



NIRSpec Memo NMM-2012-001

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Names and purpose of selected MSA configurations

This memo provides a list of the names and purposes of selected MSA configurations used during the second NIRSpec thermal vacuum calibration campaign, carried out in 2013 January and February. After discovering the “glow” problem early in the campaign, a glow mitigation strategy was implemented. As part of it, after configuring the MSA to the desired pattern, the voltage of the 365 side brought from negative to zero. All other voltages were left unchanged. We will refer to this approach as “standard addressing”.

Configuration name in test procedures (state tables)	Configuration name in data files and telemetry	Type	Purpose
ALLCLOSED	CLOSED	addressed	Fully closed configuration, with no voltages applied. Used to identify failed-open shutters in this special case.
ALLOPEN	OPEN	addressed	Fully open configuration. This is a case of standard addressing with all shutters addressed open. Used to identify failed-closed shutters in standard addressing mode.
GLOW	GLOW	addressed	Fully closed configuration. This is a case of standard addressing with all shutters addressed closed. Used to identify failed-open shutters in standard addressing mode. (The name stems from the need to check for glowing shorts even with the glow mitigation strategy in place.)
LATCHUP	LATCHUP	addressed	The magnet is in the secondary park position and all shutters are open. Used to identify failed-closed shutters for the preferred target acquisition scenario.
CLOSED	n/a	stored	This configuration was never used (see notes).
OPEN	n/a	stored	This configuration was never used (see notes).

Notes

1 – The difference between the ALLCLOSED and GLOW configurations is in the voltages, which in the former case are all released (i.e. set to zero) after the magnet has reached its primary park position. The GLOW configuration is a standard way of addressing and, as

such, it provides information on failed-open shutters for any other addressed pattern normally used in science observations.

2 – The difference between the ALLOPEN and LATCHUP configurations is in the position of the magnet, which is in primary park position in the former case and in secondary park position in the latter. The ALLOPEN configuration is a standard way of addressing and, as such, it provides information on failed-closed shutters for any other addressed pattern normally used in science observations. The LATCHUP configuration can, instead, be used to detect failed-closed shutters in the preferred configuration for imaging mode, and particularly for target acquisition, in which the magnet is kept at the secondary park position.

3 – The stored (i.e. buffered) CLOSED and OPEN configurations were never used during the campaign, due to a naming conflict preventing the on-board software to handle two configurations with the same name, one of which buffered and the other to be loaded. Indeed, the naming conflict is also visible in the table above: the telemetry and FITS header keywords show the names CLOSED and OPEN when in reality the ALLCLOSED and ALLOPEN configurations were used instead. This problem will be solved and the stored configurations will be checked in the second phase of the calibration campaign.