

Customer Code :

DATASHEET

DAPU P/N:CC107C-D128-10.00MHz

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DAPU			Customer Approval
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2018.1.30			

Guangdong Dapu Telecom Technology Co., Ltd

Bldg13-16, N. Ind. Zone, SSL Industry Park, Dongguan City, Guangdong Province, China

TEL: 0086-0769-88010888 FAX: 0086-0769-81800098



1. Description

The CC107C-D128-10.00MHz is a high holdover performance, high integration clock module with advanced compensation algorithm. It can achieve better than $1E-12$ frequency stability and $\pm 1.5\mu s$ holdover capability over 24 hours.

The CC107C-D128-10.00MHz provides messages to improve the reliability and maintainability of the network.

The CC107C-D128-10.00MHz has a built-in GNSS Receiver as the timing reference.

2. Features

- Built-in GNSS receiver, GPS/GLONASS/BeiDou/QZSS supported.
- Timing accuracy $\leq 20ns$.
- Better than $1.5\mu s$ over 24hour @ $\pm 5^{\circ}C$ variation without SyncE.
- Reference clock could be derived from GNSS or configured as SyncE.
- Firmware could be updated remotely.
- Operation temperature $-40^{\circ}C \sim 85^{\circ}C$.

3. Pin Definition

3.1. SMA Connector

A SMA-KWE connector is placed on the top of the PCB for GNSS RF input.

3.2. Connector between Timing Card and PTP Card

A connector, 61083-064402LF, is the interface between the clock card and main board, placed on the bottom of the PCB. The pin definition of the connector is as table 1.



PIN	ROW1	I/O	ROW2	I/O	PIN
1	VCC5V0	I	VCC5V0	I	2
3	GND	-	GND	-	4
5	1PPS_OUT	O	VCC5V0	I	6
7	TOD_OUT	O	GND	-	8
9	GND	-	INT	O	10
11	GND	-	RESERVED3	I/O	12
13	TXD1	O	GND	-	14
15	TXD2	O	GND	-	16
17	GND	-	RXD1	I	18
19	GND	-	RXD2	I	20
21	10M-1	O	GND	-	22
23	GND	-	GND	-	24
25	GND	-	SYNCE CLOCK	I	26
27	GND	-	GND	-	28
29	LOCK	O	10M-2	O	30
31	LOCK_DISABLE/ENABLE	I	GND	-	32
33	GND	-	TIMING_CARD_TYPE	O	34
35	GND	-	TIMING_ONLINE	O	36
37	NC	I	GND	-	38
39	NC	I	GND	-	40
41	GND	-	NC	I	42
43	GND	-	NC	I	44
45	NC	I	GND	-	46
47	NC	I	GND	-	48
49	GND	-	NC	O	50
51	GND	-	NC	O	52
53	RESET	I	GND	-	54
55	RESERVED1	I/O	RESERVED2	I/O	56
57	GND	-	GND	-	58
59	VCC5V0	I	VCC5V0	I	60

Table 1 Pin Definition of connector P9



4. Electrical Characteristics

GNNS timing modules Input	Parameters	Min.	Typ.	Max.	Unit.	Test Condition	
	Connector	SMA-KWE					
Supply Voltage	Parameters	Min.	Typ.	Max.	Unit.	Test Condition	
	Supply Voltage	4.75	5.0	5.25	V		
	Current Consumption			3000	mA		
	Steady Consumption		900		mA	During steady state operation @25°C	
	Connector	Refer to Table 1					
1 PPS Output	Parameters	Min.	Typ.	Max.	Unit.	Test Condition	
	Waveform	HCMOS					
	High-Level Output Voltage(V_{OH})	2.7			V		
	Low-level Output voltage (V_{OL})			0.4	V		
	Pulse Width	0.1	100	400	ms		
	Phase accuracy	-20		20	ns		
	Connector	Refer to Table 1					
TOD	Parameters	Min.	Typ.	Max.	Unit.	Test Condition	
	Waveform	HCMOS					
	High-Level Output Voltage(V_{OH})	2.7			V		
	Low-level Output voltage (V_{OL})			0.4	V		
	Connector	Refer to Table 1					
10MHz Output	Parameters	Min.	Typ.	Max.	Unit.	Test Condition	
	Waveform	HCMOS					
	High-Level Output Voltage(V_{OH})	2.7			V		
	Low-level Output voltage (V_{OL})			0.4	V		



	Duty Cycle	45	50	55	%	
	Connector	Refer to Table 1				
Serial Interfaces	Parameters	Min.	Typ.	Max.	Unit.	Test Condition
	Rx high-level Input Voltage (VH)	2.7			V	
	Rx low-level Input Voltage (VL)			0.4	V	
	Tx high-level Output Voltage(VH)	2.7			V	
	Tx low-level Output Voltage (VL)			0.4	V	
	Serial Protocol	115200-N-8-1				
	Connector	Refer to Table 1				
Interrupt	Parameters	Min.	Typ.	Max.	Unit.	Test Condition
	High-Level Output Voltage(V _{OH})	2.7			V	
	Low-level Output voltage (V _{OL})			0.4	V	
	Signal indication	High:Active Low:Passive				
	Connector	Refer to Table 1				
TimingCard Online	Parameters	Min.	Typ.	Max.	Unit.	Test Condition
	High-Level Output Voltage(V _{OH})	2.7			V	
	Low-level Output voltage (V _{OL})			0.4	V	
	Signal indication	High:Absent Low:Present				
	Connector	Refer to Table 1				
Reset	Parameters	Min.	Typ.	Max.	Unit.	Test Condition
	High-Level Output Voltage(V _{OH})	2.7			V	
	Low-level Output voltage (V _{OL})			0.4	V	
	Signal indication	Low:Active				
	Connector	Refer to Table 1				



	Parameters	Min.	Typ.	Max	Unit.	Test Condition
Lock Signal Output	High-Level Output Voltage(V_{OH})	2.7			V	
	Low-level Output voltage (V_{OL})			0.4	V	
	Connector	Refer to Table 1				
Lock Disable/Enable Signal Input	Parameters	Min.	Typ.	Max	Unit.	
	High-Level Output Voltage(V_{OH})	2.7			V	
	Low-level Output voltage (V_{OL})			0.4	V	
	Signal indication	High: Lock Enable Low: Lock Disable				
Connector	Refer to Table 1					
Timing Card Type Signal Output	Parameters	Min.	Typ.	Max	Unit.	
	High-Level Output Voltage(V_{OH})	2.7			V	
	Low-level Output voltage (V_{OL})			0.4	V	
	Signal indication	High: Timing Processing Card Low: Timing Card				
Connector	Refer to Table 1					
SyncE Clock Signal Input	Parameters	Min.	Typ.	Max	Unit.	
	High-Level output Voltage(V_{OH})	2.7			V	
	Low-level Output voltage (V_{OL})			0.4	V	
	Frequency	10MHz				
Connector	Refer to Table 1					
Power LED Indication	Parameters	Description				
	Color	Green				
	Status	OFF: The system 5V power off ON : The system 5V power on				
	PCB silk-screen	D2				
Clock LED Indication	Parameters	Description				
	Color	Green				



	Status	OFF: Free Run ON: Hold Over Once per second: Locked Three times per second: Fast Capture
	PCB silk-screen	D3

Table 2 Electrical Characteristics

5. Software Description

The CC107C-D128-10.00MHz is customized for UTStarcom, has a UART interface to communicate with the mainboard. The protocol and message follow “GM30SoftwareInterfaceSpecification” from UTStarcom.

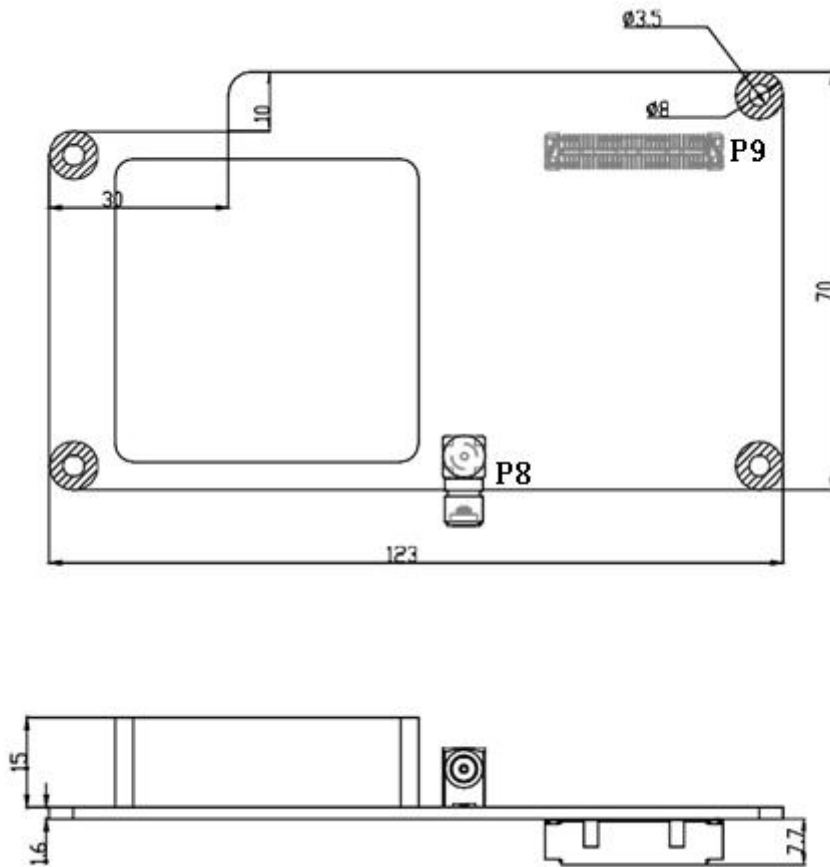
6. Inventory information

The inventory information is defined as

Name	Data Type	Value Range	Prefix	Example Value	Description
Module Name	String	size:30	NAME:	Timing card	Module Name
Manufacture Factory Information	String	size:10	FAC:	DAPU	Manufactory ID
Manufacture Date	String	Size:10	DATE:	2016/01/02	Manufacture Date
MPN	String	size:32	PN:	2424446805	Part No.
Serial Number	String	size:16	SN:	1012010010603 132	Serial No. first three bytes: Manufactory ID the following eight bytes:date the rest of bytes: manufactory part no
HWVersion	String	size:32	VER:	B2	Hardware Version
FWVersion	String	size:32	VER:	B2	Firmware Version
SWVersion	String	size:32	VER:	B2	Software Version

Table 3 Inventory Information

7. Mechanical Structure(mm)



Note1: Tolerance ± 1.0 mm