



*Europe's Leading  
Distributor for  
HighRel Components*

## New Space Linecard

50 Years  
HighRel

 **Protec**  
HighRel Components

Rev. 1.1 / Mai 2026

Founded in 1976 and is successful in the sales of High Reliability components.

We are particularly specialised in highly qualified components for industrial, military and space applications.

In instances of obsolescence and supply problems, we can also offer our customers effective solutions with our extensive product and market knowledge.

Our customer oriented warehouse, equipped with a modern ESD protection system, guarantees reliable component supply.

With our design-in and market oriented expertise, we can provide long term support for your projects and applications.

Through our distributor and rep strategy, we are the "extended arm" of our Manufacturers. When required we will put you directly in touch with our manufacturer's specialists.

Our first priority is a long term, successful partnership with our customers and manufacturers.



	DACH			Nordic										BeNeLux									
	Germany	Austria	Switzerland	Denmark	Sweden	Norway	Finland	France	Italy	Spain	Portugal	Greece	UK & Ireland	Belgium	Luxembourg	The Netherlands	Czech Republic	Hungary	Poland	Romania	Israel	Turkey	
Infinion / IR HighRel	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Renesas / Intersil	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Avalanche Techn.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Q-Tech	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Semicoa (OSI)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Axtal	•	•	•	•	•	•	•	•			•	•	•	•	•	•							
NanoXplore	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
VPT	•	•	•																				
FLUX	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•			
TAS DPC	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•			
Macom	•	•	•			•		•		•			•	•		•							
Skyworks DS (RF)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•			
Smiths Interconnect	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•			
F-Series (Worldwide)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
ZES	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Weeroc	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•			
BEAMIDE	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Magics	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Vorago	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	

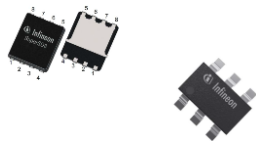
We are a specialized distributor of high quality products for the electronics industry, particularly for the Space, Avionic, High Voltage, High Temperature and niche industrial markets.

- We support customers and manufacturers with our expertise in:**
- EUS requirements and licensing processes
  - CoC requirements
  - Design in support
  - Export classifications and rules
  - Product trainings

Support and understanding of terms like SLDC, LOT acceptance, PIND, TID, ELDRS, SEE, SEU, SEL, Proton testing and many more industry specific terms.



<b>New Space XO</b>	QT780, QT723 and QT735 Series / 1.5 – 250MHz / $\pm 25$ -50 ppm	50 krad / 75 MeV
<b>MCXO</b>	3.3V / 5-100MHz / $\pm 10$ -30 ppb	50 krad / 29 or 75 MeV



N-channel MOSFET	60V / 150V	30 krad / 46 MeV
P-channel MOSFET	30V / 60V	30/50 krad / 46 MeV
MOSFET Gate Driver		30 krad



ZES744/ ZES723 LCL	Latching Current Limiter IC, built in 4A MOSFET - 60V,2V/4A	
ZES100 (LDAP)	Latchup Detection and Protection / EP Package QFN32L	
ZSOM™-M01	70mm x 50mm module hosting ARM Cortex-M0 $\mu$ C incl. SEL protection and SEU mitigation (TMR and EDAC)	
ZES400 Quad Voter	1.8 to 5V Supply / EP Package QFN28L	
ZSOM™-F01	90.17mm x 81.70mm module hosting AMD/Xilinx Zynq™ UltraScale+™ XCZU3EG incl. SEL protection and SEU mitigation (TMR and EDAC)	Evaluation carrier board available



<b>Current Sense Amplifiers</b>	$V_{in}$ 2.7 to 40V	LDR 50 krad / 43 MeV / RT Plastic
<b>Multiplexers</b>	16:1 / $V_{in}$ 3 to 5.5V	LDR 50 krad / 43 MeV / RT Plastic
<b>OpAmps</b>	ISL71444M / ISL71218M	LDR 50 krad / 43 MeV / RT Plastic
<b>Voltage References</b>	ISL71010B50 / ISL71010B25	LDR 50 krad / 43 MeV / RT Plastic
<b>Data Converters (ADC)</b>	ISL71148M / ADC SAR 8 Channels / 14 Bit / 900 kSPS	LDR 50 krad / 43 MeV / RT Plastic
<b>LDOs</b>	ISL75054M / $V_{in}$ 2.7 to 30V / 2A	LDR 50 krad / 43 MeV / RT Plastic
<b>POLs</b>	ISL73007M / ISL71001M	LDR 50 krad / 43 MeV / RT Plastic
<b>Switching Controllers</b>	ISL73846M / ISL71043M / ISL71041M	LDR 50 krad / 43 MeV / RT Plastic
<b>Power Timing</b>	ISL74420M / $V_{in}$ 3 to 18V / 4 Clock outputs / I <sup>2</sup> C / 25kHz to 48MHz	LDR 50 krad / 43 MeV / RT Plastic
<b>GaN Fet Driver</b>	ISL71441M / ISL71040M	LDR 50 krad / 43 MeV / RT Plastic
<b>Digital Isolators</b>	ISL71710M / ISL71610M / High Impedance & Passive up to 150Mbps	LDR 50 krad / 43 MeV / RT Plastic
<b>CAN Transceiver</b>	ISL71026M / $V_{in}$ 3 to 3.6V	LDR 50 krad / 43 MeV / RT Plastic
<b>RF Switch</b>	ISL71934M / $V_{in}$ 2.7 to 5.5V / 50MHz to 6GHz	LDR 50 krad / 43 MeV / RT Plastic



<b>DCDC Converters and Filters (VSC Series)</b>	100W, 66W, 30W, 25W, 15W, 10W, 5W / Single & Dual / $V_{in}$ = 28V	30 krad / 42 MeV
<b>POL</b>	$V_{in}$ 5V / 10-15A	40krad / 85MeV





## SEMICORA

A DIVISION OF OSI OPTOELECTRONICS

<b>Transistors</b>	901 Types (example SC2N2222AUB901)	30 krad (LDR)
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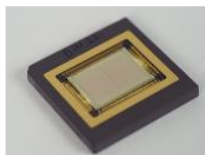




<b>Photodetector Read-Out</b>	Series of 5 Chips, for LIDAR, Scientific Instrumentation and Mixed Signal Readout with ADC and TDC	
<b>Dual E-Circuit Breaker &amp; Current Limiter Controller</b>	Programmable and fail-safe power control on rail from 20V to 130V with a current limitation up to 12A	




<b>Parallel MRAM x16 / x32 (Gen 3)</b>	64, 128Mb and 1, 2, 4 or 8Gb / $V_{in} = 2.5$ to 3.6V / Space Grade Plastic	75/100 krad / 37-75 MeV
<b>Serial QSPI MRAM (Gen 3)</b>	64, 128Mb and 1, 2, 4 or 8Gb / $V_{in} = 2.5$ to 3.6V / Space Grade Plastic	75/100 krad / 37-75 MeV



## NanoXplore



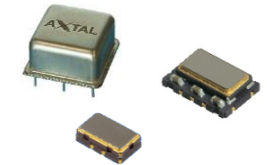
<b>NG-Ultra 300 (JEDEC)</b>	16 HSSL @ 12.5 Gbps / 12 Bit ADC & 10 Bit DAC / SpW & DDR 3&4 PHY	290k LUT / 273k DFF / 896 DSP
<b>NG-Ultra (JEDEC)</b>	Quadcore ARM R52 @ 600MHz / 32 HSSL @ 12.5 Gbps / SpW & DDR 3&4 PHY	537k LUT / 505k DFF / 1344 DSP



<b>VA7 Family</b>	Dual 1.5 GHz Arm® Cortex®-A72 Core, 1st edge computing MPU with integrated 3D GPU, PCIe, USB 3.0, and SATA, 6 total Ethernet Interfaces up to 2.5Gbps, 4-port TSN switch, Arm® TrustZone® and Secure Boot	Target $\geq 100$ krad(Si) LDR Target: $>60$ (MeVcm <sup>2</sup> )/mg @
<b>VA5 Family</b>	Dual-core Arm® Cortex®-M55 Microcontroller, 256kB NVM, 512kB on-chip double word SRAM, 128kB on-chip byte SRAM, EDAC & scrub engine for error resilience	Rad-Hard and Rad-Tolerant options
<b>VA5 Family</b>	8 Rad-Hard and Rad-Tolerant options, 256kB program, 64kB data memory, 256kB NVM, 8-Ch. ADC, 2-Ch. DAC, Ethernet, SpaceWire	Radiation Hardness Assurance (RHA) level of 100 kRad(Si)



<b>OCXO</b> (AXIOM 38, 70 and 75 Series)	$\pm 10$ -50 ppb / 8V - 12V / 10-400 MHz	10-40krad / SEL Immune
<b>TCXO</b> (AXLE 45, 50 and 70 Series)	$\pm 1$ ppm / 3.3V / 10-100 MHz	40 krad / SEL Immune
<b>VCXO</b> (AXIS 45 Series)	$\pm 5$ ppm / 3.3V ~5V / 10-200 MHz	40 krad / SEL Immune

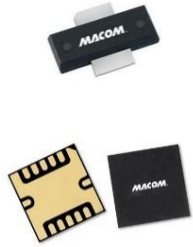


<b>Optocouplers</b>	Many different types available like (OLS049 or OLS249) acc. to MILPRF19500 or MILPRF38534	
<b>RF Diodes</b>	PIN, Schottky, Varactor, Limiter	
<b>SPDT</b>	SPDT and ST4T	up to 5GHz
<b>RF Amplifiers LNA</b>	Small QFM Packages 2x2mm	up to 6GHz
<b>Other RF parts</b>	Combined LNA with switch in one package, Gain Blocks	





Partners from RF to Light



<b>RF - Amplifiers</b>	Gain Blocks, Low Noise, RF Power, Linear, Transimpedance	
<b>RF - Attenuators</b>	Digital, Fixed, Voltage Variable	
<b>RF - Capacitors</b>	Beam Lead, Binary Chip, Bypass, HighQ, MNS, MNOS	
<b>RF - Couplers</b>	Hybrid, Stripline, Broadband	
<b>RF - Diodes</b>	PIN, Step Recovery, Schottky, Varactor Tuning	




<b>Chokes</b>	IPC-A610 Class III manufactured, custom on request	Custom & Standard
<b>Gate Drive Transformers</b>	IPC-A610 Class III manufactured, custom on request	Custom & Standard
<b>Current Sense Transformers</b>	IPC-A610 Class III manufactured, custom on request	Custom & Standard
<b>Inductors</b>	IPC-A610 Class III manufactured, custom on request	Custom & Standard
<b>Magnetorquer Rods</b>	Cube and Small Satellites, Up to 280mm length	



Digital Programmable Controller



<b>DPC G1</b>	16bit openMSP430 – Digital Programmable Controller 16 ADCs / 3DAC / 108 IO / PLL / PWM / Low Power 3x 30MIPS / MIL-1553 / CAN / UART / -55 to 125°C	μController
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<b>PLL</b>	1 MHz – 5 GHz - Phase noise of -120 dBc/H - 300mW	TID 100krad / SEE 62.5MeV
<b>Time-to-Digital</b>	Resolution < 8ps - Zero dead-zone - 1.2V core / 1.8-3.3V IO / 20mW	TID 100krad / SEE 62.5MeV
<b>TIA (Trans-Impedance Amplifier)</b>	10-100 kΩ AC gain control - 3-30 MHz AC pass band	TID 100krad / SEE 62.5MeV

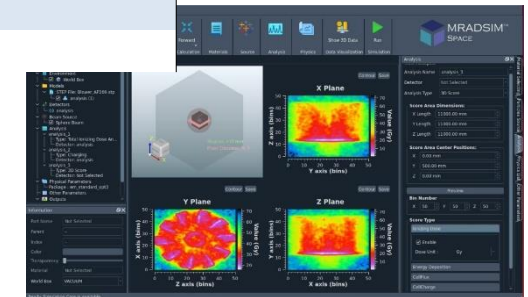


SpaceABLE 28G SL Series	4TRX, 12TX, and 12RX	FM
SpaceABLE 10G SL Series	4TRX, 12TX, and 12RX	FM
SpaceABLE 10G SM Series	4TRX, 12TX, and 12RX	FM
LightABLE 28G LL Series	4TRX, 12TX, and 12RX	EM
LightABLE 10G LL Series	4TRX, 12TX, and 12RX	EM
LightABLE 10G LM Series	4TRX, 12TX, and 12RX	EM



## Software & Services:

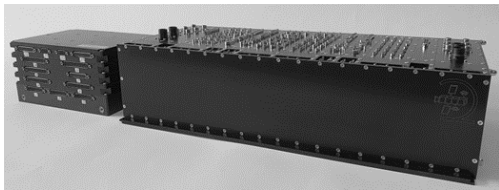
Radiation Simulation Software	MRADSIM SPACE, DOSE, CONVERTER PRO
Service RHA Testing	Heavy Ion / Proton / Co60 / Neutrons / ATOX
Service TVAC	-70/+180°C and down to a vacuum pressure of $10^{-7}$ mbar, humidity testing from +10 to +95°C & humidity between 10% and 98%, along with other thermal tests with temperature ranges up to -200/+200°C
Service Simulation	Radiation Simulation based on your Model



## New Space Systems & Board Level Products:



<b>Crypto (Constellations capable)</b>	Full Red/Black Separation - For Platform and Payload (up to 10Gbps)	AES 256 GCM Encryption – Fully anti replay hardened
<b>Satellite Development Kits</b>	MCS with MiB, S/C and environment simulator, OBC with Flight Software	FSW and Simulator Models in Source Code
<b>Satellite Core Avionic</b>	CCSDS / IO + Platform Memory / CPU	Incl. C++ Flight Software in Source Code
<b>Onboard AI Image Classification Algorithm</b>	Multi-Object detection algorithms available - Average image scan duration 0.4 sec - Training database with currently 25,000 images available	16U CubeSats up to small satellites and constellations 9W average power consumption



F-Series OBCs are strictly modular with internal SpaceWire module interconnects



CPU Modules  
LEON 3 / 4  
SpW, CAN, RS422



F-Series Gen3  
CCSDS Crypto  
Modules



I/O-Router Modules  
Spw, RS422,  
RS485, GPIO

## EPSON



<b>Inertial Measurement Unit (IMU)</b>	Low Noise, High Stability, Wide Dynamic Range (New Space)
<b>Vibration sensor</b>	High performance Vibration sensors (New Space)
<b>Accelerometer</b>	High dynamic range, low drift & digital output (New Space)

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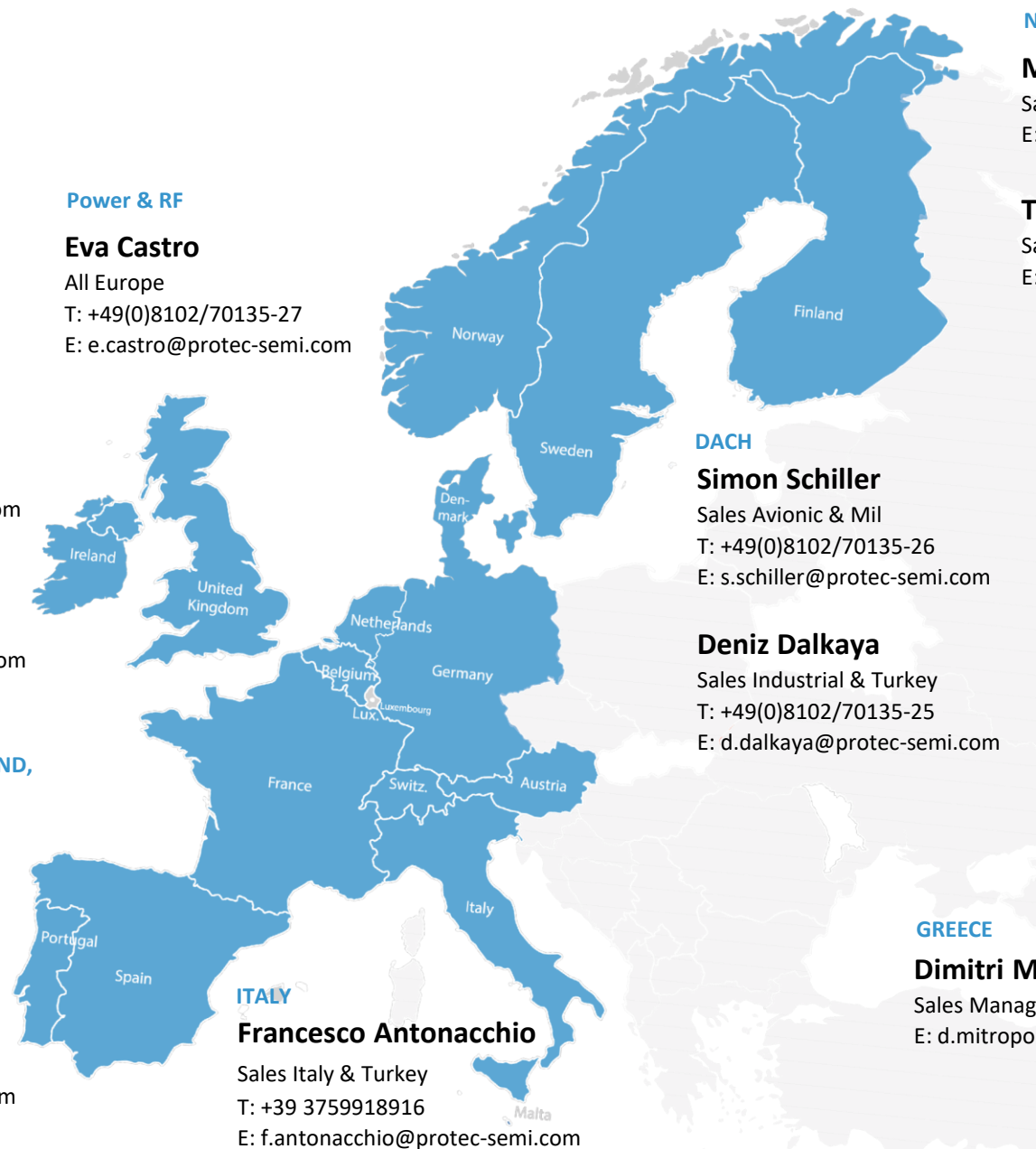
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**GREECE**

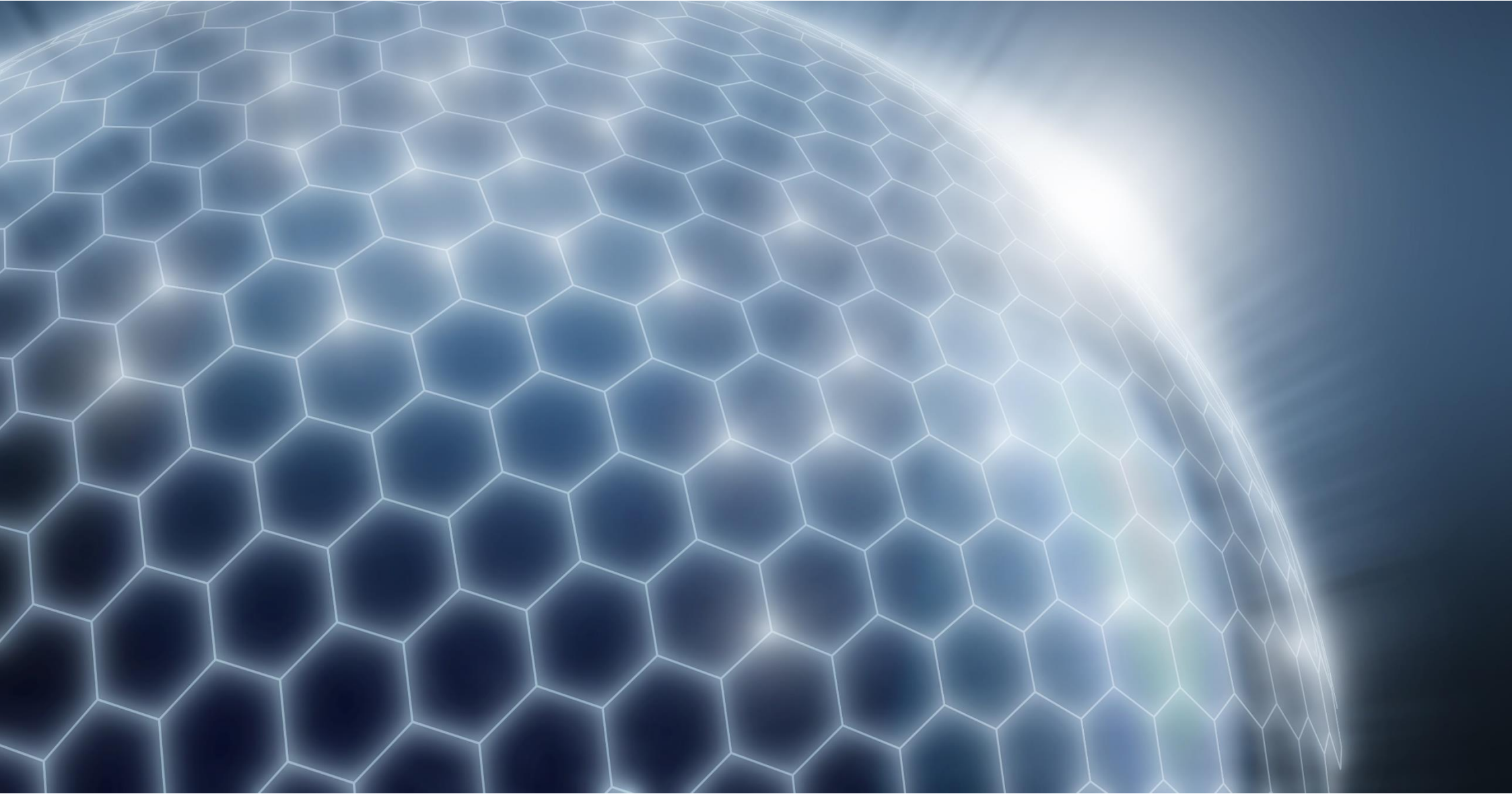
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