Bus Research and Testing Program
Heavy-duty Chassis Dynamometer and Emissions Testing Facility

Objective
Measure the tail pipe emissions, including particulates, carbon monoxide, oxides of nitrogen, hydrocarbons and carbon dioxide from transit buses and heavy-duty vehicles when they are tested on simulated driving cycles on a chassis dynamometer.

Equipment Overview
The facility includes a heavy-duty chassis dynamometer, required for conducting these tests, as well as a heavy-duty diesel and gasoline dilution tunnel and related emissions measuring equipment. The emissions test facility has been operational since December 2009.

Chassis Dynamometer (Horiba ATS)
• 72-inch rolls
• 300 HP continuous absorption capacity
• 25-ton inertia capability
• 30-ton axle capacity
• 80 mph speed
• Simulated road load curve
• Test cycle simulation with driver aid

Emission Equipment (Horiba ATS)
• Full-scale dilution tunnel, up to 4000 scfm
• Dilution air HEPA filtered and conditioned
• CO₂, CO, HC, NOₓ, and particulates
• Fuels: Diesel, gasoline, CNG, propane, LNG, LPG, ethanol, and hybrid energy
• CFR 1065 capability
• Aerovironment AV-900 power processor

Potential Research Opportunities
• Real-world emissions tests on medium- and heavy-duty vehicles
• Hybrid medium- and heavy-duty vehicles emissions and fuel consumption studies
• Emissions and fuel consumption studies for different driving cycles, steady state and transient
• Multiple fuels capability including diesel, gasoline, CNG, propane, LNG, LPG, ethanol, and hybrids
• Pre- and post-catalyst tests to evaluate performance of catalytic convertor

Program
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