

## **BQM-167i TARGET**

The BQM-167i is a high performance remotely controlled sub-scale aerial target as shown below. The target, manufactured by Composite Engineering, inc., is a semi-monocoque, swept-wing monoplane with conventional aircraft style empennage. A Microturbo TRI60-5+ turbojet engine powers the BQM-167i. The target is capable of nominal speeds from 230 to 560 knots true airspeed at sea level ( $\pm 2$  percent) with a maximum sustained speed of Mach 0.90. The BQM-167i has a primarily digital electronics architecture based on a GPS augmented Autopilot Sensor (APS) with an internal INS (Inertial Navigation System). Its mission is to provide a realistic and economical aerial target, capable of simulating the performance of enemy aircraft and missiles, to aid in research, development, test, and evaluation of surface-to-air and air-to-air weapons systems. Onboard systems aid in visual identification of the aircraft, augment the radar signature, provide scalar or vector Doppler scores of the effectiveness of ordnance fired at the target, and include a homing beacon to aid in post-mission recovery. The Scalar Doppler Score Systems called MDOPS (Micro Doppler System) uses 3245 MHz for scoring sensors and a frequency in the 300 – 400 MHz range for telemetry. The Vector Doppler Score Systems called VDOPS (Vector Doppler System) uses 2431.5 or 2433.4 MHz for scoring sensors and a frequency in the 2200 – 2300 MHz range for telemetry. The Beacon transmitter uses a 1 MHz bandwidth centered at 235 MHz. Ancillary equipment includes passive radar signature augmentation, an L-band radar transponder, Information Friend or Foe (IFF), and TRX-4A tow targets. The IFF uses the 1090 MHz frequency for transmit and the 1030 MHz frequency for receive signals. Flight control is accomplished by telemetry uplinked from a remote control station. Uplink telemetry commands received and decoded by onboard systems are relayed through the digital autopilot to flight controls. Telemetry downlinked from the target and received by the ground station provides continuous information on target status. The telemetry and command signals use a frequency in the 380 – 400 MHz range. The target is capable of maintaining continuous straight and level flight at altitudes between a maximum of 50,000 feet MSL and a minimum of 50 feet above the water during any firing presentation. Upon ground station command, the aircraft can execute preprogrammed G-turn maneuvers up to 9g, automated recovery, and preprogrammed missions. A 4-stage recovery parachute system can be deployed by the operator up to 35,000 feet in altitude and Mach 0.85, but is automatically deployed after a time delay following Loss of Carrier (LOC) or when electrical power is lost.

