

AN/PRC-155 Manpack Networked Tactical Radio

MUOS Ready -- Tested. Fielded. Proven



About the General Dynamics AN/PRC-155 Manpack Radio

The AN/PRC-155 Manpack radio is the U.S. Army's first networking radio that provides two channels for NSA Type 1 (Top Secret and below) encrypted communications. With two channels, the AN/PRC-155 Manpack radio can run different waveforms simultaneously, eliminating the need for more than one radio at any location. The radio can be mounted inside tactical vehicles or carried by an individual soldier. The AN/PRC-155 Manpack radio uses the Soldier Radio Waveform (SRW), Single Channel Ground and Airborne Radio System (SINCGARS) waveform, Ultra High Frequency Satellite Communications (UHF SATCOM) and the Mobile User Objective System (MUOS) waveform. The HMS Program successfully entered Low Rate Initial Production (LRIP) and a total of 5,326 AN/PRC-155 Manpack radios were delivered to the U.S. Army. In addition, the Army has procured over 3,000 MUOS High Power Appliques (MHPA), that attach to the AN/PRC-155 Manpack radio, enabling access to the MUOS Satellite System.



Mobile User Objective System (MUOS) Program

MUOS is a new satellite network that uses cell phone technology to enhance tactical communications for U.S. Armed Forces all over the world. With ten times more capacity than the legacy Ultra High Frequency (UHF) satellite constellation it is replacing, MUOS provides enhanced voice and data services to ships, submarines, aircraft, vehicles and dismounted Soldiers, both stationary and on the move.

MUOS comprises four geostationary satellites that are strategically positioned above the Earth plus one in-orbit spare and ground stations that are located in Hawaii, Virginia, Italy and Australia. The AN/PRC-155 Manpack radio is the ground link to the MUOS Satellite, representing a revolutionary capability by providing next-generation, world-wide satellite communications to the individual soldier. Leveraging 3G Wideband Code Division Multiple Access (WCDMA) cellular telephone technology, information travels from the AN/PRC-155 Manpack radio to satellite, satellite to ground station, ground station back up to satellite and satellite back down to the receiving AN/PRC-155 Manpack radio. Each message travels nearly 100,000 miles and is delivered in less than a second and a half. The AN/PRC-155 Manpack radio is the Program of Record radio for the MUOS Program and completed its Multi-Service Operational Tests and Evaluation (MOT&E) in November 2015, with test results expected in 2016. MUOS is planned for early operations starting on 1 May 2016.

AN/PRC-155 Manpack Radio Capabilities

The AN/PRC-155 Manpack is a proven radio, having completed multiple formal Army Tests, including a successful Follow-On Operational test at the Army's Network Integration Evaluation (NIE) at Ft. Bliss, Texas. In November 2015, the U.S. Army and U.S. Navy worked together at multiple sites to conduct a Multi-Service Operational Test and Evaluation (MOT&E) to verify the capabilities of this break-through technology. The objective was to have the AN/PRC-155 Manpack radio provide voice and data communications using the MUOS satellite system. The MOT&E conducted radio-to-radio communications through the satellite and ground stations with AN/PRC-155 radios at Ft. Bragg, NC, Ft. Drum, NY and Joint Base Lewis/McChord, WA. During the test, the radios were used in two configurations - mounted in vehicles on-the-move and dismounted configurations for soldiers traveling on foot. It was also tested in various terrains, such as urban areas, dense woods and open spaces. The technology implementation was verified and the test validates that the MUOS system is ready for operational use. The AN/PRC-155 Manpack radio connects U.S. Army soldiers to the Warfighter Information Network - Tactical (WIN-T) and the Army's Upper Tactical Internet.

Manpack Networked Tactical Radio

AN/PRC-155 Manpack Radio Is Ready for MUOS Today

The AN/PRC-155 Manpack radio is the only DoD radio that has completed developmental and operational testing with the MUOS System.

Additional demand for the AN/PRC-155 Manpack radio is expected this year given the imminent Beyond Line of Sight (BLOS) operational capability provided by the MUOS system. As operational units are tasked with responsibility for geographically larger Areas of Responsibility (AOR) and operational extension well beyond their higher headquarters, there is a growing demand for reliable, BLOS voice and data communications. One of the primary features of the software defined two-channel AN/PRC-155 Manpack radio is the ability to run different and multiple communication waveforms. This enables the SRW or SINCGARS waveforms to run simultaneously with the MUOS waveform, which acts as the digital dial-tone to connect and communicate with the MUOS satellite system. For example, the AN/PRC-155 MUOS-Manpack radio will receive a call from a tactical radio using SRW or SINCGARS on one channel, then route and retransmit the call using the second channel via

the MUOS waveform, sending the call to the MUOS satellite communications network or other tactical communications networks. With the already validated software and a MHPA mounted on the radio, the AN/PRC-155 Manpack radio is field upgradeable and capable of communicating with the MUOS satellites in geo-synchronous orbit in operational environments. From an operational perspective, this allows, for the first time, the ability to connect Soldiers, with voice and data, forward in the Lower Tactical Internet (LTI) to their headquarters operating in the Upper Tactical Internet (UTI).

AN/PRC-155 Manpack radio and MUOS – A Significant Advancement in Beyond Line of Sight (BLOS) Connectivity..... Available Now

MUOS is an operational capability that is ready now. The U.S. Army has procured over 5,000 AN/PRC-155 Manpack radios and over 3,000 MHPAs enabling MUOS connectivity, and is ready to field this new operational capability to soldiers today. It is imperative that this enhancement be fielded to operational units soon to leverage the benefits of the Department of Defense's game-changing BLOS communications capability.



AN/PRC-155 Manpack Radio – Single Vehicle Mount



3/01 in Afghanistan with Dismounted AN/PRC-155 Manpacks

“...The Manpack radio is the critical communications link between dismounted Soldiers equipped with the Rifleman radio at various echelons and their higher headquarters, as well as between Rifleman Radios at extended ranges.”

- Undersecretary of Defense
Frank Kendall

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