Product Portfolio

RTC, Circulator, Silicon Oscillator, PHY, Clock modules, OCXO, TCXO, VCXO, Buffer, 1588 chipsets…

2021Q2

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Company Profile

- Founded in 2005.
- As a modern mobile communication solution and device supplier integrating R&D, manufacturing and sales, DAPU is a national high-tech enterprise and a leader in time-frequency subdivision industry.
- DAPU focuses on the R&D and promotion of products with clock, RF, microwave and sensor core technologies, and provides integrated solutions from chips and modules to products. We can fully satisfy the differentiated needs of customers in the fields of global communication network, power, industrial control, private network, medical treatment and automobile electronics.
- DAPU has national CNAS lab, Joint Lab of Chinese Academy of Sciences, Joint Lab of materials of Tsinghua University, Joint Lab of 5G core chips of HKUST and other key labs and engineering research centers. With strong R&D strength, DAPU has been the member of ITU-T and other standard organizations. We continue to invest a high proportion in new technology introduction, basic research and product R&D innovation, to ensure continuous leading and breakthrough in key fields of compensation algorithm, clock technology, RF technology, material technology and chip design.
- DAPU serves major domestic and overseas communication equipment suppliers with high recognized and trusted by global communication enterprises.

500+ staff

>25% R&D staff

Four subsidiaries

>15% R&D Investment

The best outsourcing factory

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Product Map

Product map

Clock products

Crystal

TCXO

OCXO

Clock modules

Timing card

Timing device

Clock chipsets

ASIC

1588 chips

RTC

Buffer

VCO

PLL

MEMS/TCXO

Programmable clock

PHY

Circulators

Circulators

Isolators

Ferrites

Millimeter wave products

5G mmWave Filter

- Green: existing products
- Orange: under research
- Blue: pre-research

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PART 01

Clock Module

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Solutions of Stratum 1 clock

- Holdover requirements of Stratum 1 clock： When higher stability clock is lost, holdover capability should be better than ±1.5uS/24H；

✓ When ±1.5us/24H is converted to the frequency of crystal at free run state, requirement of frequency tolerance is : 1.5uS/(24*3600*10^6uS)≈1.74E-11；

- Main factors that lead to the above crystal drift are: crystal day aging drift and temperature stability drift.

- Dapu promoted CM series including CM65(1pps reference), CM66(GPS/Compass receiver)， CM55(13mm height)， R55 according to the requirements of Stratum 1 Clock standards.

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Clock Module

Holdover Performance

- CM66--holdover ±1.5us@24 hours (△T±10℃)
- CM65--holdover ±1.5us@24 hours (△T±30℃)
- CM55--holdover ±1.5us@24 hours (△T±10℃)
- CM35--holdover ±1.5us@8 hours (△T±10℃)
- CM30--holdover ±1.5us@8 hours (△T±5℃)

Ultra Low Phase Noise

- CM66：-145dBc/Hz (100Hz);-155dBc/Hz (1kHz)
- CM65：-140dBc/Hz (100Hz);-150dBc/Hz (1kHz)
- CM30：-145dBc/Hz (100Hz);-155dBc/Hz (1kHz)

High Integrated, significant board space and system cost saving

- Support GPS/GLONASS/BEIDOU/GALILEO 1PPS
- Inside OCXO integrated
- With Compensation Algorithm
- UART、SPI Slot

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Clock Module

CM65 (Wide Temperature Tolerance, High Holdover Capability Clock Module)

- Operating Voltage： 5.0V
- Power Consumption： Warm-up 10W， Stable 4.0W
- ✓ Holdover Capability： ±1.5uS/24H (△T=±30℃)
- PKG： DIP 65X65X18.0mm
- Phase Noise： @10MHz

-120dBc/Hz	10Hz
-140dBc/Hz	100Hz
-150dBc/Hz	1KHz
-152dBc/Hz	10KHz
-155dBc/Hz	100KHz
-155dBc/Hz	1MHz

Wide Temperature Tolerance
High Holdover Capability

- Application： Base Station, Clock Source, Clock Server

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Clock Module

CM30 (Fast Stabilized, Smaller Size Clock Module)

The CM30 is a high-performance clock module designed to provide precise frequency, phase and TOD synchronization with external time reference for telecom and other applications

Features:

- Reference: 1PPS and TOD from GNSS receiver, IEEE 1588 etc.
- Frequency: 10MHz
- Temperature Stability: ±0.2ppb （-40℃~ +70℃）
- Holdover: 1.5μs/8 hrs (△T=±10℃)
- Short-term Stability: ±1.0×10E-11
- Time Accuracy: ±5.0×10-12 after 24hrs when locked to 1PPS
- Phase alignment: ±50ns when aligned to 1PPS
- Clocks Input/Output: 1*1PPS input, 1*1PPS output and 1*10MHz output
- Serial Interface: 1*UART for TOD, 1*1UART for management
- Management Interface: UART
- Aging : ±0.5ppb/day, ±0.03ppm/year
- Phase Noise: -150dBc/Hz@1KHz

Application: Power grid, clock reference, base station, high precision server, IP Backhaul etc.

Operating Temperature: -40℃~ +75℃

Package size: SMD 30.0*25.0*15.0mm

Smaller Size
Cost Effective solution

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Clock Module

CM66 (Clock Module with GPS/Compass receiver)

- Operating Voltage： 5.0V
- Power Consumption： Warm-up 10W， Stable 5.0W
- ✓ Holdover Capability： ±1.5uS/24H (△T=±10℃)
- ✓ Dual Module : Internal GPS / Dual Module Receiver
- PKG： DIP 60X60X13.0mm
- Phase Noise： @10MHz

-120dBc/Hz	10Hz
-140dBc/Hz	100Hz
-150dBc/Hz	1KHz
-152dBc/Hz	10KHz
-155dBc/Hz	100KHz
-155dBc/Hz	1MHz

High Holdover Capability with GPS Receiver

- Application： Base Station, Clock Source, Clock Server

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Clock Module

CM35 (IEEE 1588v2 supported Clock Module)

The CM35 is a high-performance clock module designed to provide precise frequency, phase and TOD synchronization information for telecom and other applications. The module supports PTP Grandmaster, PTP Slave and BC mode.

Features :

- Support PTP Grandmaster, PTP Slave, BC mode
- Time aligned output pair: 1PPS and 125MHz divided by n(n=4 to 125000)
- Frequency aligned output: 1Hz and programmable frequency 1KHz to 62.5MHz
- Holdover: 1.5μs/8 hrs (△T=±10℃)
- Recovery Precision: ±50ns after 24hrs
- Support ITU Profile: G.8265.1, G.8275.1, G.8275.2
- Clock: 3 clock inputs and 4 clock outputs
- Port: 2xSGMII and 2xUART(1xTOD)
- Management Interface: UART

Module design for IEEE 1588

Application: Power grid, clock reference, base station, high precision server, IP Backhaul etc.
Operating Temperature: -20℃~ +75℃
Package size: SMD 40.0*35.0*13.0mm

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Timing Device - DP3000E

Description:

- The DP3000E is a high-performance Grand Master device designed to provide precise frequency, phase and time-of-day synchronization information for LTE/LTE-A networks and other applications. The device is IEEE 1588-2008 (1588V2) standard compliant and uses GNSS satellite signal as a primary time reference.

Features:

- High-precision clock synchronization
- GNSS timing source
- Full support of IEEE1588V2
- One-step/two-step support
- G.8261, G.8263, G.8265.1/2 , G.8272, G.8275.1 compliant
- Synchronous Ethernet per ITU-T G.8262, G.8264
- Dimensions : 250 mm (H) x 190 mm (W) x 93 mm (D).
- Ingress Protection:IP66
- SFP support

Performance:

- The performance of the time signal using IEEE 1588 PTP:

✓ Track accuracy: ± 20 ns (compared to UTC)

✓ Holdover : ± 1.0 μs @ 24 hours, ΔT=±30℃

- Network capacity: 500 slave clocks at the rate of 16 packets/s
- The performance of the synchronous Ethernet signal:

  Frequency accuracy: ± 0.5 ppb @ 24 hours

  Holdover accuracy: ± 1 ppb @ 24 hours

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PART 02

OCXO

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DAPU TELECOM

Solutions of Stratum 2 clock

- Requirement of Stratum 2 clock standard： holdover stability should be better than ±1.0E-10/day；
- Main factors caused the above drift are crystal day aging drift and temperature stability drift.
- Dapu promotes O22B and O23B series according to the requirements of Stratum 2 clock standards.

Solutions of Stratum 3E clock

✓ 2 classifications according to stratum 3E clock holdover specification:

1. When temperature is varying, overall drift is better than ±1.0E-8/24H；
2. When temperature is varying, overall drift is better than ±1.0E-8/24H； When temperature dose not change, overall drift is better than ±1.0E-9/24H；

- Main factors that affect the above frequency drift are crystal day aging drift and temperature stability drift.
- According to the required solutions of stratum 3E clock, Dapu promotes：

1. O11F series that meet the clock specification ±1.0E-8/24H@(-40~105℃).
2. O11H and O22S that meet the specification ±1.0E-8/24H and day drift ±1.0E-9 at stable temperature.

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O23B (Meet the holdover demand of ±1.5uS/24H@±10℃)

- Operating Voltage： 3.3V/5.0V
- Power Consumption： Warm up 4.0W， Stable 1.5W
- PKG： DIP 36X27X12.7mm
- ✓ Temperature Stability： -40℃~ +95℃, ±0.02ppb/ ±0.05ppb/ ±0.1ppb
- ✓ Day-Aging： ±0.1ppb, Year-Aging： ±10ppb
- Phase Noise： @10MHz

-125dBc/Hz	10Hz
-145dBc/Hz	100Hz
-150dBc/Hz	1KHz
-155dBc/Hz	10KHz
-155dBc/Hz	100KHz
-155dBc/Hz	1MHz

Wide Temperature Range Stratum 2A

- Application： Banking, Power Grid, Base Station, Router, Switch, Instrument

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O22S (Meet the holdover demand of ±1.5uS/8H@±10℃)

- Operating Voltage： 3.3V/5.0V
- ✓ Power Consumption： Warm Up 2.5W， Stable 0.8W
- ✓ PKG： SMD 25.4X22.4X12mm
- ✓ Temperature Stability： -40℃~ +105℃， ±0.05ppb / ±0.1ppb / ±0.5ppb
- ✓ Slope: 0.1ppb/°C
- Day-Aging： ±0.3ppb, Year-Aging： ±0.03ppm
- Phase Noise： @10MHz

-120dBc/Hz	10Hz
-140dBc/Hz	100Hz
-155dBc/Hz	1KHz
-160dBc/Hz	10KHz
-162dBc/Hz	100KHz
-165dBc/Hz	1MHz

5G BBU, Small Cell Solution

SMD Stratum 2 OCXO

- Application： Banking, Power Grid, Base Station, Router, Switch, Instrument

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OCXO

O11H (Fully meet requirement of stratum 3E clock)

- Operating Voltage： 3.3V
- Power Consumption： Warm Up1.5W， Stable 0.6W
- PKG： SMD 10.0X15.0X9.0mm
- ✓ Temperature Stability： -40℃~ +95℃, ±5ppb/ ±10ppb
- ✓ Slope: 0.5ppb/°C
- ✓ Year-Aging： ±0.05ppm
- Phase Noise： @10MHz

-120dBc/Hz	10Hz
-140dBc/Hz	100Hz
-150dBc/Hz	1KHz
-155dBc/Hz	10KHz
-155dBc/Hz	100KHz
-160dBc/Hz	1MHz

5G AAU, Small Cell Solution

SMD, Small size Hermetically Meet 15 ℃/min temperature variation rate

- Application： Base Station, Broadcasting, Instrument, Micro Wave, Picocell, CPE-PTN, Dispatch System, Cluster Network

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O79 (small package and high temperature stability)

- Operating Voltage： 3.3V
- Power Consumption： Warm Up 460mA， Stable 250mA
- ✓ PKG： SMD 9.7*7.5*3.9mm
- ✓ Temperature Stability： -40℃~ +95℃, ±5ppb/±10ppb/±20ppb
- ✓ Slope: 1ppb/°C
- Day-Aging： ±3ppb, Year-Aging： ±0.1/0.3ppm
- ✓ Phase Noise： -160dBc@1KHz Typ.

-102dBc/Hz	10Hz
-135dBc/Hz	100Hz
-155dBc/Hz	1KHz
-162dBc/Hz	10KHz
-165dBc/Hz	100KHz
-165dBc/Hz	1MHz

5G AAU, Small Cell Solution

Application： O79 Series OCXO is designed specially for 5G AAU application, also suitable for apllications with small package and high temperaure stability requirements.

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O75 (small package and high temperature stability)

- Operating Voltage： 3.3V
- Power Consumption： Warm Up 460mA， Stable 230mA
- ✓ PKG： SMD 7.5*5.5*3.3mm
- ✓ Temperature Stability： -40℃~ +95℃, ±20ppb/±50ppb
- ✓ Slope: 1ppb/°C
- Day-Aging： ±5ppb, Year-Aging： ±4.6ppm/15 years
- ✓ Phase Noise： @20MHz

-110dBc/Hz	10Hz
-140dBc/Hz	100Hz
-160dBc/Hz	1KHz
-165dBc/Hz	10KHz
-165dBc/Hz	100KHz
-165dBc/Hz	1MHz

5G AAU, Small Cell Solution

Application： O75 Series OCXO is designed specially for 5G AAU application, also suitable for apllications with small package and high temperaure stability requirements.

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O22B -100M (Ultra low phase noise: -140dBc/Hz@10Hz)

- Operating Voltage：3.3V/5.0V/12V
- Power Consumption：Warm Up 4.5W，Stable 2.0W max
- PKG：SMD 25.4X25.4X13.0mm
- Temperature Stability：-40℃~ +85℃，±10ppb/ ±50ppb
- Day-Aging：±3ppb, Year-Aging： ±0.1ppm
- ✓ Phase Noise： @100MHz

-110dBc/Hz	10Hz
-140dBc/Hz	100Hz
-165dBc/Hz	1KHz
-180dBc/Hz	10KHz
-185dBc/Hz	100KHz
-185dBc/Hz	1MHz

- Application：Base Station, LTE, Instrument, Micro Wave

Ultra low phase noise

High frequency, low phase noise

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Small Size OCXO

Smaller Size, High Cost Performance

SC-Cut

PKG: SMD 14 X 9 X 8mm

1. Supply Voltage: 3.3V
2. Temperature Stability: ±10ppb(-40℃~+85℃)
3. Year Aging: ±0.1ppm @ 19.2MHz
4. Package: SMD 14 X 9 X 8mm
5. Phase Noise: -150dBC/Hz@1KHz for 10MHz

PKG: SMD 9 X 7 X 3.9mm

1. Supply Voltage: 3.3V
2. Temperature Stability: ±10ppb(-40℃~+95℃)
3. Year Aging: ±0.3ppm@ 19.2MHz
4. Package: SMD 9 X 7 X 3.9mm
5. Phase Noise: -158dBC/Hz@1KHz for 19.2MHz

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PART 03

TCXO VCXO Crystal

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Solutions of Stratum 3 clock

- According to the requirements of stratum 3 clock standards: Frequency drift overall in 10 years should be better than ±4.6ppm.

- Dapu promotes T75,T53 and T32 series according to the requirements of stratum 3 clock standards.

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T75 (Normal Stratum 3 TCXO, ultra-wide temperature range)

Outdoor RRU/RRH/ AAU

- Operating Voltage： 3.3V
- Operating Current： 2mA ~8mA
- PKG： SMD 7X5X2.2mm
- ✓ Temperature Stability： -40℃~ +105℃, ±0.05ppm/±0.1ppm/±0.28ppm/ ±0.5ppm
- Year-Aging： ±1ppm
- Phase Noise： @10MHz

-95dBc/Hz	10Hz
-120dBc/Hz	100Hz
-138dBc/Hz	1KHz
-148dBc/Hz	10KHz
-150dBc/Hz	100KHz

High stability under severe environment: temperature 4℃/min and wind speed changes from static to 4m/S

- Application： Small Cell, GPS, SDH, PTN, Nanocell, Femtocell, Picocell, CPE-PTN, WLAN

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TCXO for AAU/RRU

High Temperature resistance, and wide temp range up tp 105c

PKG: SMD 7 X 5 X 2mm

1. Supply Voltage: 3.3V
2. Temperature Stability: ±0.14ppm(-40℃~+85℃)
3. Year Aging: ±1.0ppm @ 20MHz
4. Package: SMD 7 X 5 X 2mm
5. Phase Noise: -138dBC/Hz@1KHz for 20MHz

PKG: SMD 7 X 5 X 2mm

1. Supply Voltage: 3.3V
2. Temperature Stability: ±0.05/±0.14ppm(-40~105℃)
3. Year Aging: ±1.0ppm
4. Package: SMD 7 X 5 X 2mm
5. Phase Noise: -145dBC/Hz@1KHz for 38.88MHz
6. G-sens: 0.5ppb/G max

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T53/T32 (Supper Small Size TCXO, ultra-wide temperature range)

- Operating Voltage： 2.8V/3.0V/3.3V
- Operating Current： 1mA ~3mA
- PKG： SMD 3.2X2.5X1.0mm
- ✓ Temperature Stability： -40℃~ +105℃, ±0.1ppm/±0.28ppm/±0.5ppm
- Year-Aging： ±1ppm
- Phase Noise： @10MHz

-90dBc/Hz	10Hz
-120dBc/Hz	100Hz
-140dBc/Hz	1KHz
-145dBc/Hz	10KHz
-148dBc/Hz	100KHz

Supper Small TCXO

- Application： Femtocell、 Nanocell

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VC936/V53 (High frequency, low phase noise)

- Operating Voltage： 3.3V
- Operating Current： 65mA
- PKG： SMD 14.5*9.6*5.5mm/ SMD 5032
- Pull rang: 70~130ppm/V
- Phase Noise： @ 491.52M, 122.88M

491.52M	
-55dBc/Hz	10Hz
-85dBc/Hz	100Hz
-110dBc/Hz	1KHz
-130dBc/Hz	10KHz
-142dBc/Hz	100KHz

122.88M @ 105°C	
-67dBc/Hz	10Hz
-99dBc/Hz	100Hz
-127dBc/Hz	1KHz
-147dBc/Hz	10KHz
-152dBc/Hz	100KHz

Low phase noise

- Application： RRU

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32.768k Crystal

Ultra-small size; support 6pF, 7pF and 12.5pF

- Frequency range: 32.768KHz
- External dimensions: 1.65x1.05x0.5 mm, 3.2*1.5mm
- Oscillation mode : fundamental
- Application：
  Smart Meters, PPS Timekeeping, Medical Electronics, Machine to Machine (M2M), Smart City, Smart Home, Home Appliances, Health and Wellness Monitors, Wearable (Smartwatch, Fitness Tracker), Consumers , IoT.

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PART 04

Circulator & Isolator

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Circulator

Drop-In Circulator & Isolator

19mm*19mm、 25. 4mm*25, 4mm、31. 8mm*31. 8mm、
31. 8mm*38. 8mm …

SMD Circulator & Isolator

Ø7mm、 Ø10mm、 Ø12. 5mm、 Ø15mm、 Ø25mm、
9mm*9mm …

SMD Circulator & Isolator (low power)

5mm*5mm、 7mm*7mm …

***3** Products Series*

***38** size of package*

***273** Product PNs*

Continue to increase

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Circulator | Product Features

Parameter	Features Description
Frequency	200MHz ~ 9000MHz
Isolation	32dB with single junction
Insertion Loss	0.15dB Min. with single junction
IMD	Up to -80 dBc
Peak Power	Up to 2500W
Reflected Power	Up to 200W

There are 25 core members of the R&D team, with an average of more than 10 years' experience in the development of circulators. Now the whole product range covers sub 6GHz and part of microwave frequency up to 9GHz.

Product Advantages:

The following indicators are all industry-leading

- Low Loss
- Lower Intermodulation
- High consistent of Impedance Matching

IL<0.2dB（For part of 5G bands）

At present, the mainstream application is still SMD especially for mass production. The special buckle cover design patented by DAPU, can avoid the metal chip problem which may be caused by the screw cover design. It will greatly improve the direct pass rate and quality stability of the product.

Yield > 99%

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Circulator | Ø10mm & 9mm*9mm SMD package

DAPU PN	Frequency（MHz）	Direction	Insertion Loss（dB）	Isolation（dB）	Return Loss（dB）	Power FWD/REV/PEAK (W)
DP0161C	2496-2690	CW	0.25	21	22	50/50/200
DP0162C	2496-2690	CCW	0.25	21	22	50/50/200
DP0159C	3600-3800	CW	0.23	22	22	50/50/200
DP0160C	3600-3800	CCW	0.23	22	22	50/50/200
DP0187C	3400-3600	CW	0.23	21	22	50/50/200
DP0188C	3400-3600	CCW	0.23	21	22	50/50/200
DP0079C	3400-3800	CW	0.3	20	20	50/50/200
DP0080C	3400-3800	CCW	0.3	20	20	50/50/200

Ø10mm

DAPU PN	Frequency（MHz）	Direction	Insertion Loss（dB）	Isolation（dB）	Return Loss（dB）	Power FWD/REV/PEAK (W)
DP1001C	3400-3700	CW	0.33	20	20	50/50/200

9mm * 9mm

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Circulator | Ø7mm SMD package

DAPU PN	Frequency（MHz）	Direction	Insertion Loss（dB）	Isolation（dB）	Return Loss（dB）	Power FWD/REV/PEAK (W)
DP0017C	2515-2685	CW	0.33 Max.	20	20	50/50/200
DP0018C	2515-2685	CCW	0.33 Max.	20	20	50/50/200
DP0019C	3400-3700	CW	0.35 Max.	22	22	50/50/200
DP0020C	3400-3700	CCW	0.35 Max.	22	22	50/50/200
DP0119C	3300-3800	CW	0.5 Max.	16	16	50/50/200
DP0120C	3300-3800	CCW	0.5 Max.	16	16	50/50/200
DP0121C	4400-5000	CW	0.5 Max.	16	16	50/50/200
DP0122C	4400-5000	CCW	0.5 Max.	16	16	50/50/200
DP0201C	3400-3600	CW	0.3 Max.	20	22	50/50/200
DP0202C	3400-3600	CCW	0.3 Max.	20	22	50/50/200
DP0205C	2496-2690	CW	0.4 Max.	20	22	50/50/200
DP0206C	2496-2690	CCW	0.4 Max.	20	22	50/50/200

Ø7mm

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Circulator | 5mm*5mm SMD package

Frequency (MHz)	Direction	Insertion Loss (dB)	Isolation (dB)	VSWR	Power FWD/REV (W)
758-803	CW	1.3	10	1.8	10/2
758-803	CCW	1.3	10	1.8	10/2
925-960	CW	0.8	10	1.6	10/2
925-960	CCW	0.8	10	1.6	10/2
1805-1880	CW	0.8	13	1.6	10/2
1805-1880	CCW	0.8	13	1.6	10/2
2110-2170	CW	0.8	13	1.6	10/2
2110-2170	CCW	0.8	13	1.6	10/2

NEW

- The target is to improve insertion loss to 0.7dB Max. in the whole temperature in 2021.

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Circulator | Spec. Comparison

Main parameters	Customer required spec.	DP (Ø10mm)	DP (Ø7mm)
Frequency (MHz)	2496 ~ 2690	2496 ~ 2690	2496 ~ 2690
Isolation (dB)	20	21	20
Return Loss (dB)	22	22	22
Insertion Loss (dB)	0.25 (10mm), 0.35 (7mm)	0.25	0.35
Impedance (Ω)	50	50	50
3rd IMD (Max.) (dBc)	-60 (2 x 5W)	-65 (2 x 5W)	-60 (2 x 5W)
Power FWD/REV/PEAK (W)	30/30/150	50/50/200	50/50/200
Operating Temp. (℃)	-40 to +110	-40 to +110	-40 to +110

Ø7mm

Main parameters	Customer required spec.	DP (Ø10mm)	DP (Ø7mm)
Frequency (MHz)	3400 ~ 3600	3400 ~ 3600	3400 ~ 3600
Isolation (dB)	20	22	20
Return Loss (dB)	22	22	22
Insertion Loss (dB)	0.25 (10mm), 0.3 (7mm)	0.23	0.3
Impedance (Ω)	50	50	50
3rd IMD (Max.) (dBc)	-60 (2 x 5W)	-66 (2 x 5W)	-60 (2 x 5W)
Power FWD/REV/PEAK (W)	30/30/150	50/50/200	50/50/200
Operating Temp. (℃)	-40 to +110	-40 to +110	-40 to +110

Ø10mm

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PART 05

Clock IC

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Real Time Clock IC _INS56xx

- Built-in: 32.768 kHz TCXO
- High Stability:
  - ±2ppm @ -40℃ ~ +85℃
  - ±5ppm @ -40℃ ~ +85℃
  - ±10ppm @ -40℃ ~ +85℃
  - ±5ppm @ -20℃ ~ +70℃/±20ppm @ -40℃ ~ +85℃
- Ultra-low current consumption: 0.5uA (Typ.)
- Supports I2C-Bus
- Alarm interrupt and Wakeup timer interruption
- Auto correction of leap years (from 2000 to 2099)
- Wide voltage range: 1.6 V to 5.5 V
- Built-in Backup switchover circuit
- Package: 3.2*2.5*1.0mm @10 pins

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10kHz to 350MHz Series

- Frequency stability: ±50ppm
- Built-in LDO and power filter circuit
- Single-end output: 10kHz ~ 212.5MHz
- Differential output: 10kHz ~ 350MHz
- LVDS, LVPECL, HCSL, CML, LVCMOS or dual LVCMOS output
- Jitter as low as 350 fs RMS@12 kHz ~ 20 MHz

Application:
Optical modules, SONET/SDH, FPGA/ASIC clock generation, Networking switches and gateways, System clocking, Storage, servers and datacenters 100G/200G/400G/800G ethernet switches and routers.

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Clock Fanout Buffer

Ultra-low Jitter

- Output： 1:5 / 1:10 LVCMOS
- Additive RMS Jitter: 50fs/Typical
- Level Translator： 3.3/2.5/1.8/1.5V
- Frequency： 0~200MHz
- Package： QFN-24/32

  4.0mm X 4.0mm

  5.0mm x 5.0mm

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Sync with you!

Clock IC | PHY

- IEEE 802.3az-2010 (EEE) Compliant
- WoL (Wake-on-LAN)
- Crossover Detection & Auto-Correction
- Supports Interrupt function
- Supports Base Line Wander Correction
- Operation Temperature Range:

  0℃ ~ +70℃//-40℃ ~ +85℃//-40℃ ~ +105℃

Application:

Enterprise & SOHO, Wireless Router, Industrial controls and automation,

LED Display, Motor drives, Industrial factory automation, etc.

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PART 05

1588 Chipsets

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IEEE 1588v2 Chipset - DPSync

One-chip Sync solution

- On chip packet filtering algorithm, BMCA and clock management
- No risk from CPU loading & multi-task
- Seamless integration of all clocks
  SETS, PTP, SyncE & hybrid
- Flexible Timestamping options (3 Modes)

Easy for design in

- No CPU load
- Simple interface used only for control and configuration of DPSync
- Free API code provided for easy design
- Zero-effort upgrade: new FW maintains API interface compatibility；
- Support for all system architectures

Support Most Profile

- G.8261
- G.8262
- G.8265.1
- G.8275.1
- G.8273.2

Sync with you!

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IEEE 1588v2 Chipset - DPSync

Sync with you!

IEEE 1588v2 Chipset - DPSync

Available NOW				
Picture	**PN**	**Package**	**Key Features**	**Typical Target Market**
	ACS9520	BGA 256 14x14(mm)	Multiple simultaneous masters and hybrid salves.	PTN, I.P. Backhaul, Aggregation, Routers, Switches, NodeB, uWave
	ACS9522	BGA 324 19x19(mm)	As ACS9520 with internal RAM	
	ACS9521	BGA 324 19x19(mm)	As ACS9522 without internal SETS module	
	ACS9528	BGA 324 19x19(mm)	As ACS9521 without PTP slave function	

Sync with you!

Contact

Thank You !

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