



DIRECTIVE SYSTEMS

DIRECTIVE SYSTEMS

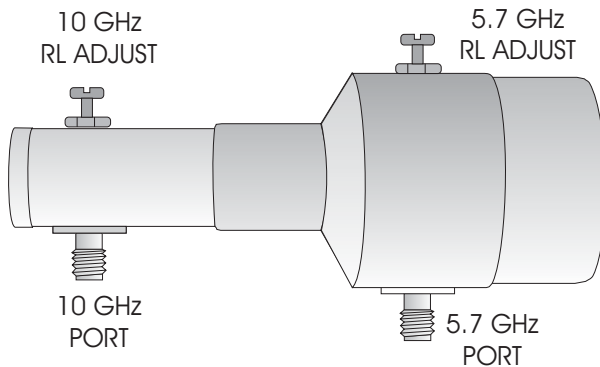
177 DIXON ROAD

LEBANON, ME. 04027

TEL: 207 658 7758 FAX: 207 658 4337 www.directivesystems.com

DUAL BAND W5LUA TYPE DISH FEED, DBFEED

| | | | |
|------------------|--------------------|----------------|------------------|
| Frequency range: | 5760 & 10.368 GHz | Return Loss: | |
| Polarization: | Linear V or H | 5.7 GHz | -16 dB minimum |
| Connector: | SMA (f) both ports | 10.368 GHz | -16 dB minimum |
| Weight: | 1 pound | Maximum Power: | 50 W CCS average |
| F/D (optimum) | .39-.45 | Isolation: | |
| | | 5.7 to 10 GHz | -70 dB |
| | | 10 to 5.7 GHz | -30 dB minimum |



This feed design is based on the work of Al Ward, W5LUA, and represents an efficient way to use one dish on two different ham bands. Unlike earlier multi band feed designs, W5LUA's design is capable of good performance on both microwave bands in use. In addition, the higher isolation of this design, between 10 & 5.7 GHz simplifies installation requirements by eliminating the need, in many cases, for a protective relay on the 5.7 GHz port. Isolation runs over 30 dB and is typically about 40 dB.

INSTALLATION INSTRUCTIONS

- 1) Unpack antenna feed assembly and observe the location of the connectors and probe orientation. For horizontal polarization, the probes must be oriented parallel with the horizon. (The connectors will stick out laterally on the antenna.)
- 2) Install the feed on your parabolic dish using the proper dimension of the focal point (supplied with the dish) to the feed. Measure this distance from about 1/4 inch inside the open mouth of the feed to the center surface of the dish. Our .6 m dish needs 11.25" from feed lip to the dish surface.
- 3) The dish feed SWR has been adjusted at the factory for maximum isolation between 10 GHz and 5.7 GHz. Do not try to adjust the 10 GHz or 5.7 GHz tuning slugs without proper measuring equipment. All feeds are adjusted before shipment and are set for optimum isolation. If you wish to adjust your feed for best VSWR, be aware that connecting cables can introduce serious mismatch errors at these frequencies. The 3/4" tube tuning adjustment affects 10 GHz primarily. The screw on the large diameter is for 5.7 GHz, but can affect 10 GHz at certain positions. Use caution when tuning! Do not move this slug very far, or serious degradation at 10 GHz will result.

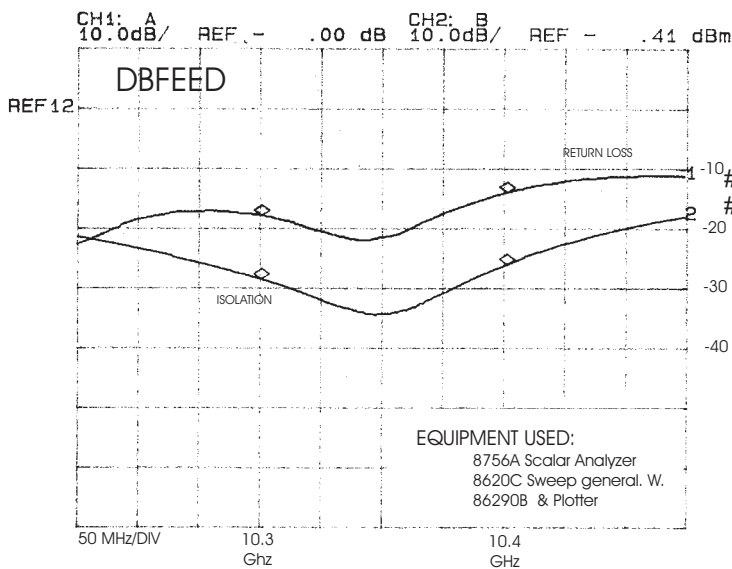


DIRECTIVE SYSTEMS

177 DIXON RD.
 LEBANON, ME. 04027
 TEL: 207-658-7758 FAX: 207-658-4337
 www.directive-systems.com

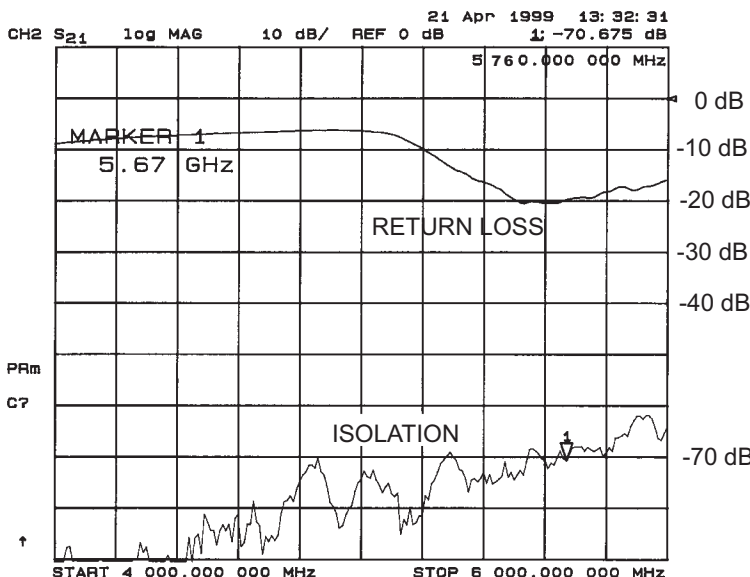
DUAL BAND W5LUA FEED FOR 5.76 & 10.368 GHz Amateur bands. Each plot displays the VSWR (return loss) and isolation between ports for the respective band. The feeds are optimized for 10 to 5.7 GHz isolation when shipped from the factory. Considerable effort has been made to produce best isolation between the ports, while maintaining high return loss. It's all a trade-off!

10 GHz isolation is quite critical and can be affected by what the feed "sees". It is always a good idea to check port to port isolation whenever you adjust the feed location on your parabolic reflector.



1 = return loss
 # 2 = isolation
 from 10 to 5.7 GHz.

Normally, the dish will have little effect on port isolation when properly installed, but unwanted reflections back into the feed can degrade the > 30 dB isolation value. These plots were made with the feed only in free space. Actual results should be the same unless there is blockage at the mouth of the feed.



5760 MHz isolation is very high and is not influenced by much, since the 10 GHz waveguide portion of the dual band feed is too small, and cannot support 5.7 GHz propagation. 70 dB is typical.

The 5760 MHz VSWR is about -18 to 20 dB or more when the 10 GHz isolation is at optimum.

EQUIPMENT:
 HP 8753D Analyzer
 7475 Plotter