



FAR LOW RIGHT QUADRANT



FAR DIRECTLY RIGHT



CLOSE DIRECTLY RIGHT



ON TARGET

OPERATIONAL CONCEPT

Ground combat personnel (JTAC) pass target information and coordinates (map or GPS aided) to fighter/bomber aircraft using standard "9-line" format. The aircraft fires the laser at the target coordinates from a distance and JTAC looks through the SPOTTR to determine if the aircraft is illuminating the correct target. If so, then JTAC can "clear hot" the aircraft to drop laser guided bombs (LGBs) or employ other ordnance with greatly increased assurance that the pilot is on the correct target. This is especially important if friendly troops are nearby in a close air-support (CAS) environment. If the laser is not on correct target, JTAC can shift the laser spot using cardinal directions (N,S,E,W) and distance to the correct target (aircraft targeting pods have North arrows and meter sticks on displays). With SPOTTR, lengthy and sometimes confusing JTAC to fighter and fighter to JTAC "target talk-ons" are virtually eliminated and fratricide potential is greatly reduced since JTAC has direct confirmation of aircraft sensor location.

The primary users are JTACs assigned to Air Support Operation Squadrons attached to Army Brigades/Divisions. However, the SPOTTR tracking capability also could be employed by special forces, Marine JTACs and in aircraft. The SPOTTR also provides useful battlefield information by determining whether friendly combatants or equipment are being illuminated by a 1.06um laser(s).

Typical operational sequence:

- A patrol is taking fire from an enemy occupied building in a civilian area.
- JTAC wants fighter to drop a single LGB on the building occupied by enemy combatants.
- JTAC passes "9-line" format coordinates.
- Fighter enters JTAC derived coordinates and sees several buildings in targeted area.
- Fighter fires laser on a single building.
- JTAC confirms that the correct building is targeted by the fighter or
- JTAC provides directions to shift laser spot to the target building.
- JTAC "clears hot" for fighter LGB attack.

The Fraser-Volpe SPOTTR is controlled under the U.S. International Traffic in Arms Regulations (ITAR) Part 121, Category XII, *(a) and *(b) and may not be exported to a foreign person, either in the U.S. or abroad, without a license or exemption from the U.S. State Department.

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SPOTTR



**Accurate stand-off verification
of target illumination by
airborne or ground laser designators.**



Analog Modules, Inc.

an HBCO company

STABILIZED PORTABLE OPTICAL TARGET TRACKING RECEIVER (SPOTTR)



SPOTTR is designed to allow Joint Terminal Attack Controllers (JTACs) on the ground near the target area, to detect and decode laser energy from an airborne or ground laser designating military targets.

The JTAC can verify the correct target is illuminated and “clear hot” ordinance to be dropped. If the correct target is not illuminated the JTAC can give commands to shift laser spot to the correct target. SPOTTR greatly increases the assurance that ordinance will be delivered to the intended target, critical when friendly forces are nearby in a close air support environment. Combat capability is increased by reducing the time for target confirmation and talk-ons, thereby speeding up the targeting process and minimizing targeting errors that can result in fratricide or collateral damage. SPOTTR also serves as a 12x monocular with night vision capability.

Steering commands projected into the field of view direct the operator to move the cross hair to the laser spot location. Illuminated dots in each quadrant near the perimeter and center of the field of view provide these steering commands. A numeric display indicates the laser’s pulse period and signal strength.

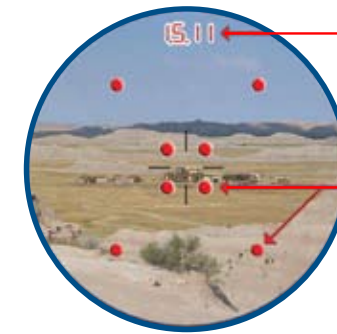
SPOTTR incorporates Gyro-Stabilization, which helps to remove the effects of hand and vehicle vibration. This allows for clearer and easier target identification at long ranges.

Miniature Quadrant Tracker



SPOTTR integrates a quadrant tracker developed by Analog Modules, Inc. The tracker provides laser direction information into the eyepiece of a widely deployed General Services Administration (GSA) listed M-25 gyro-stabilized binocular manufactured by Fraser-Volpe LLC. The left ocular is replaced with a quadrant tracker that provides direction information displayed in the visual sight. The miniature quadrant tracker is mounted on the gyro-stabilized gimbal so that the tracker’s sightline is stabilized and ensures the tracker is boresighted to a cross hair in the right eyepiece.

Fraser-Volpe LLC Modified M-25 Gyro-Stabilized Binocular



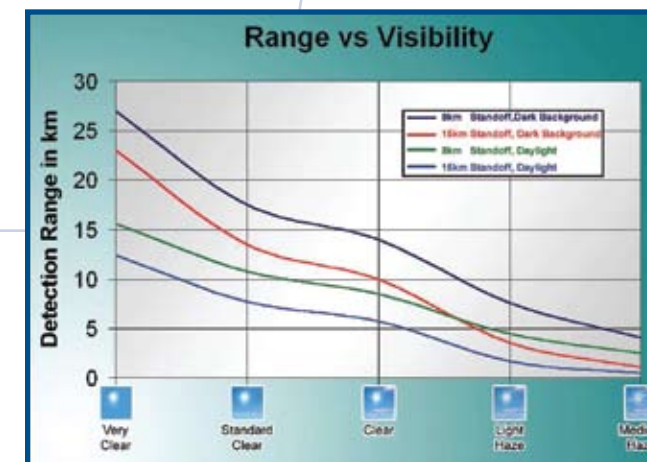
Display multiplexes between:

Triservice Code: 1.5.11

Signal Strength: -----

Inner or Outer Dots light up indicating quadrant and distance from center. When “on target”, all inner dots light up.

- > **Fast, Accurate Target Confirmation**
- > **Visual Laser Spot Locator**
- > **Increase Combat Capability**
- > **Decrease Fratricide and Collateral Damage**
- > **Gyro-Stabilized Platform**



Prior to weapons delivery, SPOTTR allows a forward observer to provide positive identification of the target from a safe distance. Effective maximum detector range in clear weather is approximately 10 km in daylight, allowing significant standoff distance. Visibility performance at night is limited to the optional night vision equipment being paired with the SPOTTR system.

SPECIFICATIONS:

Magnification:	12x
Exit Pupil:	3mm
Field of View:	4.3°
Resolution (Day):	4.3 Sec
Focus Adjustment:	±4 Diopters
Power (Internal):	4 Lithium 123 Camera Batteries
Power (External):	6-30 VDC
Length (Day):	8.50" (216mm)
Length (Night):	10.0" (254mm)
Width:	7.5" (190mm)
Height:	3.5" (89mm)
Weight (Day):	4.5 lbs (2.04 kg)
Weight (Night):	5.3 lbs (2.40 kg)

