



# 5G solutions

## Enabling 5G From Start to Finish

We are supplying innovative specialty processes and materials across the entire 5G electronics supply chain:

- **Circuitry Solutions:** Circuit manufacturing solutions that address 5G challenges and opportunities from high speed innerlayers on exotic board materials to circuit density improvements in power hungry electronic devices.
- **Semiconductor Solutions:** The highest technology electronics metallization and packaging assembly processes that are powering the processors of next-generation mobile, mm-Wave devices, fiber optic networks and more.
- **Assembly Solutions:** High reliability joining / soldering material solutions for electronic assemblies used in a broad range of 5G related equipment; from wearable and handheld mobile devices to antennas and high speed infrastructure hardware.

# ASSEMBLY SOLUTIONS

High Performance Joining Materials for 5G Related Electronics Assemblies



## Equipment Class

## Solution Requirements

### Communication Devices

Mobile Phones & Wearables

- High mechanical and electrical reliability
- Fine feature capable
- Enable flexibility in board design and manufacturing process
- Lowers total cost of ownership

### Fronthaul

Remote Radio Heads  
(integrated antennas)  
and Base Stations

- High performance under wide manufacturing process conditions
- High mechanical and electrochemical reliability in potentially harsh operating environments
- Fine feature capable
- High thermal and electrical conductivity
- Lowers manufacturing costs

### Backhaul

Switches, Routers  
Data Center Servers

- Enable flexibility in board design and manufacturing process
- High electrochemical reliability alone and in combination with other joining materials
- High thermal and electrical conductivity
- High throughput, low defects

Product Type	Product(s)	Product Attributes
Solder Paste(s)	ALPHA OM-353 SAC305 / SACX Plus 0307 & 0807	<ul style="list-style-type: none"> <li>• Repeatable printing down to 0.3mm/.012" pitch and 01005 passives</li> <li>• Lowest post reflow residues of Alpha's chemistries</li> <li>• Low HIP and NWO Defects</li> </ul>
	ALPHA OM-550 HRL1	<ul style="list-style-type: none"> <li>• Best mechanical performance in low temp category</li> <li>• Repeatable printing down to 0.3mm/.012" pitch and 01005 passives</li> <li>• Significant reduction in warpage-induced defects (ie.HIP and NWO)</li> </ul>
	ALPHA JP-510 SAC305	<ul style="list-style-type: none"> <li>• Jettable to 0.5mm/.020" pitch</li> <li>• High mechanical and electrochemical reliability</li> </ul>
	ALPHA JP-501 SnBiAg	<ul style="list-style-type: none"> <li>• Low HIP and NWO Defects</li> <li>• Jettable to 0.5mm/.020" pitch</li> </ul>
Cored Wire	ALPHA Telecore HF-850 SAC305 / SACX Plus 0307 & 0807	<ul style="list-style-type: none"> <li>• Wire Diameters down to 0.1mm</li> <li>• Available in many alloys including Innolot</li> <li>• Ideal for robotic and manual soldering</li> </ul>
Adhesives	ALPHA HiTech SM42-1311	<ul style="list-style-type: none"> <li>• Non-Sagging</li> <li>• Excellent adhesion on FR4</li> <li>• Resists change due to high heat post application processing (ie. wave soldering)</li> </ul>
Underfill	ALPHA HiTech CU31-3085B	<ul style="list-style-type: none"> <li>• Fast flow &amp; reworkable</li> </ul>
Encapsulant	ALPHA HiTech EN31-4007B	<ul style="list-style-type: none"> <li>• Excellent Impact Bend Resistance</li> <li>• 20-day Pot Life</li> <li>• Reworkable</li> </ul>
Preforms	ALPHA Tape and Reel Preforms SAC305 / SACX Plus / Low-temp	<ul style="list-style-type: none"> <li>• High solder volume precision and production yields using pick and place</li> <li>• Available in many alloys, sizes and shapes</li> <li>• Flux coated versions available</li> </ul>
	ALPHA BTC-578 Accuflux Preforms SAC305 / SACX Plus / Low-temp	<ul style="list-style-type: none"> <li>• Increasing thermal conductivity through void reduction</li> <li>• Low flux residue improves electrochemical reliability</li> <li>• Prevents mechanical stackup issues through increased solder volume</li> </ul>
Bar Solder	ALPHA SAC305	<ul style="list-style-type: none"> <li>• Excellent soldering performance</li> <li>• High thermal fatigue resistance</li> <li>• Widely used</li> </ul>
	ALPHA SACX Plus 0807	<ul style="list-style-type: none"> <li>• Low Silver (0.8%) for improved value vs. SAC305</li> <li>• SAC305-like soldering and reliability performance on complex assemblies</li> <li>• Low Copper dissolution and low drossing</li> </ul>
Liquid Soldering Flux	ALPHA EF-6808HF	<ul style="list-style-type: none"> <li>• ROL0, passes IPC J-STD-004B</li> <li>• Excellent for most standard complexity assemblies</li> </ul>
	ALPHA EF-8800HF	<ul style="list-style-type: none"> <li>• ORL0, passes IPC J-STD-004B</li> <li>• Designed for thick, complex boards</li> </ul>