---|---|---|---|
| Not Permitted | F | 0 Hz | – | – | – | – | – | – |
| Permitted | T | 30 Hz | – | – | – | – | – | – |

Where
$A$ = LP_ALLOWS_BEAM_POCKELS_CELL

## 1.6 MPS Beam Permit: Mechanical Shutter

| Name | $A$ | GUNL | MS | BYKIK | LHS | GUNH | GUNS | BYKIKS |
|---|---|---|---|---|---|---|---|---|
| Not Permitted | F | – | 0 Hz | – | – | – | – | – |
| Permitted | T | – | 30 Hz | – | – | – | – | – |

Where
$A$ = LP_ALLOWS_BEAM_MECH_SHUT

## 1.7 MPS Mechanical Shutter Inconsistent State

| Name | $A$ | GUNL | MS | BYKIK | LHS | GUNH | GUNS | BYKIKS |
|---|---|---|---|---|---|---|---|---|
| Readback Does Not Match | F | 0 Hz | 0 Hz | – | – | – | – | – |
| Ok | T | 30 Hz | 30 Hz | – | – | – | – | – |

Where
$A$ = SHUT_LT10_950_FAULT_STATE

## 1.8 MPS Mechanical Shutter Position

| Name | $B$ | $A$ | GUNL | MS | BYKIK | LHS | GUNH | GUNS | BYKIKS |
|---|---|---|---|---|---|---|---|---|---|
| Moving | F | F | 0 Hz | – | – | – | – | – | – |
| Out | F | T | 30 Hz | – | – | – | – | – | – |
| In | T | F | 30 Hz | – | – | – | – | – | – |
| Broken | T | T | 0 Hz | – | – | – | – | – | – |

Where
$A$ = SHUT_LT10_950_OUT_POSITION,
$B$ = SHUT_LT10_950_IN_POSITION

## 1.9 PLC-IN10-MP01 MPS Support PLC Heartbeat

| Name | $A$ | GUNL | MS | BYKIK | LHS | GUNH | GUNS | BYKIKS |
|---|---|---|---|---|---|---|---|---|
| Not Ok | F | 0 Hz | 0 Hz | – | – | – | – | – |
| Ok | T | 30 Hz | 30 Hz | – | – | – | – | – |

Where
$A$ = PLC_IN10_MP01_HEARTBEATSUM_STATE

## 1.10 Rate Request: Gun RF 1 Hz

| Name | $A$ | GUNL | MS | BYKIK | LHS | GUNH | GUNS | BYKIKS |
|---|---|---|---|---|---|---|---|---|
| Not Requested | F | 30 Hz | – | – | – | – | – | – |
| Requested | T | 1 Hz | – | – | – | – | – | – |

Where
$A$ = LP_MAX_RATE_PC_1_HZ

## 1.11 Rate Request: Gun RF 10 Hz

| Name | $A$ | GUNL | MS | BYKIK | LHS | GUNH | GUNS | BYKIKS |
|---|---|---|---|---|---|---|---|---|
| Not Requested | F | 30 Hz | – | – | – | – | – | – |
| Requested | T | 10 Hz | – | – | – | – | – | – |

Where
$A$ = LP_MAX_RATE_PC_10_HZ

## 1.12 VVPG IN10 155 Position

| Name | $A$ | GUNL | MS | BYKIK | LHS | GUNH | GUNS | BYKIKS |
|---|---|---|---|---|---|---|---|---|
| Not Out | F | 0 Hz | 0 Hz | – | – | – | – | – |
| Out | T | 30 Hz | 30 Hz | – | – | – | – | – |

Where
$A$ = VVPG_IN10_155_POSITION_STATE

## 1.13 VVPG IN10 215 Position

| Name | $A$ | GUNL | MS | BYKIK | LHS | GUNH | GUNS | BYKIKS |
|---|---|---|---|---|---|---|---|---|
| Not Out | F | 0 Hz | 0 Hz | – | – | – | – | – |
| Out | T | 30 Hz | 30 Hz | – | – | – | – | – |

Where
$A$ = VVPG_IN10_215_POSITION_STATE

## 1.14 YAG IN10 241 Position

| Name | $B$ | $A$ | GUNL | MS | BYKIK | LHS | GUNH | GUNS | BYKIKS |
|---|---|---|---|---|---|---|---|---|---|
| Moving | F | F | 0 Hz | 0 Hz | – | – | – | – | – |
| Out | F | T | 30 Hz | 30 Hz | – | – | – | – | – |
| In | T | F | 10 Hz | 10 Hz | – | – | – | – | – |
| Broken | T | T | 0 Hz | 0 Hz | – | – | – | – | – |

Where
$A$ = YAGS_IN10_241_OUT_LIMSW_POSITION,
$B$ = YAGS_IN10_241_IN_LIMSW_POSITION