Automatic 6-Band Bandpass Filter

DXE-419

DXE-419-INS Revision 2
Introduction

The DXE-419 Automatic 6-Band Bandpass Filter is designed to interface between your transceiver and amplifier or antenna and provide bandpass specific filtering. This automatic filter uses discrete inputs from a band decoder to switch in the proper band pass filter for the band you have selected. The unit is capable of handling 100 watts (under 2:1 SWR) on 160, 80, 40, 20 15 and 10 meters. The DXE-419 is in by-pass mode with no DC connected, or with the DC power connected but not turned on. Band selection can be automated with the use of a band decoder.

Features
- Power handling 100 watts with a 2:1 or better SWR
- Typical insertion loss is less than 0.5 dB
- Soft touch front panel push button controls
- LED indicators show DC power status and band selection
- Band selection can be Automatic or Manual
- DB-9 Connection on rear panel for external band decoder input
- DC power off provides a by-pass mode for the unit
- 2.1 mm power input jack requires +13.8 VDC, 300 ma (min).
- SO-239 connectors for connection to radio and amplifier/antenna
- Heavy duty chassis construction with rubber feet
- 8-14” High x 6-5/8” Wide x 10-1/4” Depth

Front Panel

PWR When DC power is connected to the rear of the unit, but the unit is not turned on, the PWR LED will be RED and the unit is in bypass mode. If the unit is turned off, or if the DC power to the unit is removed, the unit will also be in bypass mode.

When the PWR button is pushed once, the PWR LED will change from RED to GREEN.

MANU Pressing the MANU button will switch the unit into Manual Mode. MANU Led will light up RED. Filter selection is determined by which BAND switch is pressed. The selected BAND LED will light up RED.

AUTO Pressing the AUTO button will switch the unit into the Automatic Mode to be used with an external band decoder inputs. Auto LED will light up RED. The bandpass filter will be selected by the customer’s external band decoder input signal to the unit via the DB-9 input on the rear of the unit.
BAND 160, 80, 40, 20, 15, 10
In AUTO mode, the external band decoder will select a band and that band’s LED will light up RED.

In Manual Mode, pressing one of the six BAND buttons will cause that button’s RED LED to turn on indicating the band that has been selected.

Rear Panel Connections

RADIO  SO-239 connector to connect to the transceiver’s RF output
AMP/ANT  SO-239 connector to connect to the user’s Amplifier or Antenna
DC 13.8 V  2.1 mm Socket to connect +13.8 VDC, 300 ma. Center is + input
BAND IN  DB-9 Cable connection for band selection input from user’s band decoder

Insertion Loss and Out of Band Attenuation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Insertion Loss</th>
<th>SWR</th>
<th>160</th>
<th>80</th>
<th>40</th>
<th>20</th>
<th>15</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bypass</td>
<td>&lt;0.1 dB</td>
<td>&lt;1.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>160 m</td>
<td>&lt;0.4 dB</td>
<td>&lt;1.3</td>
<td>50</td>
<td>90</td>
<td>65</td>
<td>56</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>80 m</td>
<td>&lt;0.4 dB</td>
<td>&lt;1.3</td>
<td>41</td>
<td>51</td>
<td>63</td>
<td>71</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>40 m</td>
<td>&lt;0.4 dB</td>
<td>&lt;1.3</td>
<td>66</td>
<td>45</td>
<td>90</td>
<td>58</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>20 m</td>
<td>&lt;0.4 dB</td>
<td>&lt;1.3</td>
<td>52</td>
<td>48</td>
<td>70</td>
<td>65</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>15 m</td>
<td>&lt;0.5 dB</td>
<td>&lt;1.3</td>
<td>49</td>
<td>43</td>
<td>38</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 m</td>
<td>&lt;0.4 dB</td>
<td>&lt;1.3</td>
<td>58</td>
<td>46</td>
<td>36</td>
<td>62</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>
The following diagram shows the DB-9 connector as viewed on the rear of the DXE-419. Wiring from the DXE-419 to the customer’s band decoder must follow the wiring scheme shown below.

The DXE-419 is looking for a minus trigger signal from a band decoder on the pin that corresponds to the band being selected. Refer to your band decoder’s instruction manual for details and proper wiring of the band decoded signals. Improper wiring or incorrect signal levels may cause damage to the transceiver, amplifier or the DXE-419 unit which is not covered by warranty.

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**Manual Updates**

Every effort is made to supply the latest manual revision with each product. Occasionally a manual will be updated between the time your DX Engineering product is shipped and when you receive it. Please check the DX Engineering web site (www.dxengineering.com) for the latest revision manual.

**Technical Support**

If you have questions about this product, or if you experience difficulties during the installation, contact DX Engineering at (330) 572-3200. You can also e-mail us at: DXEngineering@DXEngineering.com For best service, please take a few minutes to review this manual before you call.

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