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Tests of Pixel Detector Readout Components to be used in the CMS Experiment During Phase I of the LHC Upgrade INDIRA VERGARA-QUISPE, Universidad de Puerto Rico — During Phase I of the LHC upgrade, the CMS pixel detector will need to handle a much higher data volume due to the doubling of the luminosity as well as the planned increase in the number of pixel modules. To meet this challenge the readout scheme will be changed to digital readout and the readout frequency will be increased. The design of the new readout system includes the use of a voltage control oscillator (VCO) and data serializers. The VCO has already been designed and three prototype samples were built and tested. To determine radiation hardness, they were then irradiated with 60Co in 10 doses of 50 KGy each. The serializer has also been designed and studied via simulation to determine its timing performance. Results of these tests and simulations will be presented.

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