

## Times Protect® CROSS – REFERENCE

POLYPHASER (PPC)	Times-Protect® (TMS)	TIMES-PROTECT® ADVANTAGES	NOTES
AL-LSXM AL-LSXM-MA AL-LSXM-ME	LP-WBX-NFF LP-WBX-NMP LP-WBX-NFF	<ul style="list-style-type: none"> <li>• White Bronze plated body vs. aluminum housing</li> <li>• Brass connectors vs. aluminum connectors</li> <li>• 20kA maximum surge current rating vs. PPC 10kA</li> <li>• Lower energy and voltage throughput</li> <li>• Higher RF power, 50W vs. 10W</li> <li>• Larger ground surface area for bulkhead mounting and grounding</li> <li>• Weatherization gasket provided for bulkhead mounting</li> <li>• Accommodates LP-BFDN-CW bracket for flange installation</li> </ul>	
AL-LSXM-RT-ME	LP-GTV-RTFM	<ul style="list-style-type: none"> <li>• GTV is bidirectional with DC pass and turn on voltage of 180V</li> <li>• White bronze plated vs. PPC Aluminum</li> <li>• 150 Watts</li> </ul>	
BFD BFN	LP-BFDN-CW LP-BFDN-CW	<ul style="list-style-type: none"> <li>• Brass, White Bronze plated LP-BFDN-CW vs. Aluminum on PPC</li> <li>• The BFD and BFN have different mounting hole patterns</li> <li>• LP-BFDN-CW having identical hole pattern for N and DIN fit</li> </ul>	
DSXL (OBS) DSXL-MA (OBS) DSXL-ME (OBS)  DSXL-NS  DSXL-T-MA	LP-STRH-NFF LP-STRH-NMS LP-STRH-NMP  LP-STRH-NFF + N/SMA adapt LP-STRH-NFF + N/TNC adapt	<ul style="list-style-type: none"> <li>• Broader frequency range (700-2700MHz vs. 800-2300MHz)</li> <li>• Lower energy throughput (700pJ vs. &lt;0.5uJ)</li> <li>• Better PIM &lt;-160dBc at 900/1800/2100MHz vs. non rated</li> <li>• Much higher surge current rating 50kA (as tested) vs. 20KA for PPC</li> <li>• Much higher RF power @ 500W vs. 300W for PPC</li> <li>• Weatherization (body) to IP67 vs. IP65 for PPC</li> </ul>	
DSXL-D (OBS) DSXL-D-MA (OBS) DSXL-D-ME (OBS)	LP-STRH-DFF LP-STRH-DMS LP-STRH-DMP	<ul style="list-style-type: none"> <li>• Broader frequency range (700-2700MHz vs. 800-2300MHz)</li> <li>• Lower energy throughput (700pJ vs. &lt;0.5uJ)</li> <li>• Better PIM &lt;-160dBc at 900/1800/2100MHz vs. non-published</li> <li>• Much higher surge current rating 50kA (as tested) vs. 30KA for PPC</li> <li>• Higher RF power @ 700W vs. 500W for PPC</li> <li>• Weatherization (body) to IP67 vs. IP65 for PPC</li> </ul>	
DT-NFF	LP-GTR-NFF-23	<ul style="list-style-type: none"> <li>• 150V PPC vs. 230V TMS LP-GTR-NFF</li> <li>• Higher power handling</li> <li>• Better IL and RL than PPC</li> <li>• Both N Female connectors elongated vs. PPC</li> <li>• Max surge 20kA vs. PPC 4kA</li> </ul>	
DGXZ+06-NFNF-A, and -B DGXZ+06-NFNM-A and -B DGXZ+06-NMNF-A and -B  DGXZ+06TTF-A No equivalent No equivalent No equivalent	LP-GPX-05-NFF LP-GPX-05-NFM LP-GPX-05-NFM  LP-GPX-05-TFF LP-GPX-05-TFM LP-GPX-05-SFF LP-GPX-05-SFM	<ul style="list-style-type: none"> <li>• White Bronze plated body vs. aluminum housing</li> <li>• Smaller foot print with lower weight</li> <li>• Lower energy throughput</li> <li>• Better Insertion Loss and Return Loss</li> <li>• Extra grounding ring supplied for suspended installation</li> <li>• Accommodates LP-BFDN-CW bracket for flange installation</li> <li>• Times Protect units furnished with N, TNC and SMA connector options</li> </ul>	
GTH-NFM-AL	LP-GTR-NFM-35	<ul style="list-style-type: none"> <li>• Higher RF power of 550W vs 300W PPC</li> <li>• 20kA multiple for TMS vs 20kA single shot for PPC.</li> </ul>	Customer to verify operating Frequency of network. TMS Frequency range (DC-3GHz).
GT-DFF-AL (Spike Guard) (OBS) GT-DFM-AL (Spike Guard) (OBS)	LP-GTR-DFF LP-GTR-DFM	<ul style="list-style-type: none"> <li>• Weatherization (body) to IP67 vs. IP65 for PPC</li> <li>• Solid brass body vs. aluminum for PPC</li> <li>• White bronze plating vs. aluminum for PPC</li> <li>• Replaceable protection component vs. non-replaceable with PPC</li> <li>• Universal mounting/grounding bracket included vs. sold separately by PPC</li> </ul>	

<p>GT-NFF-AL (Spike Guard) GT-NFM-AL (Spike Guard) GT-NFSF-AL</p> <p>GT-TFF-AL (OBS) GT-TFM-AL (OBS)</p>	<p>LP-GTV-NFF LP-GTV-NFM LP-GTV-NFF + N/SMA adaptor LP-GTV-TFF LP-GTV-TFM</p>	<ul style="list-style-type: none"> <li>• Broader frequency range coverage</li> <li>• White Bronze Plated body vs. Aluminum PPC</li> <li>• Elongated female connectors</li> </ul>	
<p>IS-B50LN-C0, -C1 and -C2 IS-50NX-C0, -C1 and -C2 IS-NEMP-C0, -C1 and -C2</p> <p>IS-B50LN-C0-MA, -C1-MA and -C2-MA IS-50NX-C0, -C1 and C2-MA IS-NEMP-C0-MA, -C1-MA and -C2-MA</p> <p>IS-B50LN-C0-ME, -C1-ME and -C2-ME IS-50NX-C0-ME, C1- and -C2-ME IS-NEMP-C0-ME, -C1-ME and -C2-ME</p> <p>No weatherized versions available</p>	<p>LP-BTR-NFF LP-BTR-NFF LP-BTR-NFF</p> <p>LP-BTR-NMS LP-BTR-NMS LP-BTR-NMS</p> <p>LP-BTR-NMP LP-BTR-NMP LP-BTR-NMP</p> <hr/> <p>LP-BTRW-NFF LP-BTRW-NMS LP-BTRW-NMP</p>	<ul style="list-style-type: none"> <li>• All LP-BTR-N models for user frequencies over 20MHz would replace the IS models with designation of "C0" (10-700MHz)</li> <li>• Lower Insertion Loss and Return Loss</li> <li>• Brass, White bronze body plating vs. PPC aluminum</li> <li>• Bulkhead and flange universal adaptor with weatherization gasket included for feed-through installations. PolyPhaser devices need to be ordered with bulkhead or flange bracket orientation increasing the number of parts to satisfy various installation requirements</li> <li>• All female connectors elongated for bulkheads up to ¼" thick vs PPC only one Female connector elongated</li> </ul> <hr/> <p>IP67 Weatherized versions of the LP-BTR family, otherwise essentially the same performance</p>	<p>Universal mounting bracket for bulkhead and flange included in the LP-BTR-N series. Self captivated screws in the bracket. This design feature allows for any installation (flange, bulkhead and suspended).</p> <hr/> <p>Includes universal mounting/grounding bracket; no known equivalent product</p>
<p>LSXL LSXL-ME LSXM-NS</p>	<p>LP-WBX-NFF LP-WBX-NMP LP-WBX-NFF + NM to SMA adaptor</p>	<ul style="list-style-type: none"> <li>• The LP-WBX return loss 1.2:1, vs. PPC 1.3:1</li> <li>• WBX frequency (2-6GHZ) while PPC 1.6-3.8 than 4.2-6GHz not continuous</li> </ul>	
<p>RGT RGT-ME</p> <p>RGT-DFM</p>	<p>LP-GTR-NFF-23 LP-GTR-NFM-23</p> <p>LP-GTR-DFM-35</p>	<ul style="list-style-type: none"> <li>• Broader frequency range (DC-3000MHz vs. DC-2400MHz) for PPC</li> <li>• Weatherization (body) to IP67 vs. IP65 for PPC</li> <li>• Solid brass body with White Bronze plating vs. Aluminum body for PPC</li> <li>• Universal mounting/grounding bracket included vs. sold separately by PPC</li> <li>• Three different voltages and power ratings on TMS GTR series.</li> <li>• TMS much better RL and IL than PPC</li> </ul>	<p>This comparison is for the replaceable GT design from PPC, not the aluminum N type.</p>
<p>TSX-4310FF TSX-4310FM (bidirectional) TSX-4310FM (bidirectional)</p>	<p>LP-STRH-43FF LP-STRH-43MS LP-STRH-43MP</p>	<ul style="list-style-type: none"> <li>• Better surge performance</li> <li>• 100% PIM tested</li> <li>• Bulkhead to Flange adaptor included with each protector</li> </ul>	<p>Times designs are not bidirectional and customer needs to define connector on the surge and protected side.</p>
<p>TSX-DFF TSX-DFM (bidirectional) TSX-DFM (bidirectional)</p> <p>TSX-DFF-BF TSX-DFM-BF</p>	<p>LP-STRH-DFF LP-STRH-DMS LP-STRH-DMP</p> <p>LP-STRH-DFF + LP-BFDN-CW LP-STRH-DMP/DMS + LP-BFDN-CW</p>	<ul style="list-style-type: none"> <li>• Coverage for LTE and Public Safety frequencies (700-2700MHz)</li> <li>• Lower energy throughput (700pJ vs. 5nJ)</li> <li>• Better PIM &lt;-160dBc at 900/1800/2100MHz vs. -155dBc</li> <li>• Higher surge current rating 50kA (as tested) vs. 30KA single shot for PPC</li> <li>• Weatherization (body) to IP67</li> <li>• PolyPhaser TSX-D series IL/RL/VSWR performance frequency dependent</li> </ul>	<p>Times designs are not bidirectional and customer needs to define connector on the surge and protected side.</p>
<p>TSX-NFF TSX-NFM (bidirectional) TSX-NFM (bidirectional)</p> <p>TSX-NFF-P TSX-NFM-P (bidirectional)</p> <p>TSX-NFM-BF (bidirectional)</p>	<p>LP-STRH-NFF LP-STRH-NMS LP-STRH-NMP</p> <p>LP-STRH-NFF + LP-BFDN-CW LP-STRH-NMP/NMS + LP-BFDN-CW</p> <p>LP-STRH-NMS + AL-BFDN-CW LP-STRH-NMP + LP-BFDN-CW</p>	<ul style="list-style-type: none"> <li>• Coverage for LTE and Public Safety frequencies (700-2700MHz)</li> <li>• Lower energy throughput (700pJ vs. 5nJ)</li> <li>• Better PIM &lt;-160dBc at 900/1800/2100MHz vs. -155dBc</li> <li>• Higher surge current rating 50kA (as tested) vs. 40KA single shot for PPC</li> <li>• Weatherization (body) to IP67</li> <li>• TSX-NFF and TSX-NFM are not PIM rated</li> <li>• PIM applies to the TSX-NFF-P and TSX-NFM-P</li> </ul>	<p>Times designs are not bidirectional and customer needs to define connector on the surge and protected side.</p>

<p>TUSX-DFF TUSX-DFM (bidirectional) TUSX-DFM (bidirectional)</p> <p>TUSX-NFF TUSX-NFM (bidirectional) TUSX-NFM (bidirectional)</p>	<p>LP-HBX-DFF LP-HBX-DMS (M on surge) LP-HBX-DMP (Male on equipment)</p> <p>LP-HBX-NFF LP-HBX-NMS (Male on surge) LP-HBX-NMP (Male on protected)</p>	<ul style="list-style-type: none"> <li>• White Bronze plated body</li> <li>• HBX frequency coverage 100-700MHz</li> </ul>	<p>Times designs are not bidirectional and customer needs to define connector on the surge and protected side.</p>
<p>UHF50HN (OBS) VHF50HN</p> <p>UHF50HN-MA (OBS) VHF50HN-MA</p> <p>UHF50HN-ME (OBS) VHF50-HN-ME</p>	<p>LP-HBX-NFF LP-HBX-NFF</p> <p>LP-HBX-NMS LP-HBX-NMS</p> <p>LP-HBX-NMP LP-HBX-NMP</p>	<ul style="list-style-type: none"> <li>• Three Times Protect units replace six PolyPhaser parts</li> <li>• Frequency (100-700MHz)</li> <li>• White Bronze plated brass bodies vs. Aluminum</li> <li>• Hardware kit could be moved to either side of device in the F/F configuration</li> <li>• Energy throughput 1.4uJ vs. 10uJ for PolyPhaser</li> </ul>	
<p>VHF50D-PGR VHF50D-MA-PGR</p>	<p>LP-HBX-DFF LP-HBX-DMS</p>	<ul style="list-style-type: none"> <li>• Verify PIP (peak instantaneous power) requirements</li> </ul>	
<p>VHF50-HD VHF50-HD-MA No equivalent</p>	<p>LP-HBX-DFF LP-HBX-DMS LP-HBX-DMP</p>	<ul style="list-style-type: none"> <li>• Frequency coverage extended to 700MHz (PolyPhaser 100-512MHz)</li> <li>• White Bronze plated brass body vs. Aluminum</li> <li>• Hardware kit can be moved to either side of the device with F/F configuration</li> <li>• Lower energy throughput than PolyPhaser</li> </ul>	<p>Bulkhead to Flange adaptor Included with protector.</p>