



Application Note:

#8413

Minimize “CROSSTALK” Problems with New S3200RK-50 Rack

The System 8400 has proven itself as a high performance pressure data acquisition system with particular emphases on accuracy and flexibility. However, some of PSI’s customers have reported, that under certain conditions, the combined “CROSSTALK” and standard errors exceeded the 0.05% of Full Scale limit. Unlike most acquisition systems, the System 8400 must contend with long analog and digital cable lengths to the scanners, remotely located multiplexers/amplifiers in the scanners and switched grounds. This application note addresses the operation of the new S3200RK-50 rack (not covered in the System 8400 User’s Manual) that minimizes the “CROSSTALK” problem.

The S3200RK-50 rack looks much like the older rack however the PC board (internal) is quite different. There are also some notable changes to the rear panel, as noted below:

1. The address switch SW1 to select the rack address (0-7) is now accessible from the rear without opening the rear panels as with the old units.
2. The DIPS (RN1, RN2, RN3 and RN4) to terminate the last rack are now accessible from the rear without opening the rear panels as with the old units.
3. The one new selector is the “MASTER/SLAVE” switch. This switch is used to Enable or Disable line driver amplifiers that have been installed. The addition of these amplifiers are the prime factor in minimizing the “Crosstalk” problem.

The following RULES must be followed in setting up these new S3200RK-50 Racks:

- A. There can never be more than one rack selected for any address (SW1).
- B. There can never be more than one rack in The MASTER MODE.
- C. ALL Racks MUST be in the SLAVE MODE for cable lengths of 70 feet (21 meters) or less.
- D. When cable lengths are greater than 70 feet (21 meters), ONLY the Rack closest to the SDU can be in the MASTER MODE.
- E. Maximum distance from the SDU to the last rack is 300 feet (100 meters).



- F. Terminations (DIPS) should be installed on the LAST 2 racks in a configuration. For Example, one (1) or two (2) racks, DIPS in both units; 3, 4, 5, 6, 7 or 8 systems, DIPS in the LAST two (2) racks.

IMPORTANT: This rule applies to standard rack setups where the long 8488 cable is from the SDU to the first rack and short (10 ft) 8488 cables connecting the remaining racks. If you have a different configuration (e.g., long interconnection cables) please contact the PSI Applications Department for recommended DIPS to be installed.

IMPORTANT: NEVER install more than three (3) sets of DIPS or the SDU output drivers may be damaged.

- G. All DIPS will have been removed from the racks at PSI before shipment. The user is responsible for installing these DIPS as required.