



PRODUCT OVERVIEW



CELLULAR 2G/3G/4G/5G | LTE CAT-M | NB-IoT | WIFI | BLE | ISM / LoRa | GNSS | UWB

SPT



SYNZEN specializes in designing active and passive antennas for Automotive, Medical and IoT applications. Whether you are looking for a standard antenna, a custom design or additional support for an ongoing project we can help at any stage of your development.

STANDARD PRODUCT RANGE

Synzen has an ever-evolving portfolio of standard embedded active and passive antennas. Products that are designed to work together in multi-antenna systems (co-existence) to ensure the class leading isolation and cross correlation for optimal performance and reliability.

CUSTOM DESIGN

For applications where a standard part cannot meet your requirements, we can support you with a bespoke solution. Our free consultation service facilitates multiple discussions to take place to ensure you take the right path for your project development and includes a full initial technical assessment.

FREE PASSIVE CHAMBER TESTS

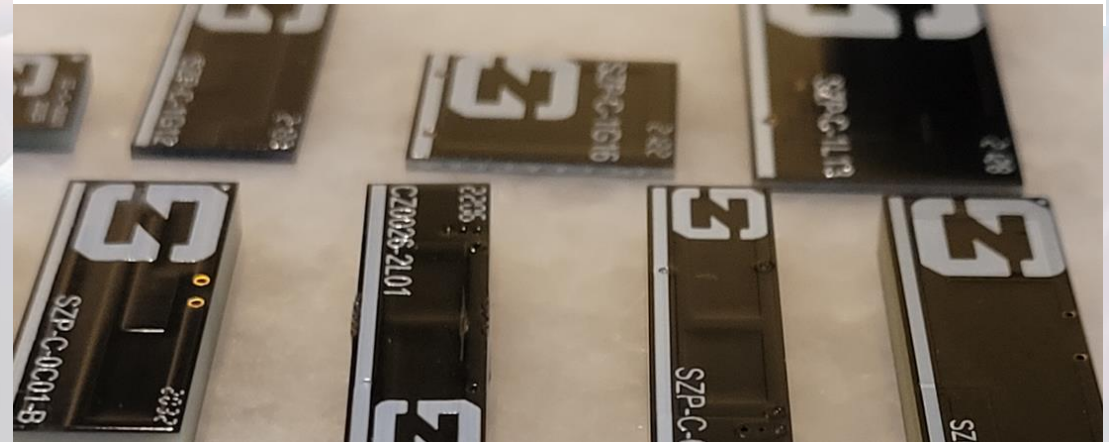
Upon engagement using a standard part and having discussed position and layout with you to ensure the design is optimal, we offer a free tuning and test service to fully characterize your device and provide a full test report which includes S11, Efficiency, Gain and full 3D radiated patterns.

CONTINUED SUPPORT

As well as support for the initial development stages, we will continue to provide support as your design progress to MP including a full check of all design files prior to you building prototypes or final products. We can additionally assist with issues unrelated to the antenna such as noise mitigation and RF Schematic/layout checking services Meetings can be setup easily and quickly to ensure your project remains on schedule.

FREE SAMPLES

Free standard part samples available at www.synzen.com.tw





Synzen antennas are designed for many applications, and for various integration whether embedded, internal, external to the device. With products that use the state-of-the-art manufacturing capabilities to ensure the best-in-class product with high performance, robust and durable for devices that are designed for any environment.

 Internet of Things (IoT)	 Digital Technology	 Cloud Computing	 Machine to Machine (M2M)	 Software-Defined Networking (SDN)	 Cyber-Physical Systems (CPS)	 Radio Frequency Identification (RFID)
 Wireless Network	 Wi-Fi	 Transport	 Aerospace	 Autonomous Car	 Health Care	 Wearables
 Industry 4.0	 Manufacturing	 Agriculture	 Smart City	 Building Management	 Retail	 Surveillance
 Smart Home	 Smart Energy	 Smart Meter	 Smart Media	 Consumer Electronics	 Mobile Devices	 Security





A| CONSULTATION:

- Support with overview of device development with input from Synzen Engineers
- Simulation / Feasibility study to understand device performance, Synzen can 3D print and replicate major device components to complete full RF dataset including chamber tests.

B| INTEGRATION:

- Antenna selection
- Guidance for placement, full device review (PCB Layout, 3D CAD)
- Prototype testing; Full RF tune and test for a comprehensive report of device performance. S-parameter (S_{11} , S_{21}), Efficiency, Gain and Peak Gain, ECC (Envelope Correlation Coefficient).

C| FINAL DEVICE OPTIMIZE AND TEST:

- AOS (Antenna Optimisation Service) Tune all matching circuits for the final assembly and verify with chamber testing. Estimate TRP.
- Pre-Certification testing for PTCRB, RSE, GNSS simulator tests.

D| MASS PRODUCTION:


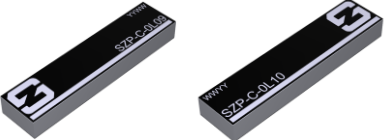

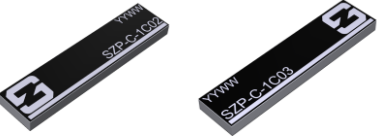

- Multi-source manufacturing locations
- Continued customer support for the product lifetime. Support for new device revisions or changes can be accommodated.



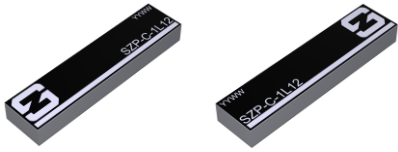



	SMD	FPC + Cable	FR4 +Cable	Ceramic SMD / TH	Active	Terminal
5G/4G/3G/2G/NB-IoT	SZP-C-2L11 (ALTAIR) SZP-C-0L02 (OPALA) SZP-C-0L09 / 10 (PROCYON a / b) SZP-C-1C02/3 (TAU1/2) SZP-C-0C01 (CETI) SZP-C-1L11/12 (ARRAKIS a / b) SZP-C-1L13 (CAPELLA)	SZK-C-1L14 (ARCTURUS) SZK-C-0L05 (ANTARES) SZK-C-0L04 (LALANDE) SZK-C-0L06 (AVICI)	SZK-C-1L08 (PERSEI) SZK-C-1L07 (PEGASI)			SZW-N-1L15 (TELESTO) SZW-N-1L16 (ATLAS) SZW-N-1L17 (TITAN)
ISM / LoRa		SZK-C-0M02 (CYgni a) SZK-C-0M04 (CYgni b) SZK-C-0M05 (SERPENTIS1) SZK-C-0M06 (SERPENTIS2) SZK-C-2M09 (CORVUS) SZC-C-2M10 (DRANCONIS)		SZC-C-0M01 (VEGA) SZC-C-1M07 (CORVI)		SZW-N-1M07 (PROTEUS) SZW-N-1M08 (TRITON)
GNSS	SZP-C-0G02 (LODESTAR) SZP-C-1G12 (ZENDE) SZP-C-1G16 (MERGA) SZP-C-1G05/15x (HYDRA 1 / 2)	SZK-C-0G04 (ZETA)		SZC-N-0G06 (ARIETIS a) SZC-N-0G07 (ARIETIS b) SZC-N-0G08 (ARIETIS c) SZC-N-0G09 (ARIETIS d) SZC-C-1G18 (SIRIUSb) SZC-N-0G10 (ARCADY b)	SZA-C-0G01 (CENTAURI) SZA-C-0G03 (PROXIMA)	
Wi-Fi / BLE	SZP-C-0W01 (AULIN) SZP-C-1W11/12 (ADARA1/2) SZC-N-2W05 (ERIDANI)	SZK-C-0W03 (AQUARIU) SZK-C-0W07 (WOLF) SZK-C-0W08 (MIRA) SZK-C-1W09 (AGENA) SZK-C-1W10 (HYDRUS)	SZK-C-1W10 (HYDRUS)	SZP-C-0W02 (SIRIUS a) SZC-C-2W14 (EPSILON)		SZW-N-1W13 (LARISSA)
UWB	SZP-C-0U01 (RIGEL)			SZC-C-2U02 (ORIONIS)		







	Name	Part Number	Dimensions (mm)	Frequency (MHz)	Efficiency Avg (%)	Peak Gain (dBi)
	ALTAIR	SZP-C-2L14	40.0 x 10.6 x 3.3	617-960 1452-1496 1710-2200 2300-2400 2500-2690 3300-4200	>60 >45 >75 >70 >60 >65	1.47 0.01 2.82 3.69 3.26 5.91
	PROCYON a / b	SZP-C-0L09/10	30.0 x 7.0 x 3.3	698-960 1710-2200 2300-2400 2500-2690	>50 >60 >60 >50	1.20 3.10 2.50 3.20
	OPALA	SZP-C-0L02	32.8 x 9.6 x 3.3	698-960 1710-2200 2300-2400 2500-2690	>50 >55 >50 >50	1.50 3.40 2.70 1.50
	TAU1/2	SZP-C-1C02	26.0 x 6.0 x 1.7	791-960 1710-2200 2300-2400 2500-2690	>55 >55 >60 >65	1.14 2.99 2.67 3.00
	CETI	SZP-C-0C01	25.0 x 10.0 x 3.3	824-960 1710-1990	>50 >55	0.60 2.40



	Name	Part Number	Dimensions (mm)	Frequency (MHz)	Efficiency Avg (%)	Peak Gain (dBi)
	ARRAKIS a / b	SZP-C-1L12 / 13	30.0 x 7.0 x 3.3	698-960 1710-2200 2300-2400 2500-2690	>60 >65 >55 >60	2.20 3.20 3.15 3.15
	CAPELLA	SZP-C-1L13	30.0 x 7.0 x 0.9	698-960 1710-2200 2300-2400 2500-2690	>50 >60 >60 >50	1.20 3.10 2.50 3.20







	Name	Part Number	Dimensions (mm)	Frequency (MHz)	Efficiency Avg (%)	Peak Gain (dBi)
	ARCTURUS	SZK-C-1L14	88.0 x 14.0 x 0.2 Cable = 180mm* IPEX MHFI**	617-960 1452-1660 1710-2200 2300-2690 3300-3800 4200-5000	>50 >30 >60 >70 >50 >45	2.80 1.20 2.90 3.20 4.20 3.10
	ANTARES	SZK-C-0L04	100.0 x 20.0 x 0.2 Cable = 180mm* IPEX MHFI**	617-960 1452-1660 1710-2200 2300-2690 3300-3800 4200-5000	>50 >65 >65 >70 >70 >30	2.60 3.20 3.10 3.70 4.50 4.40
	LALANDE	SZK-C-0L04	69.0 x 20.0 x 0.2 Cable = 180mm* IPEX MHFI**	698-960 1710-2200 2300-2400 2500-2690	>60 >70 >65 >65	2.30 2.60 2.90 3.50
	AVICI	SZK-C-0L06	110.0 x 20.0 x 0.2 Cable = 180mm* IPEX MHFI**	791-960 1710-2200 2300-2400 2500-2690	>60 >70 >65 >65	2.30 2.60 2.90 3.50




*Custom cable lengths available upon request. **Alternate connectors available upon request





	Name	Part Number	Dimensions (mm)	Frequency (MHz)	Efficiency Avg (%)	Peak Gain (dBi)
	PERSEI	SZK-C-1L08	110.0 x 20.0 x 0.6 Cable = 180mm* IPEX MHFI**	617-960	>50	2.80
				1452-1660	>30	1.20
				1710-2200	>60	2.90
				2300-2690	>70	3.20
				3300-3800	>50	4.20
				4200-5000	>45	3.10
	PEGASI	SZK-C-0L07	100.0 x 20.0 x 0.6 Cable = 180mm* IPEX MHFI**	617-960	>50	2.60
				1452-1660	>65	3.20
				1710-2200	>65	3.10
				2300-2690	>70	3.70
				3300-3800	>70	4.50
				4200-5000	>30	4.40

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	Name	Part Number	Dimensions (mm)	Frequency (MHz)	Efficiency Avg (%)	Peak Gain (dBi)
	TITAN	SZW-C-1L17	135.0 x Ø=13 SMA (M) Plug Connector	617-960 1452-1660 1710-2690 3300-4200 4400-5000 5150-7150	>40 >50 >55 >55 >55 >55	1.00 2.00 2.00 2.00 2.00 2.00
	TELESTO	SZW-C-0L15	160.0 x Ø=13 SMA (M) Plug Connector	617-960 1452-1660 1710-2690 3300-4200 4400-5000 5150-7150	>40 >55 >55 >55 >55 >55	1.00 2.00 2.00 2.00 2.00 2.00
	ATLAS	SZW-N-1L16	205.0 x Ø=13 SMA (M) Plug Connector	617-960 1452-1660 1710-2690 3300-4200 4400-5000 5150-7150	>50 >60 >60 >60 >60 >60	1.00 2.50 2.50 2.50 2.50 2.50



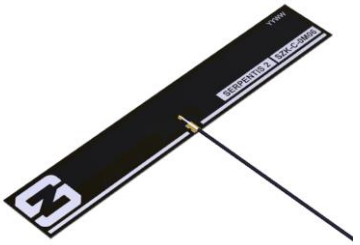

	Name	Part Number	Dimensions (mm)	Frequency (MHz)	Efficiency Avg (%)	Peak Gain (dBi)
	VEGA	SZC-C-0M01	1.6 x 0.8 x 0.8	863-928	>65	1.20
	CORVI	SZC-C-1M07	1.6 x 0.8 x 0.8	863-870 902-928	>50 >55	0.35 1.60



	Name	Part Number	Dimensions (mm)	Frequency (MHz)	Efficiency Avg (%)	Peak Gain (dBi)
	CYGNI a	SZK-C-0M02	70.0 x 15.0 x 0.2	902-928	>60	1.20
	CYGNI b	SZK-C-0M04	70.0 x 15.0 x 0.2	863-928	>70	1.21
	DRACONIS	SZK-C-2M10	33.0 x 8.0 x 0.2	863-870 902-928	>75 >65	1.40 0.76
	CORVUS	SZK-C-2M09	60.0 x 15.0 x 0.2	863-870	>64	0.91



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	Name	Part Number	Dimensions (mm)	Frequency (MHz)	Efficiency Avg (%)	Peak Gain (dBi)
	SERPENTIS 1	SZK-C-0M05	88.0 x 15.0 x 0.2	410-427 430-435 450-467	>30 >45 >30	-3.00 -2.90 -3.00
	SERPENTIS 2	SZK-C-0M05	88.0 x 15.0 x 0.2	410-427 430-435	>30 >40	-3.50 -3.00

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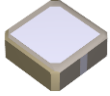
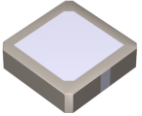
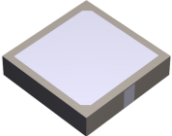
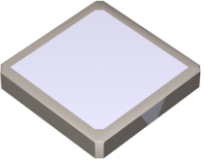
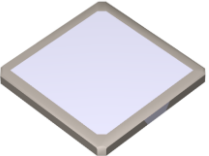


	Name	Part Number	Dimensions (mm)	Frequency (MHz)	Efficiency Avg (%)	Peak Gain (dBi)
	PROTEUS	SZW-N-1M07	202.0 x Ø=13 SMA (M) Plug Connector	863-870	>70	2.00
	TRITON	SZW-N-1M08	202.0 x Ø=13 SMA (M) Plug Connector	902-928	>70	2.00





	Name	Part Number	Dimensions (mm)	Frequency (MHz)	Efficiency Avg (%)	Peak Gain (dBi)
	LODESTAR	SZP-C-0G02	6.0 x 5.0 x 0.9	1559-1609	>60	0.5
	ZENDE	SZP-C-1G12	25.0 x 10.0 x 1.0	1164-1300 1559-1609	>85 >80	2.88 2.49
	SIRIUS b	SZC-C-1G18	1.6 x 0.8 x 0.8	1559-1609	>75	3.10
	MERGA	SZP-C-1G16	14.0 x 16.0 x 0.9	1559-1609	>75	2.00



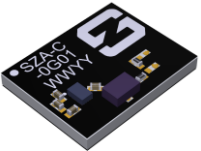
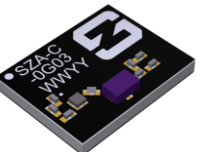
	Name	Part Number	Dimensions (mm)	Frequency (MHz)	Efficiency Avg (%)	Peak Gain (dBi)
	ARIETIS a	SZC-N-0G06	12.0 x 12.0 x 4.0	1575.42 ±1.023	>60	0.5
	ARIETIS b	SZC-N-0G07	15.0 x 15.0 x 4.0	1575.42 ±3 1605.0 ±3	>65	2.60
	ARIETIS c	SZC-N-0G08	18.0 x 18.0 x 4.0	1575.42 ±3 1605.0 ±3	>70	3.00
	ARIETIS d	SZC-N-0G09	25.0 x 25.0 x 4.0	1575.42 ±3 1605.0 ±3	>80	3.30
	POLARIS	SZC-N-0G13	25.0 x 25.0 x 2.0	1575.42 ±3 1605.0 ±3	>75	3.00



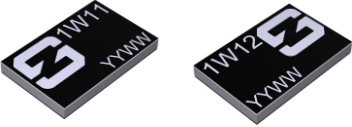




	Name	Part Number	Dimensions (mm)	Frequency (MHz)	Efficiency Avg (%)	Peak Gain (dBi)
	ARCADY b	SZC-N-0G10	18.0 x 18.0 x 4.0	1575.42 ±1.023	>55	2.20
	ZETA	SZK-C-0G04	40.0 x 10.0 x 0.2	1559-1609	>70	2.00

*Custom cable lengths available upon request. **Alternate connectors available upon request


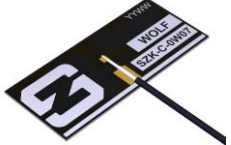

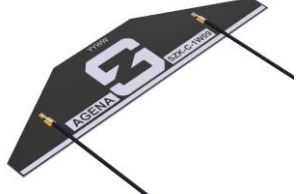


	Name	Part Number	Dimensions (mm)	Frequency (MHz)	Efficiency Avg (%)	Peak Gain (dBi)
	CENTAURI	SZA-C-0G01	9.0 x 7.0 x 1.5	1559-1609	>60	18.5
			Configuration	Power Avg (mA)	Supply (V)	Noise Figure
			ANT → SAW → LNA	4.4	1.5 – 3.1	1.9
	PROXIMA	SZA-C-0G03	9.0 x 7.0 x 1.5	1559-1609	>60	18.2
			Configuration	Power Avg (mA)	Supply (V)	Noise Figure
			ANT → SAW → LNA	1.05	1.1 – 3.6	2.1




	Name	Part Number	Dimensions (mm)	Frequency (MHz)	Efficiency Avg (%)	Peak Gain (dBi)
	ADARA 1 / 2	SZP-C-1W11 SZP-C-1W12	9.0 x 5.8 x 1.1	2400-2500 5150-5850 5925-7125	>48 >50 >55	0.80 2.48 2.82
	EPSILON	SZC-C-2W14	1.6 x 1.6 x 0.8	2400-2500 5150-5850 5925-7125	> > >	
	AULIN	SZP-C-0W01	5.0 x 4.0 x 0.9	2400-2500	>60	1.65
	SIRIUS a	SZC-C-0W02	1.6 x 0.8 x 0.8	2400-2500	>75	3.00
	ERIDANI	SZP-N-2W05	12.5 x 5.4 x 3.3	2400-2500	>45	0.50




	Name	Part Number	Dimensions (mm)	Frequency (MHz)	Efficiency Avg (%)	Peak Gain (dBi)
	AQUARII	SZK-C-0W03	25.0 x 11.0 x 0.2 Cable = 100mm* IPEX MHF1 connector**	2400-2500 4900-6000	>65 >65	1.85 5.50
	WOLF	SZK-C-0W07	25.0 x 11.0 x 0.2 Cable = 100mm* IPEX MHF1 connector**	2400-2500 4900-5850 5925-7125	>65 >65 >60	1.85 5.50 3.40
	MIRA	SZK-C-0W08	30.0 x 6.0 x 0.2 Cable = 100mm* IPEX MHF1 connector**	2400-2500 4900-5850 5925-7125	>70 >60 >70	3.40 4.20 4.85
	AGENA	SZK-C-1W09	75.0 x 20.0 x 0.2 Cable = 100mm* IPEX MHF1 connector**	2400-2500 4900-5850 5925-7125	>60 >65 >70	1.50 3.50 4.20

*Custom cable lengths available upon request. **Alternate connectors available upon request





	Name	Part Number	Dimensions (mm)	Frequency (MHz)	Efficiency Avg (%)	Peak Gain (dBi)
	HYDRUS	SZK-C-1W10	25.0 x 11.0 x 0.2 Cable = 100mm* IPEX MHF1 connector**	2400-2500 4900-6000	>65 >65	1.85 5.50

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	LARISSA	SZW-C-1W13	202.0 x Ø=13 SMA-Reverse (M) Plug connector	2400-2483 5150-7125	>50 >60	4.00 5.00
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	Name	Part Number	Dimensions (mm)	Frequency (MHz)	Efficiency Avg (%)	Peak Gain (dBi)
	RIGEL	SZP-C-0U01	10.0 x 9.0 x 1.7	3200-4800 5900-7000	>80 >70	3.60 1.50
	ORIONIS	SZC-C-2U02	1.6 x 0.8 x 0.8	2400-2500 4900-5850 5925-7125	>65 >65 >60	1.85 5.50 3.40



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