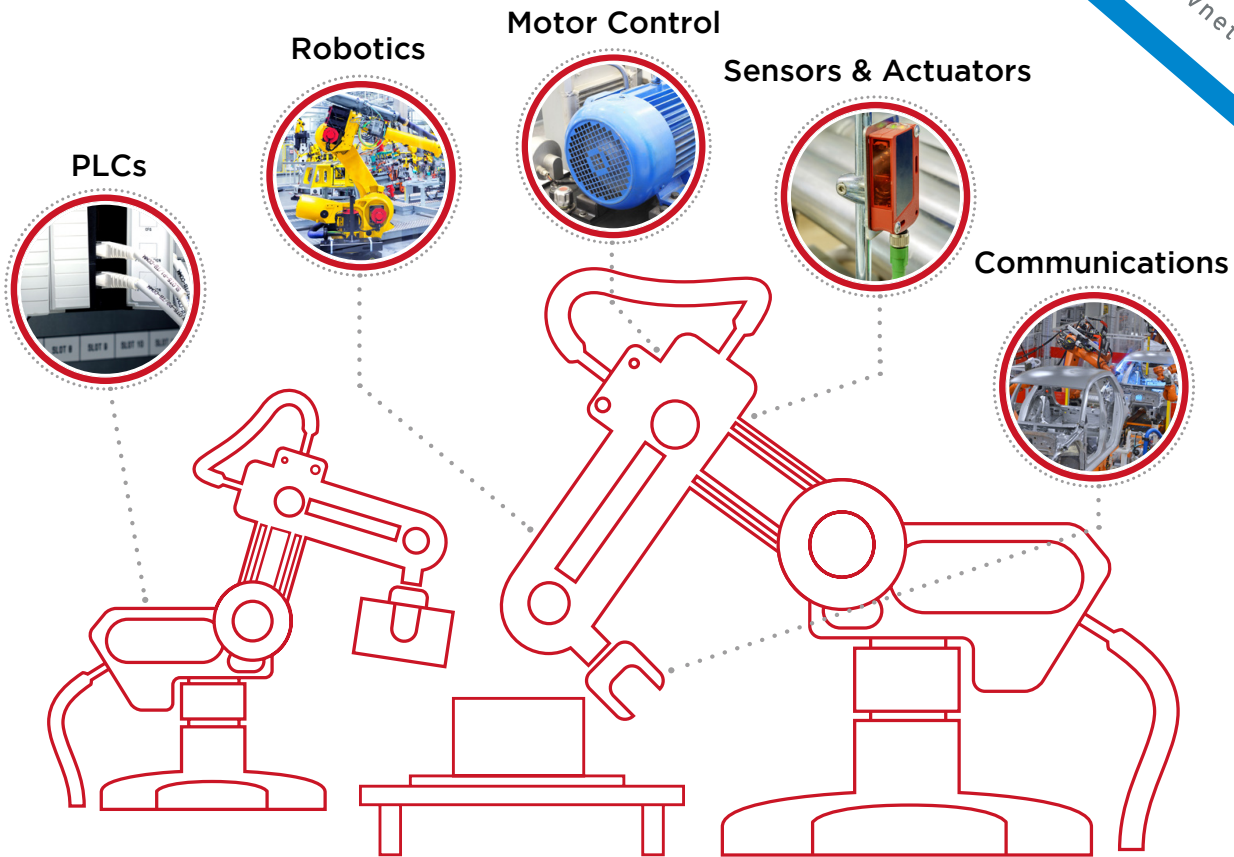




presented by  
**EBV Elektronik**  
| An Avnet Company |



• Optocouplers

• Industrial Fiber

• Encoders

## Upgrade Your Design

New Packages  
More Features  
Better Performance



All statements are without any engagement. Subject to modifications and amendments. P-263-E-03-2020-v3



Competitor Parts	Existing Parts	Upgrade Part	Upgrade Features	Footprint Information
<b>Gate Drive</b>				
TLP358F TLP350F FOD3120T PS9552L1/L2	HCNW3120 ACNW3190 ACNW3130	ACNW3430 ACNW3410 ACNU-3430 ACNU-3410	<ul style="list-style-type: none"> <li>Up to 5A max. peak output current</li> <li>Very High CMR (100kV/μs)</li> <li>UVLO with VE reference for negative power supply</li> <li>Low Propagation Delay (&lt;150ns)</li> <li>40% smaller 11mm SS08 package (ACNU)</li> </ul>	Pin layout change Smaller footprint
TLP350, TLP5754/5774, FOD3120, PS9552, PS9505, V03120 LTV-3120, LTV343W IED160x12AF, Si823x*, Si826x, ADuM7223*	ACPL-T350 ACPL-J313 ACPL-J312 HCPL-3120 HCPL-3180 ACPL-H312/K312	ACPL-H342/ACPL-K342 ACPL-P341/ACPL-W341 ACPL-P343/ACPL-W343 ACPL-W346/ACPL-P346 ACPL-P349/ACPL-W349	<ul style="list-style-type: none"> <li>Rail-to-Rail output voltage</li> <li>Integrated Active Miller Clamp (ACPL-x342)</li> <li>Lower Propagation Delay</li> <li>Anti-Cross conduction</li> <li>Very High CMR (up to 50kV/μs)</li> </ul>	Smaller footprint
TLP351, TLP701/705, TLP5701, FOD3181, FOD8314, PS9506, PS9306 Si823x*, Si826x	HCPL-0302 HCPL-0314 HCPL-J314 HCPL-3150/3140 HCPL-3151/3141* ACPL-P302/W302 ACPL-P314/W314	ACPL-P340/ACPL-W340 ACPL-P345/ACPL-W345 ACPL-P347/ACPL-W347	<ul style="list-style-type: none"> <li>Rail-to-Rail output voltage</li> <li>Low Propagation Delay (&lt;200ns)</li> <li>50% smaller package size</li> <li>8mm Creepage and Clearance (ACPL-W3xx)</li> </ul>	Smaller footprint
TLP5214/5231, FOD8316, FOD8318, FOD8332, FOD8333, PS9402 Si8285/86, ADuM4136/4135, ISO5451/5452/5500/5851/5852	HCPL-316J ACPL-330J ACPL-333J ACPL-331J ACPL-332J	ACPL-352J	<ul style="list-style-type: none"> <li>5A max. peak output current</li> <li>Rail-to-rail Dual output</li> <li>SiC/GaN MOSFET ready</li> <li>Functional Safety Reporting</li> <li>Integrated Active Miller Clamp</li> </ul>	Pin layout change
		ACPL-302J	<ul style="list-style-type: none"> <li>Integrated DC-DC Controller for Floating power supply</li> <li>Rail-to-Rail output voltage</li> <li>DESAT and UVLO detection with isolated fault feedback</li> <li>Integrated Active Miller Clamp</li> </ul>	Pin layout change
		ACPL-337J ACPL-336J ACPL-335J (Power MOSFET)	<ul style="list-style-type: none"> <li>Up to 4A maximum peak output current</li> <li>Rail-to-Rail output voltage</li> <li>DESAT and UVLO detection with isolated fault feedback</li> <li>Integrated Active Miller Clamp</li> </ul>	Pin layout change
		ACPL-339J	<ul style="list-style-type: none"> <li>Dual Output drive for external NMOS and PMOS buffer</li> <li>Integrated DESAT Detection</li> <li>Fault + UVLO status feedback</li> </ul>	Pin layout change
PSS9905 UCC53x0	HCNW3120 ACNV3130	ACNT-H343	<ul style="list-style-type: none"> <li>Market highest insulation voltage 2262V<sub>peak</sub></li> <li>15mm creepage &amp; clearance</li> <li>Up to 5A max. peak output current</li> <li>Very High CMR (100kV/μs)</li> <li>UVLO with VE reference for negative power supply</li> <li>Low Propagation Delay (&lt;150ns)</li> </ul>	Smaller footprint

\* Dual Channel

**Digital Optocouplers**

**Low Power 1MBd**

FODM453 TLP109, TLP112, TLP114 PS8101, PS8821, PS9113, PS9122, PS9123	6N135/6N136 HCPL-05xx HCPL-253x	ACPL-M50L/ACPL-M51L ACPL-W50L	<ul style="list-style-type: none"> <li>Low forward current (IF &gt; 3 mA min)</li> <li>High CTR ratio &gt;90% min @ IF = 3 mA</li> <li>Wide temperature range (-40°C to 105°C)</li> <li>Wide supply voltage (2.7 V to 24 V)</li> </ul>	Smaller footprint
	HCPL-x53x	ACPL-054L	<ul style="list-style-type: none"> <li>Low supply voltage down to 2.25V and 4-pin configurable (ACPL-M51L)</li> <li>Excellent CMR performance 15kV/μs @ Vcm 1500V</li> </ul>	Drop-in replacement
TLP714F, TLP719F PS8302, PS9313	HCPL-053x HCPL-253x	ACPL-K54L	<ul style="list-style-type: none"> <li>Offer higher working insulation voltage 1140 V<sub>peak</sub>, isolation Voltage, 5000 V<sub>rms</sub> (ACPL-W50L/K54L)</li> </ul>	Smaller footprint
CNY64, VOW13x / VOW2611	HCNW135/136	ACNU-250L	<ul style="list-style-type: none"> <li>Wider 11mm creepage and 10.5 mm clearance</li> <li>Wider Operating Temperature up to 105°C</li> <li>Lower supply voltage at 3.3V</li> <li>Higher CMR</li> </ul>	Smaller footprint
TLP2303, TLP2403 HCPL273x, MCL273x	HCPL-270x/4701 HCPL-273x/4731	ACPL-K70A ACPL-K73A	<ul style="list-style-type: none"> <li>Wider 8mm creepage/ clearance</li> <li>Wider Operating Temperature up to 105°C</li> </ul>	Pin layout change

**Low Power 5MBd**

SFH6720T, SFH6721, TLP105, TLP2355, TLP2105, TLP2405	HCPL-0201/0211	ACPL-M21L ACPL-O21L	<ul style="list-style-type: none"> <li>Low Forward Current (IF@1.6mA min), allowing direct drive from microcontroller without an input buffer</li> <li>Low Supply Current (IDD@1.ImA max.)</li> </ul>	Smaller footprint Drop-in replacement
	HCPL-220x/221x	ACPL-W21L	<ul style="list-style-type: none"> <li>Low Supply Voltages (VDD @ 2.7 – 5.5V), with support to go lower to 2.5V</li> <li>S05 package to reduce PCB board space and cost</li> <li>Min CMR at 25kV/μs @ Vcm 1000V to preserve data integrity under noisy environment</li> <li>Wide Temperature range (-40°C to 105°C)</li> </ul>	Smaller footprint
SFH6731, SFH6732	HCPL-223x	ACPL-O24L ACPL-K24L	<ul style="list-style-type: none"> <li>Low Supply Voltages (VDD @ 2.7 – 5.5V), with support to go lower to 2.5V</li> <li>S05 package to reduce PCB board space and cost</li> <li>Min CMR at 25kV/μs @ Vcm 1000V to preserve data integrity under noisy environment</li> <li>Wide Temperature range (-40°C to 105°C)</li> </ul>	Smaller footprint

Competitor Parts	Existing Parts	Upgrade Part	Upgrade Features	Footprint Information
<b>Ultra Low Power 10MBd</b>				
FODM8061 TLP2361, TLP2366, TLP2468, TLP2160, TLP2161	HCPL-M6xx	ACPL-M61L/ACPL-M62L APL-M61M	<ul style="list-style-type: none"> <li>• More than 80% power saving.</li> <li>• Low forward current (If) to allow direct drive from microcontroller.</li> <li>• Wide temperature range (-40°C to 105°C).</li> <li>• Wider supply voltage (2.5V-5.5V).</li> <li>• CMOS output to eliminate pull-up resistor.</li> <li>• Open-drain output (ACPL-M62L)</li> </ul>	Drop-in replacement
	HCPL-060x	ACPL-061L		Drop-in replacement
	HCPL-061x			Drop-in replacement
	HCPL-063x HCPL-0661	ACPL-064L		Drop-in replacement
FOD8163T TLP2768F, TLP2766F PS9324L2	HCPL-260x	ACPL-W61L/ACPL-C61L	<ul style="list-style-type: none"> <li>• Market highest insulation voltage 2262Vpeak</li> <li>• 14.2mm creepage &amp; clearance in compact stretched S08</li> <li>• High transient overvoltage 12,000Vpeak</li> <li>• Lowest power consumption &lt;20mW</li> </ul>	Smaller footprint
	HCPL-261x			Smaller footprint
	ACPL-W611			Smaller footprint
	ACPL-W60L			Smaller footprint
	ACPL-P611			Smaller footprint
	HCPL-263x	ACPL-K64L		Smaller footprint
	ACPL-K63L			Smaller footprint
	HCPL-4661			Smaller footprint
	ACPL-W60L/W611/ P611, 6N137, HCPL- 260L/2601/2611, HCPL-261A/261N	ACPL-C61L ACPL-W61L		Smaller footprint
FOD8160 PS9924	HCNW137/2601/2611	ACNW261L	<ul style="list-style-type: none"> <li>• Market highest insulation voltage 2262Vpeak</li> <li>• 14.2mm creepage &amp; clearance in compact stretched S08</li> <li>• High transient overvoltage 12,000Vpeak</li> <li>• Lowest power consumption &lt;20mW</li> </ul>	Drop-in replacement
	ACNW261L	ACNT-H61L		Stretched S08 package
	ACNV2601			
PS9351L2, PS9309L2, TLP2766F, TLP2768F x 2	ACPL-W61L x2	ACFL-6211U/ACPL-6212U	<ul style="list-style-type: none"> <li>• Compact size in fine-pitch (0.8mm) in Stretched S012 package, reducing PCB Board space</li> <li>• Extended Temperature range up to 125°C</li> <li>• Bi-directional Feature</li> </ul>	Smaller footprint

### High Speed Family (>12.5MBd)

	HCPL-0708	ACPL-071L	<ul style="list-style-type: none"> <li>• Flexible supply voltages (3.3V/5V)</li> <li>• Lower Propagation Delay (&lt;40ns)</li> <li>• Wide temperature (-40°C to 105°C)</li> <li>• Glitch-Free Output</li> </ul>	Drop-in replacement
	HCPL-0738	ACPL-074L		
	HCPL-0708	ACPL-M75L	<ul style="list-style-type: none"> <li>• Flexible supply voltages (3.3V/5V)</li> <li>• Lower Propagation Delay (&lt;40ns)</li> <li>• Wide temperature (-40°C to 105°C)</li> <li>• Glitch-Free Output</li> </ul>	Smaller footprint
	HCPL-2400	ACPL-W70L	<ul style="list-style-type: none"> <li>• Flexible supply voltages (3.3V/5V)</li> <li>• Lower Propagation Delay (&lt;40ns)</li> <li>• Wide temperature (-40°C to 105°C)</li> <li>• Smaller 8mm C/C package (Stretched S06)</li> <li>• Glitch-Free Output</li> <li>• Lower Speed (15MBd)*</li> </ul>	Smaller footprint
	HCPL-2430	ACPL-K73L	<ul style="list-style-type: none"> <li>• Flexible supply voltages (3.3V/5V)</li> <li>• Lower Propagation Delay (&lt;40ns)</li> <li>• Wide temperature (-40°C to 105°C)</li> <li>• Smaller 8mm C/C package (Stretched S08)</li> <li>• Glitch-Free Output</li> <li>• Lower Speed (15MBd)*</li> </ul>	Smaller footprint
FOD0720, FOD8012A	HCPL-0710/20/21	ACPL-077L	<ul style="list-style-type: none"> <li>• Flexible supply voltages (3.3V/5V)</li> <li>• Wide temperature (-40°C to 105°C)</li> <li>• Lower PWD (&lt;6ns) (ACPL-077L)</li> <li>• 3.75kViso Bi-directional in &lt;2mm low height (ACSL-7210)</li> </ul>	Drop-in replacement for ACPL-077L
	ACPL-072L	ACSL-7210		
	HCPL-7710/20/21	ACPL-772L		Bi-directional (ACSL-7210)

Competitor Parts	Existing Parts	Upgrade Part	Upgrade Features	Footprint Information
<b>Isolation Amplifier</b>				
AMC1204/B, AMC1305M25 AD7401, AD7403	HCPL-786x	ACPL-796J	<ul style="list-style-type: none"> <li>External clocking (up to 20MHz) for multichannel synchronization</li> </ul>	SO-16 footprint
AMC1305L25 AD7405		ACPL-798J	<ul style="list-style-type: none"> <li>Up to 25MHz external clocking</li> <li>LVDS clock and data interface</li> </ul>	
AMC1203/B AD7400/A, AD7402 TLP7830	HCPL-7860 ACPL-C797 ACPL-7970	ACPL-C799 / ACPL-C740	<ul style="list-style-type: none"> <li>50mV / 250mV linear range</li> <li>10MHz / 20MHz internal clock</li> <li>16-bits resolution no missing codes (12 bits ENOB)</li> <li>77dB SNR (typ)</li> <li>1.3uV / C offset drift (max.)</li> <li>3V to 5.5V wide supply range for digital interface</li> </ul>	
AMC1200/B TLP7820, TLP790 Si8920 PS8551	HCPL-7800 HCPL-7800A HCPL-7840 ACPL-C78x	ACPL-C79B, ACPL-C79A, ACPL-C790 ACPL-790B, ACPL-790A, ACPL-7900	<ul style="list-style-type: none"> <li>30.5%/31%/33% gain accuracy</li> <li>Better linearity</li> <li>30% smaller package size</li> <li>8 mm Creepage and Clearance</li> <li>1414 Vpeak working insulation voltage</li> </ul>	Smaller footprint
ISO122 AMC1200/B TLP7820		ACPL-C87A ACPL-C87B ACPL-C870	<ul style="list-style-type: none"> <li>0-2V input range voltage sensor</li> <li>3.5% / 31% / 33% gain accuracy</li> <li>-35 ppm/°C Low Gain Drift</li> <li>-0.3 mV Input Offset Voltage</li> <li>3 V to 5.5 V Wide Supply Range for Output Side</li> </ul>	Smaller footprint
		HCPL-788J / HCPL-785J	<ul style="list-style-type: none"> <li>0-2V input range voltage sensor</li> <li>30.5%/31%/33% gain accuracy</li> <li>-35 ppm/°C Low Gain Drift</li> <li>-0.3 mV Input Offset Voltage</li> <li>3 V to 5.5 V Wide Supply Range for Output Side</li> </ul>	
		HCPL-7510	<ul style="list-style-type: none"> <li>3.3% gain accuracy</li> <li>Overcurrent fault detection</li> </ul>	
		HCPL-7520	<ul style="list-style-type: none"> <li>3.5% gain accuracy</li> <li>Single Ended Output</li> </ul>	
AMC120/B TLP7820 Si8920	ACPL-C790 ACPL-C79A ACPL-C79B	ACNT-H79A ACNT-H790	<ul style="list-style-type: none"> <li>Market highest insulation voltage 2262Vpeak</li> <li>14.2mm creepage &amp; clearance</li> <li>-50ppm/° Low Gain Drift</li> <li>3.1% / 3.3% gain accuracy</li> </ul>	Stretched S08 package
<b>Intelligent Power Module Interface Optocoupler</b>				
SFH6345 TLP550, TLP559, TLP759	HCPL-4502 HCPL-4503	ACPL-K453	<ul style="list-style-type: none"> <li>8 mm Creepage and Clearance</li> <li>50% smaller package size</li> </ul>	Smaller footprint
PS8302L2 TLP719F	HCPL-4504	ACPL-W454		Smaller footprint
PS9213, PS9313L2 TLP719F	HCPL-4506	ACPL-W456		Smaller footprint
PS9303L2 TLP706, TLP715F, TLP718F	ACPL-4800	ACPL-W480		Smaller footprint
		ACPL-P454		Smaller footprint
		ACPL-P456		Smaller footprint
		ACPL-P480		Smaller footprint
TLP105, TLP108	HCPL-M452/3/4/6	ACPL-M484 ACPL-M483	<ul style="list-style-type: none"> <li>Higher CMR 30kV/μs</li> <li>10MBd speed</li> <li>Totem-pole output, positive logic (M484), negative logic (M483)</li> </ul>	Faster speed
PS9309L2 TLP715F, TLP718F	HCPL-4502/03/04/06 HCPL-0452/53/54/66	ACPL-W484 ACPL-W483	<ul style="list-style-type: none"> <li>8 mm Creepage and Clearance</li> <li>Higher CMR 30kV/μs</li> <li>10MBd speed</li> <li>Totem-pole output, positive logic (W484), negative logic (W483)</li> </ul>	Faster speed
VOW135, VOW136	HCNW4502/3/4/6	ACNU-4803 ACNU-4804	<ul style="list-style-type: none"> <li>Wider 11mm creepage and 10.5 mm clearance</li> <li>Wider Operating Temperature up to 105°C</li> <li>Higher CMR</li> </ul>	Smaller footprint
FODM452, FODM453 TLP109, TLP112, TLP114 PS9113, PS9122	HCPL-M452/53/54	ACPL-M43U	<ul style="list-style-type: none"> <li>Wide temperature (-40°C to 105°C)</li> <li>Low LED input drive current IF 10mA</li> </ul>	Drop-in replacement
	HCPL-M456	ACPL-M46U	<ul style="list-style-type: none"> <li>Wide temperature (-40°C to 105°C)</li> </ul>	Drop-in replacement

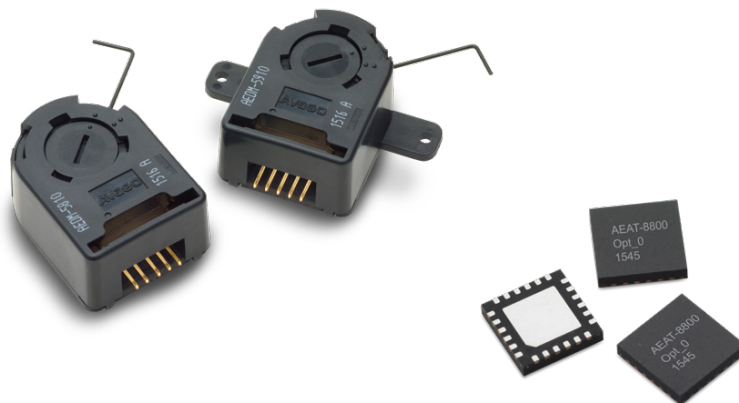
Note: Drop-in-replacement means no PCB board redesign is required

Upgrade	Feature	Benefit
<b>High Voltage Insulation</b>		
<b>Improved Isolation/Insulation</b> Ability to protect surrounding circuitry against physical damages resulting from differential voltages.	ACNV/ACNT family offers highest available <b>working voltage</b> ratings with regulatory approval per <b>IEC/EN/DIN EN 60747-5-5 of 2262 V peak</b> .	Meets international safety regulations and standards. Provides better isolation and overall <b>safety</b> performance.
<b>Noise Isolation</b>		
<b>High CMR</b> Common-mode transient rejection or signal isolation of data through suppression of noise transients.	Offers guaranteed CMR performance up to 100 kV/μs which is the highest available in the market.	Improves system performance, and <b>reliability</b> . More robust systems and better <b>data integrity</b> meet EMI and ESD requirements.
<b>Power Consumption</b>		
<b>Drive Current, I<sub>f</sub></b> Low Drive Current, LED drive current.	Offers the <b>lowest I<sub>f</sub></b> (up to 40 μA) devices in the market and broadest HCMOS compatibility.	<b>Eliminates additional LED drive circuitry</b> . Improves system efficiency and reduces power consumption and LED degradation.
<b>Lower Power Supply</b> Lower power supply (3.3V)	Lower the <b>power consumption</b> and meets JEDEC low voltage requirements.	Up to <b>50%</b> energy saving.
<b>Flexible Supply Voltages</b> (3.3V/5V)	Support a combination of two different supply voltages at the input and output.	<b>Built-in internal level shifter</b> , eliminate the need of extra power supply. 3.3V or 5V. 3.3V helps to improve the overall power consumption.
<b>Temperature</b>		
<b>Temperature</b> The DC, speed performance and the reliability information is ensured at the specific temperature range.	Support up to <b>-40°C to 125°C</b> temperature range.	Allow extreme temperature operation.
<b>Speed Benefits</b>		
<b>Propagation Delay, tp</b> Describes how quickly a logic signal can propagate through the system.	High speed digital optocouplers to meet wide range of applications with <b>tp as low as 22 ns</b> .	Increase <b>switching efficiency</b> and better speed performance.
<b>Upgrade Pulse Width Distortion, PWD</b> PWD is the difference between tPHL and tPLH and often determines the maximum data rate capability of a transmission system.	The lowest PWD offered by optocoupler is <b>2 ns</b> .	To ensure signal <b>data integrity</b> over long bus line.
<b>Package and Space Savings</b>		
<b>Multi-Channels, Bi-directional Features</b>	Integrated <b>dual, triple, quad</b> with <b>bi-directional</b> channels offers in small S08 and S016 package. Bi-directional 2 channels with LED direct drive in Stretched S012 package	The integrated bi-directional channels help in <b>space savings</b> and ease of designs.
<b>Surface Mount Device</b> SMD permits more component density than DIP.	Smaller package to deliver the same functionality as standard DIP. True surface mount technology and standard footprint.	Lower <b>assembly cost</b> , easier and faster handling as well as better solderability.
<b>ACNT 15mm Creepage/Clearance Package</b>	Compact stretched S08 package able to withstand high insulation 2,262 Vpk and transient overvoltage 12,000 Vpk	Provides <b>space savings</b> . Meets IEC/UL/CSA new/ latest revision equipment standards for C/C, insulation voltage and/or transient overvoltage needs.
<b>ACPL-P/W/H/K 8mm Creepage/Clearance Package</b> <b>ACNU 11mm Creepage/Clearance Package</b>	The package is 50% smaller than conventional DIP package. It can withstand high isolation voltages and meet regulatory requirements such as IEC/UL/ CSA standards.	Provides <b>space savings</b> . Allows high voltage surge protection. Meets many IEC/UL/CSA equipment standards that call for clearance and creepage of <b>8mm</b> .
<b>Smaller S05 Package</b>	<b>Smaller S05</b> package (as compared to existing S0-8 package)	Provides greater than <b>40% space savings</b> .



# BROADCOM® Motion Control Upgrade Parts

Existing Parts	Upgrade Part	Upgrade Features	Footprint Information
HEDS-9140	AEDT-9810	<ul style="list-style-type: none"> <li>• High Resolution of up to 5000 Counts per Revolution</li> <li>• -40°C to 115°C Operating Temperature</li> <li>• Low Power Consumption (Typical Icc: 20 mA)</li> <li>• Spatial play tolerance of 0.40mm</li> <li>• Allows motor shaft axial play of 30.15mm</li> <li>• Choice of Index Pulse Width (90° and 180°)</li> <li>• Better ESD Immunity HBM 4kV (JESD22-A114D)</li> </ul>	<ul style="list-style-type: none"> <li>• Pin Compatible to legacy HEDS-9xxx Series</li> </ul>
HEDC-55xx	AEDC-55xx	<ul style="list-style-type: none"> <li>• Available in two or three channel encoder A,B and I</li> <li>• Latching connector design</li> <li>• Single 5V supply</li> <li>• Resolution of up to 5000 CPR</li> <li>• TTL compatible, with single ended or differential output.</li> <li>• Quick assembly</li> <li>• No signal adjustment required</li> <li>• Small size -40 °C to 85 °C operating temperature</li> </ul>	<ul style="list-style-type: none"> <li>• Compatible mounting to legacy HEDC-55xx Series</li> <li>• External mounting ears option available for larger motors.</li> </ul>
HEDM-550x	AEDM-5810	<ul style="list-style-type: none"> <li>• High Resolution - up to 5000 CPR</li> <li>• Operating temperature – 40°C to +85°C</li> <li>• Quick and easy assembly</li> <li>• No signal adjustment required</li> <li>• Cost Effective solution</li> <li>• Small size</li> <li>• TTL compatible output</li> <li>• Single 5V supply with 310% tolerance</li> <li>• Differential Output (Line Driver) available with AEDL-581x Series</li> </ul>	<ul style="list-style-type: none"> <li>• Compatible mounting to legacy HEDM-55xx Series</li> <li>• External mounting ears option available for larger motors.</li> </ul>
AEDR-8320	AEDR-8723	<ul style="list-style-type: none"> <li>• Analog Output option - 2 channels differential analog output (Sin, /Sin, Cos, /Cos) and with a digital index (I) output.</li> <li>• Operating voltage of 3.3V or 5V supply</li> <li>• Built in LED current regulation, hence no external biasing resistor needed.</li> <li>• -20°C to 85°C absolute operating temperature</li> <li>• High encoding resolution: 318 (lines/inch)</li> </ul>	<ul style="list-style-type: none"> <li>• Surface mount leadless package - 3.95 mm (L) x 3.4 mm (W) x 0.9562 mm (H)</li> </ul>
AEDR-8300 AEDR-8400 AEDR-8500	AEDR-8710	<ul style="list-style-type: none"> <li>• World smallest 3 channels reflective technology encoder.</li> <li>• Digital Output option - 3 channels TTL compatible; two channel quadrature digital outputs for direction sensing and a 3rd channel, Index digital output.</li> <li>• Built in interpolator for 4x, 8x and 16x interpolation.</li> <li>• Operating voltage of 3.3V or 5V supply</li> <li>• Built in LED current regulation, hence no external biasing resistor needed.</li> <li>• -20°C to 85°C absolute operating temperature</li> <li>• Encoding resolution: 318 (lines/inch)</li> </ul>	<ul style="list-style-type: none"> <li>• Surface mount leadless package 3.95 mm (L) x 3.4 mm (W) x 0.9562 mm (H)</li> </ul>
AEAT-6600-S16	AEAT-8800-Q24	<ul style="list-style-type: none"> <li>• Smaller form factor with QFN 5mm x 5mm package</li> <li>• UVW pinout for low end commutation motor applications</li> <li>• Higher accuracy with lower step jump for absolute encoder applications</li> <li>• Lower latency for incremental encoder operations across different resolutions</li> <li>• Typically lower latency &gt; 3X</li> </ul>	<ul style="list-style-type: none"> <li>• Smaller form factor with QFN 5mm x 5mm package</li> </ul>
	AEAT-8811-Q24	<ul style="list-style-type: none"> <li>• Better performance</li> <li>• No customer offset calibration required</li> </ul>	





# BROADCOM® Motion Control Products Overview – IC, Module, Kits and Housed Encoder

## Optical Encoders

Module		Housed	
<b>Transmissive</b>			
HEDS-90/91/92x	HEDS-97xx	HEDL-90/91xx	HEDT-90/91xx, AEDT-981x (Wide range upto 5000CPR)
AEDR-83xx	AEDR-8400	AEDB/T-9140	AEDB/T-9140
AEDR-8500 (294PI, 3Ch Upto 4X interpolation)	AEDR-87xx (318PI, 3Ch, Upto 16X interpolation)	AEDR-98xx (318PI/225PI 3Ch, 1x/ Upto 16X interpolation, -40°C to 115C, 200KHz)	
<b>Reflective</b>			
<b>Transmissive</b>		<b>Reflective</b>	
AEAT-7000	AEAT-84/86AD	AEAT-60xx (10/12BITS, 256CPR)	AEAT-8800 (QFN, Lower latency, Abs Upto 16Bits/ Incr 4096CPR)
AS38 House Abs STZ3B+MT16B Energy Harvesting SSI & BISS C, RS485/ESL, OD 38mm	AS35 Kit Optical Energy Harvesting ST 20B and MT16B, RS485/ESL and BISS-C, OD35mm	AS37 Kit Optical Battery Backup ST 23B and MT16B, RS485/ESL and BISS-C, OD38mm	AS33-M50M Magnetic 18B ST+ 32b MT Energy Harvesting, OD 33mm, SSI, BISS C, RS485, -40 to 115C
<b>Optical</b>			
<b>Module</b>		<b>House</b>	
<b>Transmissive</b>		<b>Reflective</b>	
<b>Magnetic</b>		<b>IC</b>	
HEDC-55/56xx AEDC-55/56xx (Upto 5000CPR)		HEDS/HEDM-55/56xx AEDM-58xx (2 or 3Ch Upto 5000CPR)	
HEDR-54xx		ASZ2-M5XX (Bearingless house Upto 2048CPR)	
HRPG-Axxx (Rotary Pulse Generator)		AEAT-8811-Q24 (Enhance accuracy, Abs Upto 16Bits + Incr 4096CPR, No Offset CAL)	
HCTI-2017-PLC, HCTI-2052-SC		AEI-C-7272/7273/2631 (3.5V - 30V, AEI-5000 (5V, 2Mhz)	

Incremental

Absolute

Absolute House/Kit

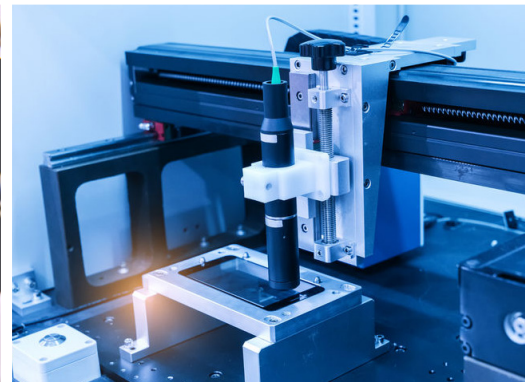


Existing Parts	Upgrade Part	Upgrade Features	Pricing Comparison	Footprint Information
<b>Versatile Link Transmitter and Receivers</b>				
HFBR-1521Z / HFBR-2521Z HFBR-1531Z / HFBR-2531Z HFBR-1521ETZ / HFBR-2521ETZ HFBR-1531ETZ / HFBR-2531ETZ HFBR-1522Z / HFBR-2522Z HFBR-1532Z / HFBR-2532Z HFBR-1522ETZ / HFBR-2522ETZ HFBR-1532ETZ / HFBR-2532ETZ	AFBR-1521CZ AFBR-2521CZ AFBR-1531CZ AFBR-2531CZ AFBR-1541CZ AFBR-2541CZ	<ul style="list-style-type: none"> <li>-40°C to +95°C temperature range</li> <li>3.3V or 5V operating voltage</li> <li>High efficient transmitter</li> <li>TTL/CMOS receiver output</li> <li>Lower power consumption</li> <li>Low propagation delay with guaranteed max. part-to-part skew</li> <li>High dynamic receiver optical input range</li> </ul>	Price Premium due to significant better features: <ul style="list-style-type: none"> <li>Industrial temp range</li> <li>Low propagation delay skew</li> <li>3.3V or 5V operation</li> <li>No Rx optical saturation</li> </ul>	Same footprint, changes to Tx driver and Rx output interface required. Optical backwards compliant, but check power budget.
HFBR-1528Z / HFBR-2528Z	AFBR-1528CZ AFBR-2528CZ	<ul style="list-style-type: none"> <li>-40°C to +95°C temperature range</li> <li>3.3V or 5V operating voltage</li> <li>High efficient transmitter</li> <li>Lower power consumption</li> <li>Low propagation delay with guaranteed max. part-to-part skew</li> <li>High dynamic receiver optical input range</li> </ul>		
HFBR-1521Z / ETZ HFBR-1522Z / ETZ	AFBR-1629Z AFBR-1639Z	<ul style="list-style-type: none"> <li>Transmitter with integrated driver</li> <li>TTL/CMOS compatible input</li> <li>High efficient transmitter</li> <li>Lower power consumption</li> <li>-40°C to +85°C temperature range</li> <li>3.3V or 5V operating voltage</li> </ul>	Price Premium due to significant better features: <ul style="list-style-type: none"> <li>Industrial temp range</li> <li>Tx integrated driver</li> </ul>	Same footprint, but digital input, no external driver required
HFBR-1528Z / HFBR-2528Z	AFBR-1629Z AFBR-2529Z	<ul style="list-style-type: none"> <li>DC to 50MBd</li> <li>Lower power consumption</li> <li>Higher EMI Immunity</li> <li>Lower propagation delay time</li> <li>Power on Reset</li> </ul>		Tx: Same footprint, but digital input, no external driver required Rx: drop-in replacement
<b>Plastic Optical Fiber (POF) Cable &amp; Connectors</b>				
HFBR-1528Z / AFBR-1529Z				
AFBR-2529Z	AFBR-2529SIZ	<ul style="list-style-type: none"> <li>Additional safety function with RSSI feature</li> </ul>	-10% price adder for RSSI	Drop-in replacement
HFBR-RUDxxxZ HFBR-EUDxxxZ	AFBR-HUDxxxZ	<ul style="list-style-type: none"> <li>Halogen Free</li> </ul>	Up to 5% cost saving	Drop-in replacement
HFBR-4501Z / HFBR-4511Z HFBR-4503Z / HFBR-4513Z HFBR-4506Z	AFBR-2418xZ AFBR-2419xZ	<ul style="list-style-type: none"> <li>Integrated quantizer</li> <li>Digital TTL/CMOS compatible output</li> <li>Analog receiver signal strength indicator output</li> <li>Reduced design effort and PCB space</li> <li>Enhanced EMC performance</li> <li>Short propagation delay</li> <li>Lower power consumption</li> <li>3.3V or 5V supply voltage</li> </ul>	<ul style="list-style-type: none"> <li>Price premium due to significant better features:</li> <li>Fully integrated Rx with digital output</li> </ul>	Same footprint, but digital output along with RSSI



Existing Parts	Upgrade Part	Upgrade Features	Pricing Comparison	Footprint Information
<b>Miniature Link Transmitters and Receivers</b>				
HFBR-1412xZ HFBR-1414xZ	HFBR-1412xPZ HFBR-1414xPZ	<ul style="list-style-type: none"> <li>• ESD enhanced device: 2kV HBM</li> </ul>	Same prices	Drop-in replacement
HFBR-2416xZ	AFBR-2418xZ AFBR-2419xZ	<ul style="list-style-type: none"> <li>• Integrated quantizer</li> <li>• Digital TTL/CMOS compatible output</li> <li>• Analog receiver signal strength indicator output</li> <li>• Reduced design effort and PCB space</li> <li>• Enhanced EMC performance</li> <li>• Short propagation delay</li> <li>• Lower power consumption</li> <li>• 3.3V or 5V supply voltage</li> </ul>	<ul style="list-style-type: none"> <li>• Price premium due to significant better features:</li> <li>• Fully integrated Rx with digital output</li> </ul>	Same footprint, but digital output along with RSSI
<b>High Galvanic Insulation Link</b>				
HFBR-3810xZ	AFBR-390525RZ	<ul style="list-style-type: none"> <li>• VDE Certification as per IEC 60747-5-5</li> <li>• Lower power consumption</li> <li>• Shorter propagation delay with guaranteed max part-to-part skew</li> </ul>	Up to 30% cost saving	Similar footprint
HFBR-3810xZ	AFBR-3905xxRZ AFBR-3950xxRZ	<ul style="list-style-type: none"> <li>• VDE Certification as per IEC 60747-5-5</li> <li>• Up to 50 kV peak transient voltage suppression</li> <li>• Up to 12 kV effective working voltage</li> <li>• Four creepage / clearance length options</li> <li>• Two speed options: DC to 5 MBd and DC to 50 MBd</li> </ul>		Different footprints
<b>Fast Ethernet POF &amp; MM GOF</b>				
AFBR-5972Z	AFBR-5972EZ AFBR-5972BZ	<ul style="list-style-type: none"> <li>• 45% lower max power consumption</li> <li>• Better EMI Immunity for highest system robustness</li> <li>• LVDS I/Os for direct interface to FPGAs</li> <li>• Up to 250MBd link rate for higher bandwidth requirements</li> </ul>	Price premium due to significant better features	Same footprint, but different electrical interface
HFBR-596IALZ	AFBR-59E4APZ-LH	<ul style="list-style-type: none"> <li>• 60% lower max. power consumption</li> </ul>	Price premium due to significant lower power consumption	Same footprint, same optical interface (-LT with reduced LOP), change of external data I/O termination required
HFBR-57E5APZ	AFBR-57E6APZ	<ul style="list-style-type: none"> <li>• 50% lower max. power consumption</li> </ul>	Price advantage possible	Drop-in replacement
AFBR-59E4APZ	AFBR-59E4APZ-HT	<ul style="list-style-type: none"> <li>• 95°C max. Temp</li> <li>• Four additional housing leads for improved signal grounding and heat dissipation (AFBR-59E4APZ)</li> </ul>	Price premium	Four additional housing leads
AFBR-57E6APZ	AFBR-57E6APZ-HT		Small price premium	Drop-in replacement





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06/01/2020



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