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The Gamma-ray Transients Monitor (GTM) onboard Formosat-8B

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The Gamma-ray Transients Monitor (GTM) is a secondary science payload of Formosat-8B (FS-8B) for monitoring Gamma Ray Bursts (GRBs) and other transients in the energy band from 50 keV to 2 MeV. GTM consists of two identical modules located on two opposite sides of FS-8B, a Taiwanese remote sensing satellite. Each module has four sensor units facing different directions to cover half of the sky. The two modules will then cover the whole sky, including the direction occulted by the Earth. Each sensor unit is composed of a GAGG scintillator array (50 mm × 50 mm × 8 mm) to be readout by SiPM with 16 pixel-channels. Based on different flux levels detected by different sensor units, the direction of the GRB event can be determined. GTM will enhance the sky coverage of contemporary missions and provide independent event localization measurement. Spectral analysis and polarization-state determination for bright GRBs can be conducted with GTM data. GTM is expected to detect about 50 GRBs per year. Its flight model has gone through all required environmental tests successfully and was delivered to Taiwan Space Agency (TASA) in September 2023. On-ground calibration is being conducted. The launch is expected in 2026.

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