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Ground Characterization of H2RG FPAs for the ARRAKIHS Mission at IFAE

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ARRAKIHS is an ESA fast mission selected in 2022 to analyze the nature of dark matter and galaxy formation through ultra-low surface brightness observations. Achieving the mission's scientific goals requires stringent performance from the infrared focal plane. This work presents the current detector characterization activities for the ARRAKIHS mission, focused on the setups developed to operate a Teledyne H2RG FPA readout with a SIDECAR ASICs. The characterization will be carried out at the Institut de Física d'Altes Energies (IFAE), with the support of ESA and the ARRAKIHS AMC team (ICE-IEEC and IFCA), where a dedicated Ground Support Equipment (GSE) and cryogenic test setups are under development. The facilities enable full detector operation under representative conditions and support measurements of key performance parameters, including readout noise, gain, dark current, linearity, persistence, and quantum efficiency.

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