



COMPANY INTRODUCTION

2023, v2.8 Edition

a GLANCE AT CIROCOMM

- Established in 1996, Taiwan
- Capital amount: NTD 290 Million (USD 10M)
- Number of employee: 190
- Core technology: Antenna, DR Filter, Resonator
- Capacity: 3M pcs/ mon for Ceramic DR filter
- 2M pcs/ mon for Ceramic Patch



Confidential

CIROCOMM YOUR LIFE!



Antenna | DR Filter | Resonator

We build the RF foundation for your wireless communications.

Core competence

- Ceramic DR filter design techniques
- Antenna design techniques
- Material science and ceramic processing techniques

Focus on Wireless Connectivity

No.	Growing Market	Application	CIROCOMM products
1	WLAN 802.11ax,wifi-6,6e,7 Wi-Fi 5GHz triband	High speed WiFi router & repeater Enterprise WiFi router Commercial CPE Mesh Router	5GHz DR Filters 5Ghz LTCC Filters 5Ghz BAW Filters 6~7GHz DR Filters 6~7Ghz BAW Filters
2	5G/LTE Small Cell (5 th Generation)	LTE & 5G small cell station	2.3Ghz ~ 5Ghz DR Filters
3	GNSS High Precision GPS L1+L2 & L1+L5 (IRNSS)	Unmanned vehicle; UAV; Agricultural Machine; land surveying	GPS L1+L2 antenna GPS L1+L5 antenna GPS L1+L2+L5 Antenna
4	Low Power Wide Area Networking (LPWA)	Smart meter; smart city; smart parking lot	Sub 1GHz antennas (Ceramic chip & FPC) All in one IP67 Module
5	Dedicated Short Range Communication (DSRC)	Telematics for safe driving	5.9GHz antennas & 5.9GHz DR filters
6	Gaming & Computer Peripherals	Wi-Fi, BT, BLE	Chip Antenna Saw Filter Metal Antenna FPC Antenna

Automotive

- Sub G
- LTE

Transportation

- GNSS
- RTK
- LTE
- Wi-Fi

Defense/Rugged

- NB-IoT
- Sub G
- LTE

Smart

- Wi-Fi

Networking

- Wi-Fi
- Ethernet
- 2.4GHz, 5GHz, 6GHz, 7GHz
- LoRa, SigFox, NB-IoT

Healthcare

- Wi-Fi

Industrial/Factory

- Sub G
- LTE

- Wi-Fi
- Ethernet
- 2.4GHz, 5GHz, 6Ghz, 7Ghz
- LoRa, SigFox, NB-IoT
- 5G

Product category

Antenna



- Ceramic Patch



- Ceramic Linear



- Chip



- FPC / PCB

Ceramic Filter



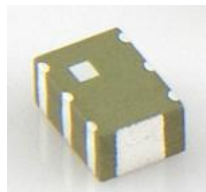
- 3500Mhz



- WiFi7



- 2.4GHz
n40/ n41



- LTCC BPF/ Diplexer

Module



- NB-IoT



- Internal GPS



- External GPS

Advantages of ceramic DR filter

Ceramic DR filter features:

- High out band rejection <-50dB
- Frequency range from 10MHz~10GHz
- High power input
- Excellent temperature co-efficient



Filter type	DR filter	SAW filter	LTCC filter
Frequency range	10MHz~10GHz	< 3Ghz	10MHz~100GHz
Out-band rejection	-50dB typical	-40dB typical	-30dB typical
Insertion Loss	Low	Low	Medium
Power input	High	Medium	Medium
Q values	High	Medium	Medium

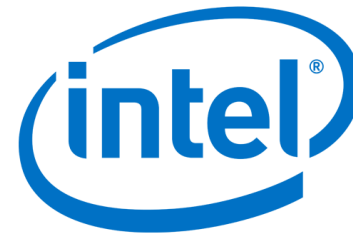
DR filter application

- Wi-Fi Triband/ Pentaband/ Mesh (WiFi 5, WiFi 6e/ 7)
- DSRC 5825MHz (C-V2X)
- 5G & LTE Small cell station 3.5GHz, 4.7GHz
- More



DR Filter solutions approved by

- We work closely with the wireless networking giants to build RF foundation for your wireless communications.



Antenna application

- LPWAN, NB-IoT, LoRa, Sigfox, Weighless P
- DSRC (C-V2X), WiFi, Bluetooth (BT/ BLE), Zigbee
- Cellular 5G, 4G LTE, 3G/2G, GSM
- GNSS, PND, Tracker, SDARS, ETC
- RFID, NFC, UWB, FM antenna



Ceramic NB-IoT Antenna
DPAN0S09 / NB-IoT / Ceramic

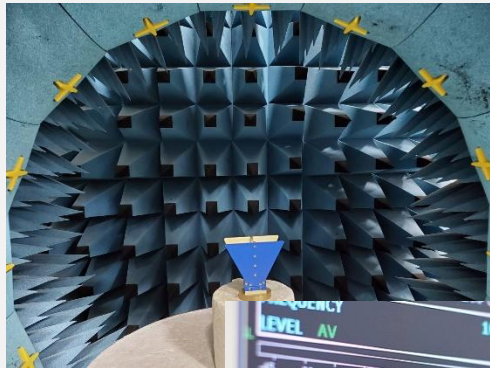


► **DSRC 5.8 - 5.9 GHz Antenna**
PA012FD0002 / DSRC / V2V / Ceramic

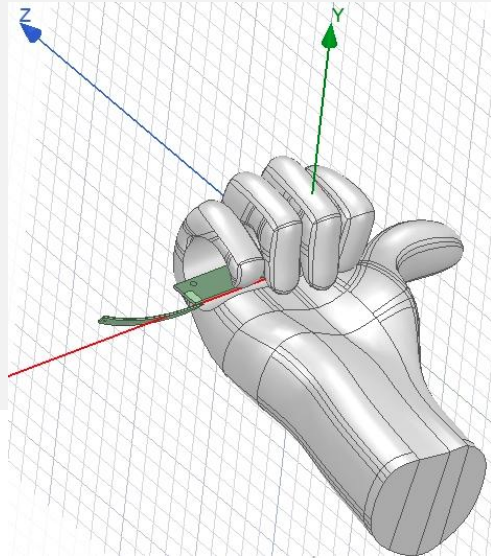


Antenna design service

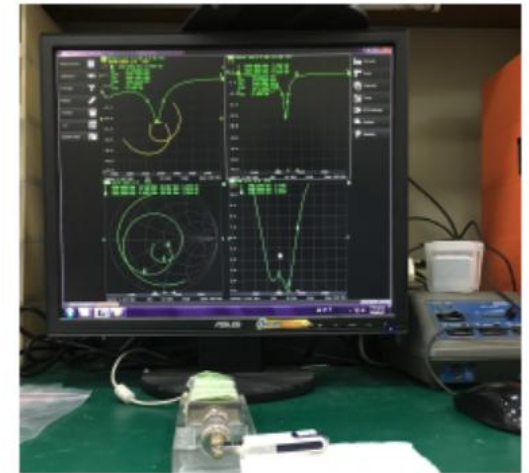
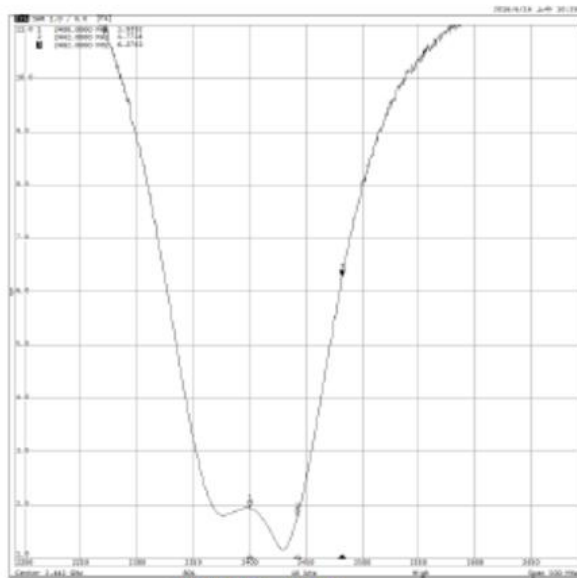
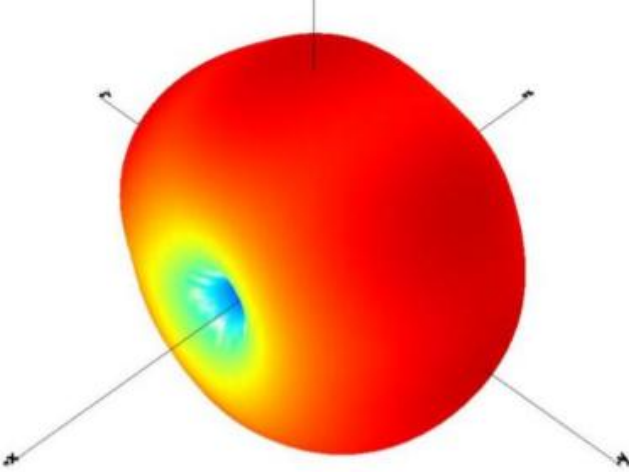
- To help customer to design or select suitable type of antenna for fitting environment, housing and scenario.
- The experienced R&D team, OTA (over-the-air) chamber and antenna labs allow us to design wide range frequency antennas with different materials to meet customer need.



Consult, Simulate, Design, Verify, Manufacture



- Cirocomm team works with clients to resolve challenging RF problems. We provide result-focused solution at the preliminary stage to prevent from redesign cost.



Antenna Lab Location

4G LTE Chamber



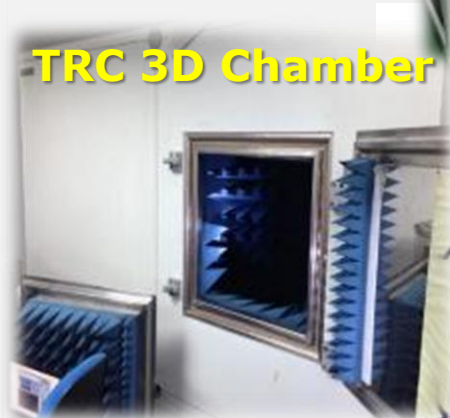
Satimo SG-24L



ETS AMS8500



TRC 3D Chamber



Satimo Start Lab



GPS C/N Chamber



TRC 3D Chamber



Testing Instruments

Rohde & Schwarz CMU200
Universal Radio Communications Tester



Rohde & Schwarz CMW500
Universal Radio Communications Tester



Agilent E5071C ENA
Network analyzer



Antenna Measurement

Active Measurement

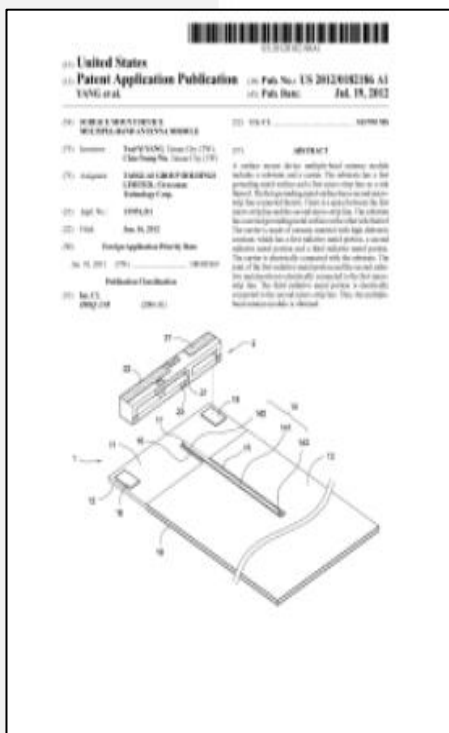
- TRP (Total Radiation Power)
- TIS (Total Isotropic Sensitivity)
- GPS C/N

Passive Measurement

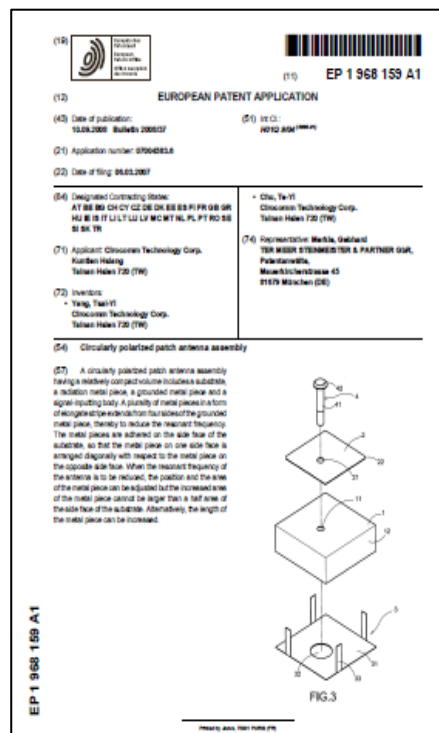
- Antenna gain
- Antenna efficiency
- Directivity
- 1D, 2D and 3D radiation patterns
- Radiation pattern in any polarization (linear or circular)
- Axial Ratio
- Beam-width
- Cross polar discrimination
- Sidelobe levels
- Front to back ratio (SG 24 - L)

Achievement

We have granted **75** patents in US/EU/JP/CN/TW.



US Patent



EU Patent

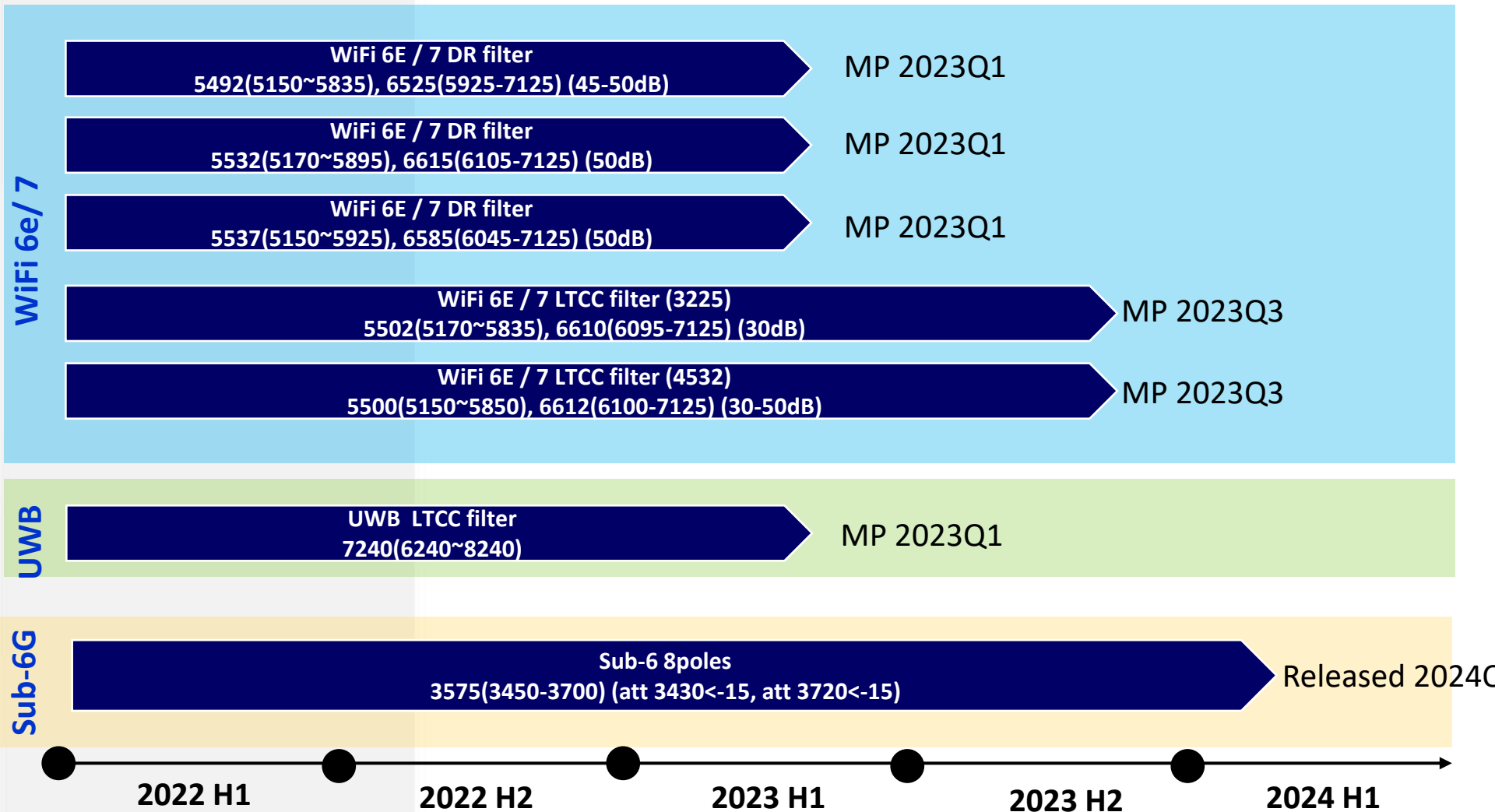


Paper & Research Report

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Filters Roadmap



WiFi 6e/ 7 Filter

Part Number		Frequency Range (MHz)	Description	W Size (mm)	Remark
DR WiFi6e/ 7	SJ5537A(ES)	5150~5925	+UNii4	9.36	Qualcomm Pebble
	SJ6585A(ES)	6045~7125	clips 100MHz UNii5	9.36	Qualcomm Pebble
	SJ5492A	5150~5835	No UNii4	9.36	MTK Eagle, STD Full Band
	SJ6525A	5925~7125		9.36	MTK Eagle, STD Full Band
	SJ5532A	5170~5895	+UNii4	9.36	
	SJ6615A	6105~7125	clips 160MHz UNii5	9.36	
		6095~7125	60dB at 5895	9.36	
	SJ5522B(ES)	5150~5895	+UNii4 (34dB@5955)	9.36	
	SJ6540B(ES)	5955~7125		9.36	
	SJ5522A(ES)	5150~5895	+UNii4 (48~50dB@5955)	12.8	
	SJ6535A(ES)	5945~7125		12.8	
	SJ5437A	5150~5725	- UNii3 - UNii4	9.36	
	SJ6450A	5925~6975	- UNii8	9.36	
DR Special Cut off for Penta- Band, 5G Hi/ Lo and 6G Hi/ Lo	SJ5250A	5170~5330	5GHz Lo Band	9.36	
	SJ5662A	5490~5815	5GHz Hi Band	9.36	BPF
	SJ6185A	5945~6525	6GHz Lo Band	9.36	BPF
	SJ6855A	6585~7125	6GHz Hi Band	9.36	
2.4GHz	S2442E	2402.5~2481.5	2.4GHz Coexistence	1.1x0.9	BAW

Why DR Filter is good for WiFi 7 ?

Cirocomm filter maintain good rejection over Hi Temp

✓ Out band Rejection at 5835MHz @110°C :

Ciro 46dB @110 °C vs Competitor low than 40dB over 65 °C , 23.3dB @110 °C

SJ5492A	Frequency (MHz)	spec	-40°C	0°C	25°C	85°C	95°C	110°C
IL (dB)	最低值		-0.35	-0.57	-0.68	-0.88	-0.90	-0.94
	5150	-2.50	-0.57	-0.79	-0.91	-1.11	-1.13	-1.17
	5785	-2.50	-1.19	-1.48	-1.62	-1.94	-1.98	-2.07
	5835	-3.20	-2.07	-2.37	-2.54	-3.00	-3.08	-3.21
Attenuation (dB)	5945	-45.0	-56.6	-55.4	-55.0	-55.5	-55.5	-55.5
	6105	-50.0	-92.4	-76.9	-87.8	-81.8	-86.6	-80.7
	7125	-50.0	-60.5	-60.5	-60.4	-61.0	-61.1	-61.6
SJ6525A	Frequency (MHz)	spec	-40°C	0°C	25°C	85°C	95°C	110°C
IL (dB)	最低值	NA	-0.14	-0.38	-0.52	-0.76	-0.77	-0.81
	5925	-4.5	-2.31	-2.72	-2.93	-3.24	-3.24	-3.26
	5945	-3	-1.82	-2.18	-2.37	-2.71	2.73	-2.79
	5955	-2.7	-1.69	-2.03	-2.21	-2.55	-2.57	-2.63
	7125	-2.7	-0.37	-0.61	-0.73	-0.96	-0.97	-1.00
Attenuation(dB)	5150	-50	-61.3	-60.5	-61.0	-61.9	-60.2	-60.9
	5640	-50	-57.2	-57.4	-57.7	-57.0	-56.8	-56.7
	5835	-45	-50.7	-51.1	-51.0	-48.0	-47.5	-46.0

Cirocomm

IL/ Rejection (dB)									
Sample P/N	Frequency (MHz)	-40°C	-10°C	25°C	40°C	65°C	85°C	95°C	110°C
SY54XXXX	5150	1.20	1.21	1.28	1.32	1.38	1.40	1.42	1.46
	最高点	0.79	0.96	1.16	1.24	1.33	1.36	1.39	1.42
	5785	1.45	1.75	2.15	2.32	2.59	2.76	2.87	3.02
	5835	1.99	2.38	2.91	3.17	3.63	4.06	4.33	4.82
	5945	31.4	42.0	54.5	57.0	57.1	54.9	53.9	52.3
	6105	53.9	55.7	58.3	59.2	61.4	62.6	64.1	66.5
SY65XXXX	7125	57.7	57.8	58.5	57.8	58.4	58.5	57.9	59.0
	5925	7.36	6.17	5.11	4.74	4.28	4.03	3.94	3.87
	5945	4.46	3.92	3.60	3.55	3.54	3.56	3.57	3.62
	最高点	0.71	0.88	1.08	1.15	1.26	1.32	1.34	1.39
	7125	0.88	1.05	1.26	1.33	1.44	1.49	1.51	1.56
	5640	60.3	59.5	59.1	59.8	59.4	58.6	58.6	58.0
SY65XXXX	5835	54.2	60.8	51.6	45.0	35.6	29.5	26.9	23.3

lower than 40dB
over 60 °C

Competitor

IM YOUR LIFE!

Why DR Filter is good for WiFi 7 ?

Cirocomm filter has small frequency drift at 120 °C

✓ Frequency Drift over High Temp @120°C :

Ciro 3.4M~5.9MHz @115°C vs Competitor 29.1~29.5MHz @110 °C

✓ Out band Rejection at 5835MHz @120°C :

Ciro 41.83dB @120 °C vs Competitor 23.3dB @110 °C

SJ5492 Thermal Test -40 ~ 120°C					
Test Date	Product Name	25°C	95°C	115°C	120°C
2023/3/29	SJ5492A	5437.25	5433.29	5431.33	5430.57
		0.0	-4.0	-5.9	-6.7

Insertion loss and Attenuation variance by difference temperature					
Frequency(MHz)		25°C	95°C	115°C	120°C
Insertion loss (dB)	5150	0.73	0.95	0.98	0.99
	Best IL	0.63	0.83	0.87	0.87
	5640	0.86	1.10	1.15	1.15
	5815	1.86	2.24	2.34	2.36
	5835	2.30	2.74	2.87	2.90
Attenuation (dB)	5925	46.00	48.11	49.28	49.71
	5945	57.29	57.48	57.41	57.45
	5955	56.75	55.71	56.06	55.53
	7125	66.33	65.77	66.09	66.15

SJ6525 Thermal Test -40 ~ 120°C					
Test Date	Product Name	25°C	95°C	115°C	120°C
2023/3/29	SJ6525A	6597.44	6595.56	6594.06	6593.23
		0.0	-1.9	-3.4	-4.2

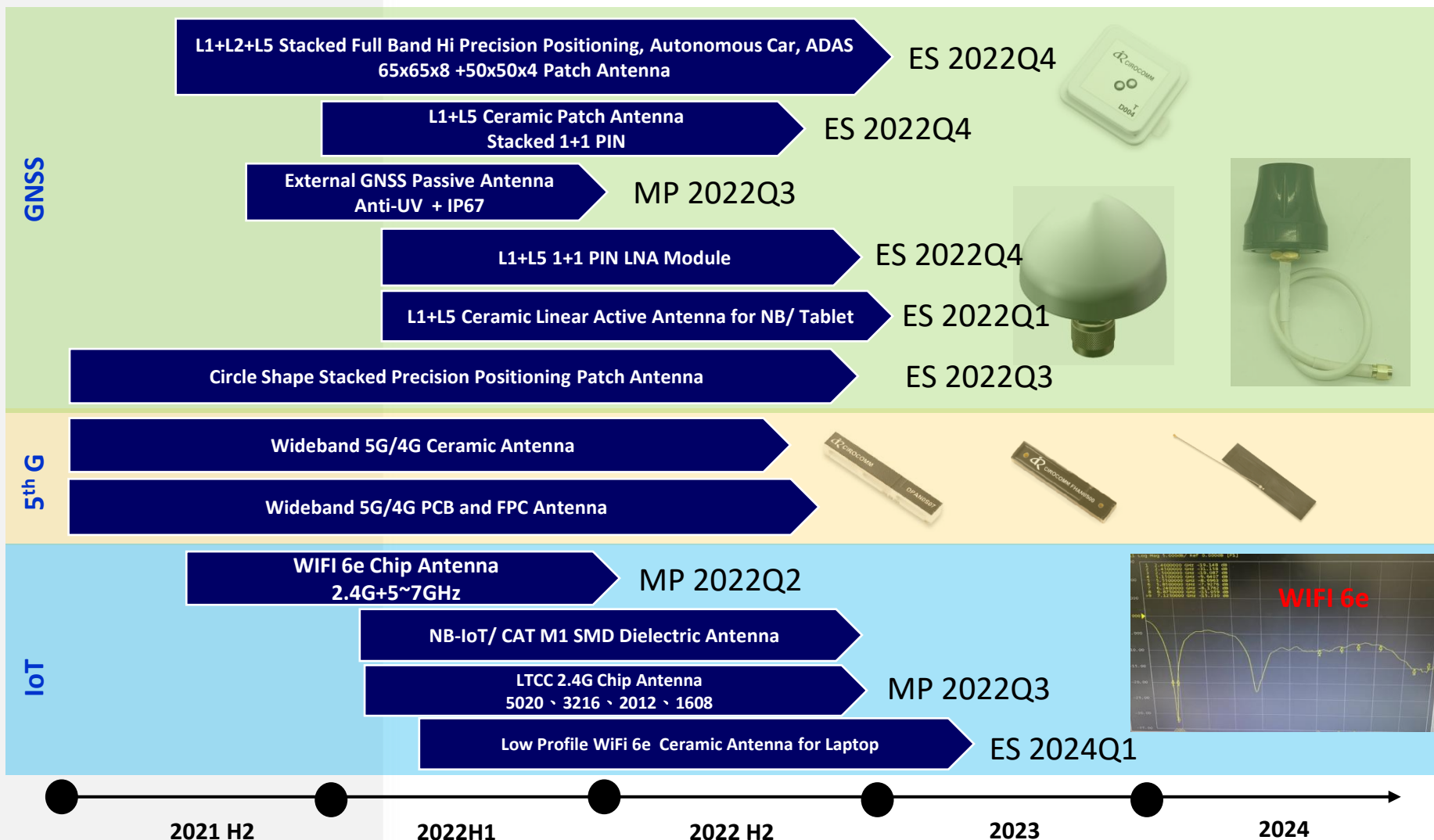
Insertion loss and Attenuation variance by difference temperature					
Frequency(MHz)		25°C	95°C	115°C	120°C
Insertion loss (dB)	5925	2.95	3.22	3.24	3.24
	Best IL	0.45	0.71	0.75	0.75
	5945	2.28	2.58	2.62	2.63
	5955	2.07	2.37	2.42	2.43
	7125	0.60	0.86	0.92	0.93
Attenuation (dB)	5150	60.57	61.07	61.49	60.88
	5640	56.99	56.13	56.54	56.02
	5835	48.53	44.29	42.27	41.83

Sub-6G (5G FR1)

Filter List

Items	Fc	Frequency range	BW	IL	RL	Ripple	Rejection1	Rejection2	Dimesion
	(MHz)	(MHz)	(MHz)	(dB)	(dB)	(dB)	(dB)	(dB)	(mm)
J2350G(V02)	2350	2300-2400	100	1.5	-14	1	-40 @DC-2170	-40 @2496-2690	15.9*4.4*7.1(5.9)
J2595C(d03)	2595	2515-2675	160	1.5	-10	1	-40 @2315	-50 @2875	15.9*4.4*6.3(5.1)
J3750A(d03)	3750	3700-3800	100	1.5	-10	1	-30 @3500	-30 @4000	15.9*4.4*6.2(4.45)
J4700B(d03)	4700	4600-4800	200	1.5	-10	1	-30 @4400	-30 @5000	15.9*4.4*4.5(3.3)
J3450L(d01)	3450	3400-3500	100	2	-10	1	-35 @3000-3250	-30 @3650-4100	15.9*4.4*4.8(3.6)
J3550E(d02)	3550	3500-3600	100	2	-10	1	-30 @3100-3365	-30 @3710-4160	15.9*4.6*4.6(3.5)
J3500F(V03)	3500	3400-3600	200	2	-10	1	-25 @3320	-25 @3680	15.9*4.4*6.2(4.95)
J3450K(V02)	3450	3300-3600	300	2	-10	1	-30 @2800-3135	-30 @3800-4135	15.9*4.4*6.2(3.9)
J3600F(d01)	3600	3400-3800	400	2.2	-10	1.5	-30 @3000-3260	-30 @4020-4300	15.9*4.4*6.0(3.7)
J3950A(d01)	3950	3700-4200	500	2	-9.5	1.5	-45 @3400 -22 @3600	-21 @4400 -37 @4600	15.9*4.4*4.5(3.3)
J3840A(V02)	3840	3700-3980	280	2	-10	1.2	-40 @3520	-30 @4100	15.9*4.4*4.5(3.2)
J3950B(d01)	3950	3800-4100	300	1.5	-10	1	-40 @3590	-30 @4360	15.9*4.4*4.5(3.02)
J3625B(V01)	3625	3550-3700	150	2	-12	1	-30 @3220-3420	-30 @3830-4030	15.9*4.4*4.5(3.4)
J4700C(V03)	4700	4400-5000	600	2	-8	1.5	-40 @3800-4100	-30 @5340-5640	15.9*4.4*4.5(2.7)
J1817A(V01)	1817	1805-1830	25	2	-15	1	-40 @1880-1920	NA	15.9*4.4*6.63(5.43)
J2345E(V01)	2345	2320-2370	50	3	-14	1.5	-35 @0-2260 -8 @2260-2300	-8 @2390-2400 -20 @2400-3000	15.9*4.4*7.05(5.85)
J2595D(V01)	2595	2515-2675	160	3	-10	1.8	-40 @0-2400 -15 @2400-2483.5 -7 @2483.5-2495	-7 @2695-2715 -20 @2715-2780 -35 @3300-3800	15.9*4.4*6.27(5.07)
J3840B(d01)	3840	3700-3980	280	2.5	-10	1.5	-35 @3520	-30 @4100	8.6*2.85*4.0
J3500N(d01)	3500	3450-3550	100	2.2	-15	1	-40 @3080-3280 -10 @3390	-40 @3690-3890	8.6*2.85*4.5
J3500M(d01)	3500	3400-3600	200	3	-10	1.5	-40 @3030-3230 -10 @3350	-40 @3700-3900	8.6*2.85*4.45
J4700D(d01)	4700	4500-4900	400	1.5	-10	1	-30 @4100-4300	-30 @5150-5350	15.9*4.4*4.5(2.6)
J4750A(d01)	4750	4500-5000	500	1.2	-10	0.8	-30 @4140-4340	-30 @5420-5620	15.9*4.4*4.5(2.6)
J4750B(d01)	4750	4600-4900	300	1.5	-12	0.7	-30 @4170-4370	-30 %5140-5340	15.9*4.4*4.5(2.6)
J4850B(d01)	4850	4800-4900	100	1.5	-12	0.7	-30 @4360-4560	-30 @5110-5310	15.9*4.4*4.5(2.55)
J3550G(d01)	3550	3500-3600	100	2	-12	0.8	-40 @3110-3300 -22 @3365	-25 @3710 -40 @3750-4160	8.6*2.85*4.43
J3750B(d01)	3750	3700-3800	100	2	-12	0.8	-40 @3300-3500	-40 @4000-4200	8.6*2.85*4.22
J3500P(d01)	3500	3400-3600	200	2.5	-10	1.2	-40 @30200-3220 -17 @3320	-23 @3680 -40 @3725-3925	8.6*2.85*4.45
J3450M(d01)	3450	3400-3500	100	2	-14	0.8	-40 @3000-3210 -30 @3250	-35 @3650 -40 @3670-4100	8.6*2.85*4.55
J3625C(d01)	3625	3550-3700	150	2.5	-10	1.2	-40 @3185-3385 -30 @3420	-40 @3830-4030	8.6*2.85*4.3
J3000A(d01)	3000	2900-3100	200	2	-10	1	-10 @2800	-10 @3200	3.6*1.85*3.65
J3450N(d01)	3450	3400-3500	100	3	-16	1.5	-49 @0-2700 -46 @0-2700 (wi LP) -40 @2700-3295 -40 @2700-3295 (wi LP)	-3 @3605-5925 -20 @3605-5925 (wi LP) -3 @5925-17000 -20 @5925-17000 (wi LP)	15.9*4.2*5.55(4.4)
J3625D(d01)	3625	3550-3700	150	3.5	-10	2	-40 @3220-3420 -7 @3530	-7 @3720 -40 @3830-4030 -20 @7100-7400 (wi LP) -20 @10650-11100(wi LP)	15.9*4.2*5.25(4.1)
J4000B(d01)	4000	3800-4200	400	2	-10	1.2	-40 @3420-3620	-30 @4400-4600	15.9*4.45*4.5(3.3)

Antenna Product Roadmap



Antenna Solution (+TST) for Automotive

L1 only 25x25x6mm single pin

L1 only 35x35x6mm single pin

L1/L5 4-pin 25x25x6mm/35x35x6mm (PA035U6D000)

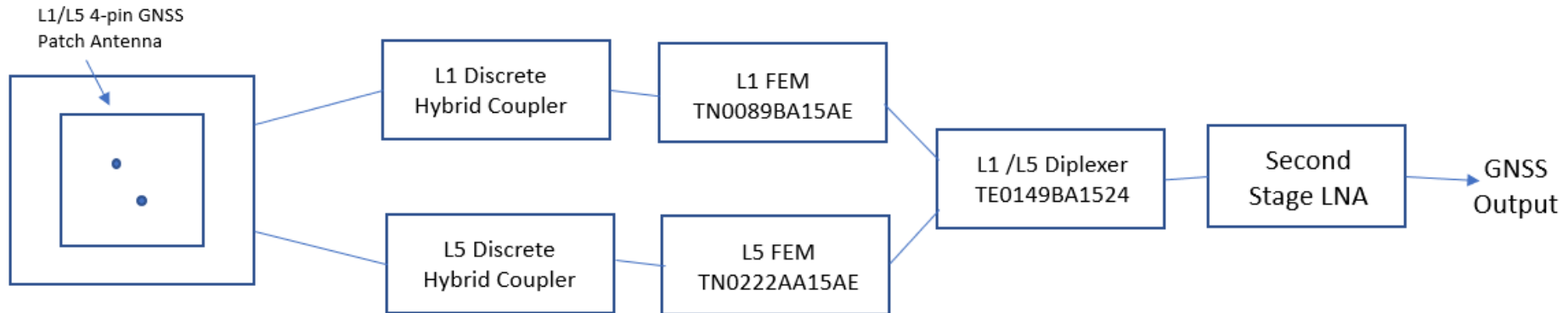
L1/L5 4-pin 50x50x4mm/65x65x8mm

L1/L5 2-pin 25x25x6mm/35x35x6mm (PA035T6D001)

L1/L5 2-pin 25x25x4mm/35x35x6mm (PA035T6D000)

SXM 25x25x4mm/ 25x25x6mm single pin

UWB 3.2x1.6.1x.1mm



Patch Antenna GNSS/ SDARS/ WiFi

Patch Antenna		
Application	Size	Part Number
BT/WIFI	12*12*4mm	PA012CE0002
BT/WIFI *	25*25*4mm	PA025IY0000 *
WIFI Dual Band *	35*32*7mm	PA025L4PI00 *
DSRC	12*12*4mm	PA012FD0002
SDARS *	25*25*4mm	PA025LC0000 *
RFID	47.5*47.5*6.5mm	PA050AG0000
Iridium *	25*25*4mm	PA025AO0004 *
GPS	10*10*4mm	PA010DA0010
GPS	12*12*4mm	PA012HA0000
GPS+Glonass	15*15*4mm	PA015BQ0000
GPS+Beidou	18*18*4mm	PA018C20000 *
GPS+Glonass+Beidou	25*25*4mm	PA025AZ0009 *
GPS+Glonass+Beidou	35*35*6mm	PA035FZ0000 *
GPS L1+L5	18*4+25*4mm	PA025Z6D000 *
GPS L1+L5	25*4+35*4mm	PA035K6D004 *
GPS L1+L2	41*4+47*4mm	PA050BSD004
GPS+Iridium	40*40*6.5mm	PA040AU0000



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Linear Antenna 600~6000MHz band

Cellular, M2M, Meter, IoT

Parameter		Specification
Operating Frequency		600~960, 1710~2690, 3300~6000MHz
Polarization		Linear
Impedance		50 Ohm
Bands Supported	5G NR	n - 1, 2, 3, 5, 6, 7, 12, 14, 18, 20, 25, 28, 29, 30, 34, 38, 39, 40, 41, 48, 65, 66, 70, 71, 77, 78, 79, 80, 81, 82, 83, 84, 86, 89, 90, 95
	4G LTE	B- 1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 17, 18, 19, 20, 25, 26, 28, 29, 34, 37, 38, 39, 41, 42, 43, 44, 48, 49, 52, 65, 66, 67, 68, 69, 70, 71, 85
	3G	PCS, DCA, UMTS



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Chip Antenna 4G LTE/ 5G

Cellular, M2M, Meter

LTE					
Product Name	Working Freq. (MHz)	Bandwidth (MHz)(Min.)	Peak Gain (dBi)	Dimension (mm)	Clearance Area(mm)
DPAF0S00 *	824~960 1710~2170	150 500	1.0 / 3.0	30 x 5 x 5	40 x 13
DPAN0S07 *	700~960 1710~2700	260 1000	1.0 / 3.0	37 x 5 x 7	45 x 13
DCA00S00	824-960 1710-2170	140 1000	2.85/1.87	12* 3 * 1.95	60*11
5G NR(FR1)					
DPA00S00 *	600~6000	5400	-2 ~ 4	40 x 6 x 5	45 x 13



Chip Antenna 2.4GHz

WiFi, BT, BLE, Zigbee, ISM

2.4GHz					
Product Name	Working Freq. (MHz)	Bandwidth (MHz)(Min.)	Peak Gain (dBi)	Dimension (mm)	Clearance Area(mm)
DCAJ0S05	2400~2500	85	1.7	1.62 x 0.83 x 0.29	5 x 3
DCAJ0S06	2400~2500	85	1.7	2.05 x 1.23 x 0.45	5 x 3
DCAJ0S07	2400~2500	100	3.9	2.05 x 1.28 x 1.23	7.35 x 5.75
DCAJ0S08	2400~2500	100	2.2	1.7 x 0.93 x 0.75	5.5 x 4
DCAJ0S09	2400~2500	100	1.7	3.23 x 1.66 x 0.45	5.9 x 5
DCAJ0S10	2400~2500	100	2.7	3.23 x 1.66 x 1.23	5.2 x 5
DCAJ0S11	2400~2500	100	3.4	5.02 x 2.12 x 1.03	7 x 5
DCAJ0S12	2400~2500	100	2.0	8 x 1 x 0.5	10 x 5
DCAJ0S13 *	2400~2500	100	0.5	3.2 x 1.6 x 0.5	5.5 x 5.5
DCAJ0S14 *	2400~2500	100	1.0	2 x 1.2 x 0.25	5 x 4
DCAJ0S15 *	2400~2500	100	3.0	3.2 x 1.6 x 0.5	6.5 x 4.5
DCAJ0S16 *	2400~2500	100	2.0	3.2 x 1.6 x 1	6.5 x 6
DCAJ0S17 *	2400-2500	100	1.5	5*2*1	8.2*6
DCAJ0S18 *	2400-2500	100	0.6	8*1*1	11*5
DCAJ0S19	2400-2500	100	3.22	4*3.2*3.1	44 x 21.5
DCAJ0S20	2400-2500	120	2.8	6*5.2*5.1	44 x 21.5
DCAK0012 *	2400~2500	100	1.0	3.05 x 1.6 x 0.55	9 x 3.75
PCAK0000-14 *	2400~2500	100	1.0	5.0 x 2.0 x 1.0	9.5 x 7.5
PCAK0001-10 *	2400~2500	100	2.0	9 x 1.6 x 1.6	9.5x 11.5
PPA2442E *	2400~2500	100	0	12 x 3.8 x 3.3	Unneeded

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Chip Antenna 2.4 + 5GHz

WiFi Dual Band

2.4+5GHz Dual Band					
Product Name	Working Freq. (MHz)	Bandwidth (MHz)(Min.)	Peak Gain (dBi)	Dimension (mm)	Clearance Area(mm)
DCAH0S00 *	2400~2500 4900~5850	100 900	2.5 / 4.0	10 x 4 x 1.5	20 x 11
DCAH0S04 *	2400~2500 5150~5850	100 700	1.0 / 2.5	3.05 x 1.6 x 0.55	7.5 x 6
DCAH0S19	2400~2500 5150~5850	100 700	1.7 / 1.9	3.23 x 1.66 x 0.45	7.5 x 6
DCAH0S20	2400~2500 5150~5850	100 700	1.0 / 1.5	3.2 x 1.6 x 0.5	8.6 x 6.2
PCAKFS02-10 *	2400~2500 5150~5850	100 700	2.0 / 1.5	5.0 x 2.0 x 1.0	9.5 x 7.5
WiFi 6e					
DCAH0S17 *	5150~7125	100 2000	3.0 / 4.0	10 x 4 x 1.5	20 x 11



Chip Antenna ISM/ NB-IoT

LPWAN, Sub 1G, LoRa, Sigfox, NB-IoT

NB-IOT					
Product Name	Working Freq. (MHz)	Bandwidth (MHz)(Min.)	Peak Gain (dBi)	Dimension (mm)	Clearance Area(mm)
DCA90S00 *	791~960	170	1.0	10×4×1.5	35 x 12.5
DCA00S02 *	700-800 or 820-960 or 700-800 & 1800	100 140 100	2.78 3.04 3.56	5*5*5.17	60*8.5
RFID/ ISM/ Lora					
DCAY0S02 *	868	7	4.0	5.0x3.0x0.5	12 x 10.35
DCAY0S03 *	915	26	4.0	5.0x3.0x0.5	12 x 10.35
PCAY0S00 *	868/915/433	20 / 30 / 2	2 / 2 / -3	15*4*1.2	35 x 20
PCAV0S00 *	433	5	0.0	20.1*5*1.6	40 x 24.25

Chip Antenna GNSS/ UWB

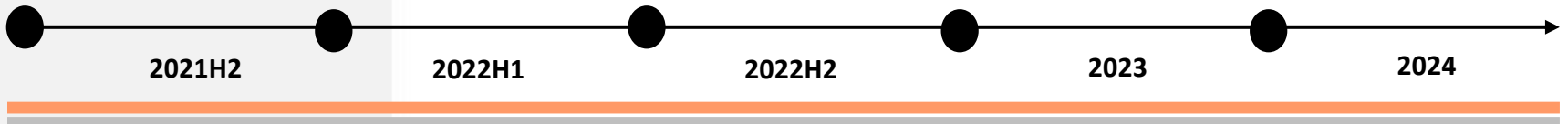
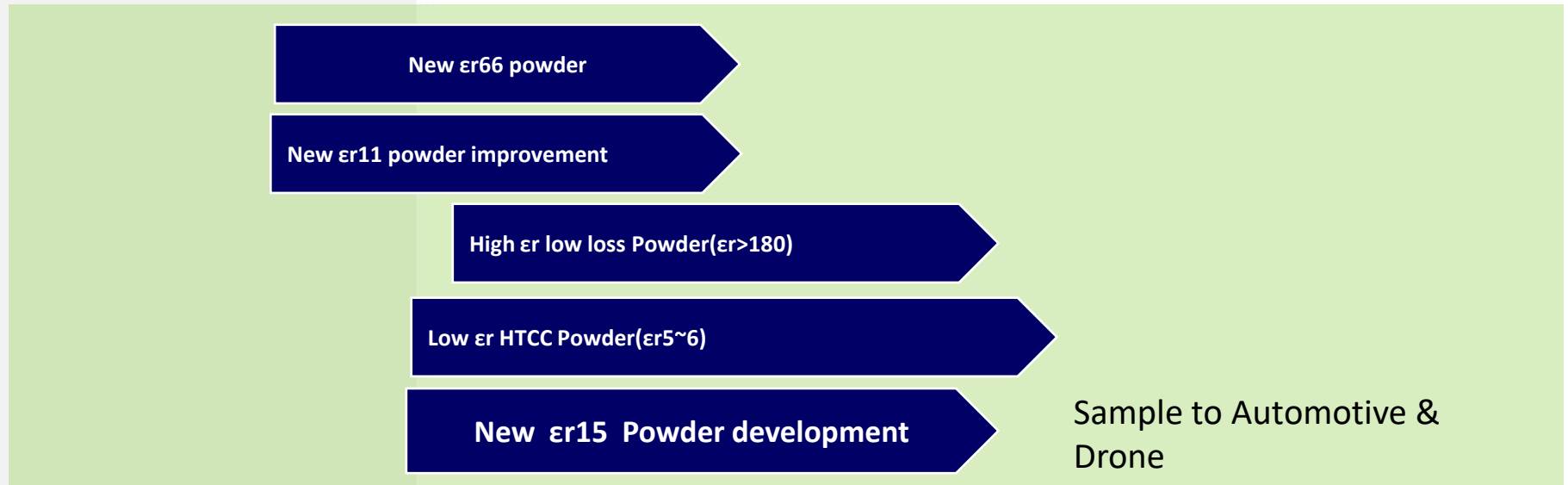
Tablet, Keyless, TPMS

GPS					
Product Name	Working Freq. (MHz)	Bandwidth (MHz)(Min.)	Peak Gain (dBi)	Dimension (mm)	Clearance Area(mm)
DCA70S01 *	1575.42MHz	50	1.8	3.05x1.6x0.55	5.9 x 5.7
DCAG0003 *	1575.42MHz	25	1.7	5x2.5x0.55	9 x 4.65
DPAG0003	1575.42 MHz	40	0.3	20x2x3.5	17 x 6.5
DPAG0S01	1575.42 MHz	40	0.0	10x4.0x3.0	11 x 6
PCAG0S00-15 *	1575.42MHz	10	2.0	7.0x2.0x1.6	11x10
GPS L1+L5					
DCAH0S12 *	1166~1186 1561~1602	20 50	1.9 / 2.8	10 x 4 x 1.5	15 x 9.5
UWB					
Product Name	Working Freq. (MHz)	Bandwidth (MHz)(Min.)	Peak Gain (dBi)	Dimension (mm)	Clearance Area(mm)
DCA00S00 *	3000~6000	3000	2 ~ 5.5	10x4x1.5	18 x 13
DCA00S03 *	3200-7200	4000	4.71(@4200 4.75@6200	8*6*1.23	13*10.26
DCA60S00	6240-8500	2260	3-4.5	3.2*1.6*1.1	7.8*8
DCA60S04*	6240-8500	2260	3-4.5	3.2*1.6*1.1	7.8*8

External Dipole Antenna

Model	Size(mm)		Colour	Connector type	frequency	Peak Gain	VSWR
	A	B					
EGDAA0A0	ψ10	136.9	冰	SMA(M)	1575 MHz	2.5dBi	<2.0
EWDA0A2	ψ10	109.2	塗	SMA(M)	2400 ~ 2500 MHz	2 dBi	<1.8
EWDA0A2	ψ13	195.5	塗	SMA(M)	2400 ~ 2500 MHz	3.8~4.7dBi	<2.5
EWDA0A1	ψ9.3	108.0	塗	SMA(M)	2400 ~ 2500 MHz	2dBi	<2.0
EWDAJ0A3	ψ13.5	200.0	塗	SMA(M)RP	2400 ~ 2500 MHz	4.6dBi	<2.0
EWDAJ0A2	ψ13	155.7	塗	SMA(M)RP	2400 ~ 2500 MHz	3 dBi	<2.0
EWDA0A4	ψ13	390.0	塗	SMA(M)	2400 ~ 2500 MHz	7.5dBi	<2.0
EWDA0A3	ψ10	136.9	冰	SMA(M)	5150 ~ 5850 MHz	2~3.5dBi	<2.5
EDBA0A2	ψ10	109.2	塗	SMA(M)	2400 ~ 2500 MHz 5150 ~ 5850 MHz	2~3.5dBi	<1.8
EDBAW0A0	ψ10	109.0	塗	SMA(M)RP	2400 ~ 2500 MHz 5150 ~ 5850 MHz	2dBi	<2.0
EISAA0A0	ψ7	50.5	塗	SMA(M)RA	433 MHZ	-2dBi	<3.0
ELBAA000	27	222.0	塗	SMA(M)	700 ~ 6 GHz	0~4dBi	<2.5
ELBAA0A0	19	171.0	塗	SMA(M)	700 ~ 960 MHz 1710 ~ 2170 MHz 2300 ~ 2700 MHz	2dBi	<3.5
ELRAA0A 1	ψ13	195.5	塗	SMA(M)	860 ~ 915 MHz	2dBi	<4.5

Powder Roadmap



Factory and facility

- Located in Tainan (Taiwan), Wuxi (China)
- Number of employees: 121 approx.
- Factory floor: 5,000 sqm approx.



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Quality Management System

IATF 16949



ISO 9001



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QMS certificate - continued

ISO 14001

QC 080000



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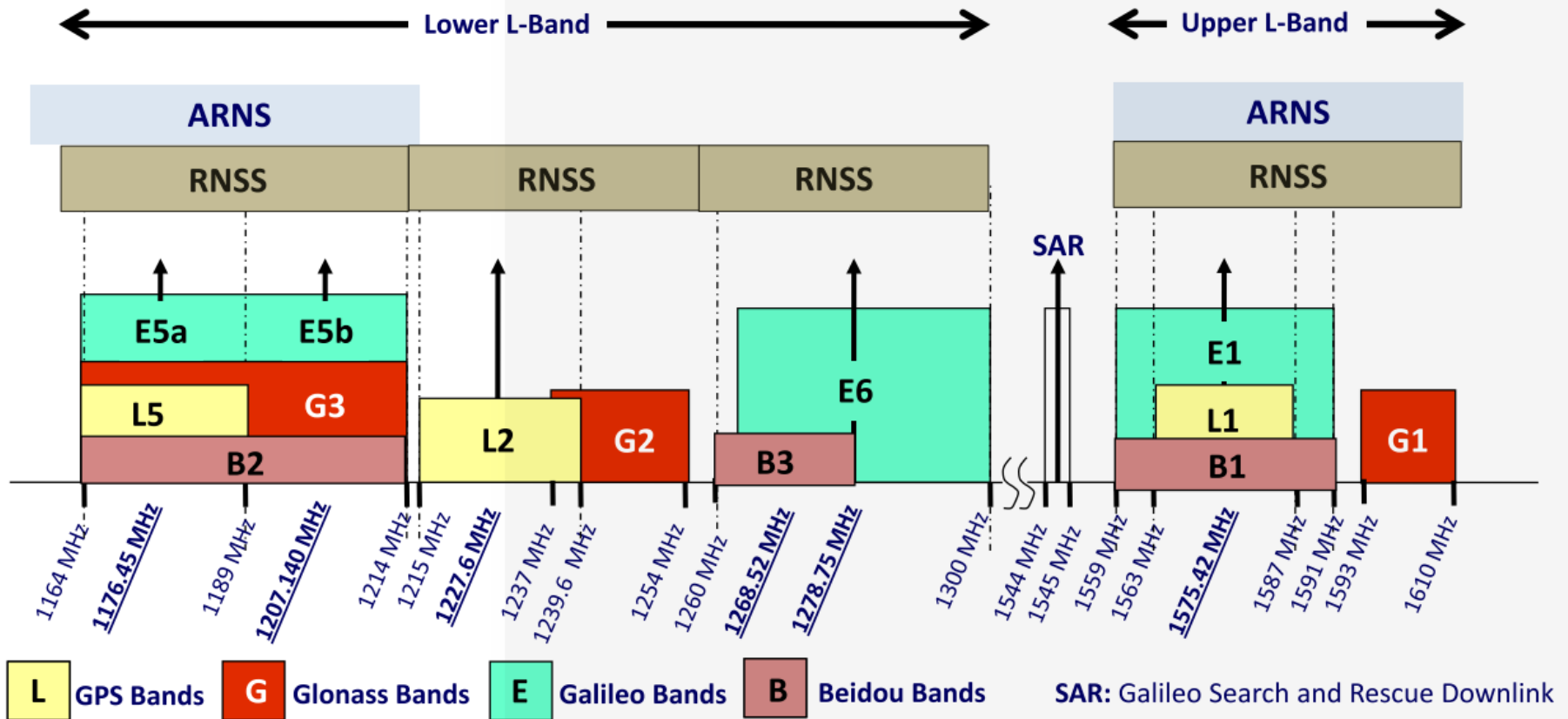
<http://www.cirocomm.com>

or

- Write an E-mail to

sales@cirocomm.com.tw

GNSS Spectrum



ARNS: Aeronautical Radio Navigation Service

RNSS: Radio Navigation Satellite Service

All GNSS frequency bands for the different satellite constellations. Most receivers track the bands around 1575 MHz. More sophisticated receivers are also able to track lower frequencies. Source: http://www.gage.upc.edu/gnss_book

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