



# GOES-R Rebroadcast (GRB) Simulator Fact Sheet



Highlights	
<b>Physical Features</b>	2 Transit Cases – 46" L X 27" W X 24 1/2" H for each case
	Weight - Transit Case 1: ~220 lbs Transit Case 2: ~250 lbs Total Weight: ~470 lbs
	Contains front and back removable hard cover lids and 4 side handles for each transit case
	*RJ45, I/F, USB, and VGA cables, power cords, GPS antenna, and Operator Data CD included
	Transit Case 1 (Top) contains 8-port KVM console, IBM Server, 16-port Network Switch, and Power Distribution Unit
	Transit Case 2 (Bottom) contains Time Code Generator, Dual Channel RT Logic Front End Processor, Dual Channel RT Logic Modem, and Power Distribution Unit
<b>Downlink Specifications</b>	Power Requirements: Transit Case 1: ~1065 Watts (single 120 Volt/15 Amp circuit) Transit Case 2: ~2110 Watts (two 120 Volt/15 Amp circuits)
	Input Center Frequency = 1686.6 MHz / IF Output = 70 MHz
	Polarization – Dual Circular: Left-Hand and Right-Hand
	Primary Modulation - 8PSK *Final selection to be determined after post launch testing
	Alternate Modulation - QPSK
	Signal Format – DVB-S2
	Output of the DVB-S2 Demodulator – 15.5 Mbps
Bandwidth per polarization: 9.8 MHz for Primary Modulation 10.9 MHz for Alternate Modulation	
Block Length = 64800 bits / Transfer Frames = 2048 bits plus 14 bits for QoS	
<b>Software Features</b>	Provides high-fidelity streams of Consultative Committee for Space Data Systems (CCSDS) formatted GRB packet data equivalent to live GRB data
	Simulates Imager (ABI and SUVI) and Non-Imager (GLM, SEISS, EXIS, and MAG) instrument data streaming
	Off-line Mode = setup of configurations, scenarios, test patterns, and proxy data, viewing event logs, and creating reports
	On-line Mode = simulation run of GRB packet generation
	Graphical User Interface (GUI) allows users to create, modify, view, and delete configurations, scenarios, test patterns (images), event logs, and reports
	Scenario scripts specify the test data to use and the series of actions for the GRB Simulator to perform when generating output of GRB packet generation
Test Patterns: Images – Monochromatic and RGB in JPEG or PNG format Proxy Data files (L1b data) in netCDF format Non-Images – Sine Wave, Triangular, or Square patterns via scenario scripts Proxy Data files (L1b data and L2+ GLM) in netCDF format	