INSTALLATION INSTRUCTIONS
EM-MBD41003
DUAL BAND DUPLEXED ANTENNA SYSTEM with NMO/GPS COMBINATION MOUNT

Congratulations on your selection of another quality antenna product from E/M Wave.
E/M Wave is committed to continually provide the greatest antenna VALUE for your wireless applications.

IMPORTANT: PLEASE CAREFULLY READ ALL INSTRUCTIONS BEFORE BEGINNING THE INSTALLATION PROCESS.

Parts: Verify all parts are included. Reference items in Figure 1:

1. (1 ea.) EM-MBD41000-NJ Multi-Band Duplexer
2. (2 ea.) EM-MX0108-FT X-Nut™, Field Tunable, ¼ Wave Antenna
3. (3 ea.) EMNP-058 Type N Connectors, RG-58/U & 195 Type
4. (1 ea.) EM-MG11006-SP NMO/GPS Combination Cable Mount
5. (1 ea.) EM-M11001-195 Low Loss NMO Cable Mount
6. (1 ea.) 18-00011 RG-58/U Feed Cable, 17 ft. (5.1m) length

Tools/Materials Required:

- Drill and Hole Punch, ¾" (19.05mm) Diameter – Cable Mount installations
- (2 ea.) #8 Self Tapping or Machine Screws – Duplexer mounting installation
- Cable Stripping Tools for RG-58/U & 195 type cable
- Coaxial Connector (sold separately) for coupling Feed Cable (RG-58/U) to radio transceiver

Pre-Installation Checklist and Tips:

- ✓ **Caution:** Verify radio output power does not exceed rated power for each band of the duplexer:
  VHF ◊ **150W, max:** (100-180 MHz) UHF ◊ **100W, max:** (380-520 MHz) 700/800 MHz ◊ **75W, max:** (746-870 MHz)
- ✓ Locate a suitable mounting location for the Duplexer providing the shortest cable lengths for installing both antennas.
- ✓ **Important: Duplexer intended for interior or environmental enclosed installation only. Do not install with direct exposure to outdoor environment.**
- ✓ Follow all instructions provided with each NMO Cable Mount and Antenna to be installed.
- ✓ **Best Performance Recommendations:**
  - Minimize all cable lengths during installation to reduce unnecessary insertion loss.
  - Feed the UHF or 700/800 MHz Antenna using the EM-M11001-195 Low Loss NMO Cable Mount.
  - Separate antennas by largest distance possible to prevent VSWR mismatch or radiated obstruction. (**Note:** Duplexer provides >50 dB isolation between VHF and UHF/700-800 MHz antenna ports, maximizing cross-talk protection.)

Installation:

1. Refer to Figure 1 for antenna/duplexer system configuration.
2. Install Duplexer to a suitable mounting surface using #8 screws. Mounting Hole spacing: 2-15/16" (74.6mm).
3. Install NMO cable mount and NMO/GPS cable mount for each antenna according to the individual instructions.
4. Verify antenna cable routing. Cut excess cable. Strip ends of the cable mounts according to the N Type Connector stripping instructions provided with the connectors. Attach N Type connectors to the cables. Crimp and verify operation.
5. Repeat Step 4 for one end only of RG-58/U Feed Cable (18-00011). Attach radio transceiver connector (sold separately) to the opposite end of the RG-58/U Feed Cable.
6. Install and tune antennas according to the individual antenna instructions provide. Verify operation.
7. Attach GPS connector to GPS receiver. Attach all remaining connections according to the system diagram in Figure 1.
8. Verify radio transceiver performance for all required operating bands or channels.

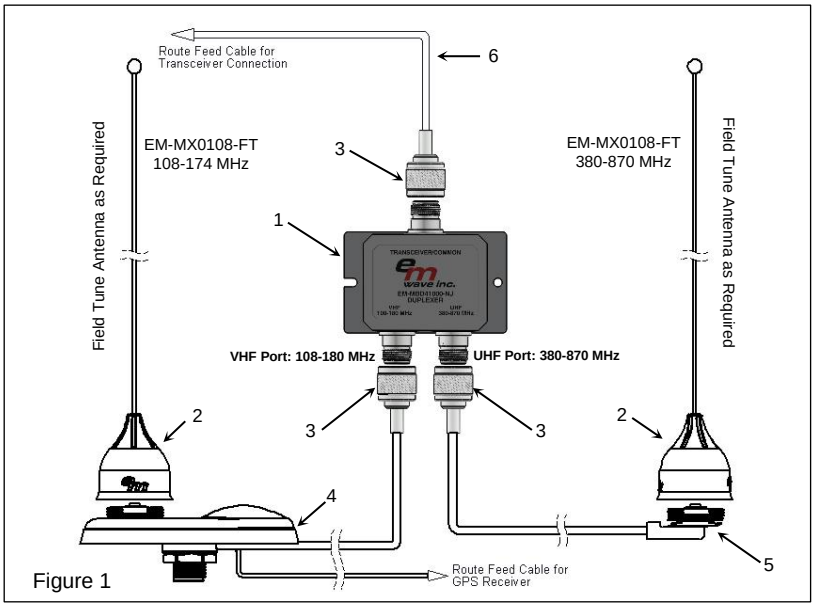

Figure 1

For Product and Warranty Information
www.emwaveinc.com

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