Customer Code : _____

DATASHEET

DAPU P/N: **CM66G-K129-30.72MHz**

Customer P/N: _____

DAPU			Customer Approval
Drew	Audited	Approved	
Amway.wei	Steven.Sun	James.Liu	
Date: 2015.05.29			Stamp, please! Thanks!

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

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Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	Amway	2015.05.29

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1. Electrical Parameters

Internal Receiver Characteristics	PARAMETERS						NOTES
	Type	Auto Position Lock					
	Number Of Channels	50					
	Frequency Band	L1 (1575.42 MHz)					
	Tracking Code	C/A Code					
	Tracking Capability	12 Satellites					
	Sensitivity	Tracking & Navigation -162dBm					
		Reacquisition -157dBm					
		Cold Start (Autonomous) -148dBm					
	Antenna INPUT	SMA-KE					CN1
State Input	Parameters	Min.	Typ.	Max.	Unit.		
	Lock	2.7			V		<5mA Load
	Holdover			0.4	V		<5mA Load
	Connector	Pin 8					
1PPS Output	Parameters	Min.	Typ.	Max.	Unit.		Test Condition
	Waveform	HCMOS					
	High-Level Output Voltage (V_{IH})	2.7			V		
	Low-Level Output Voltage (V_{IL})			0.4	V		
	Pulse Width		100		ms		
	Connector	Pin 12					
State Output	Parameters	Min.	Typ.	Max.	Unit.		
	Lock	2.7			V		<5mA Load
	Holdover			0.4	V		<5mA Load
	Connector	Pin 5					
RF Output1	Parameters	Min.	Typ.	Max.	Unit.		Test Condition
	Nominal Frequency	10.00			MHz		
	Waveform	HCMOS					
	High-level Output voltage (V_{OH})	2.7			V		<5mA Load
	Low-level Output voltage (V_{OL})			0.4	V		<5mA Load

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	Rise/Fall Time			8	ns	<5mA Load
	Duty Cycle	45	50	55	%	<5mA Load
	Accuracy	-1		1	$\times10^{-12}$	24 hours average when locked to 1 PPS
	Short-term stability			0.02	$\times10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1 hour ref. to 25℃; 1s, using PN9000 equipment.
	Aging Tolerance Per Day	-0.2		+0.2	$\times10^{-9}$	V_{cc},T_A constant measurement referenced to frequency observed with T_A=25℃,V_{cc}=5.0V, in FREE RUN condition and after 30 days of operation.
	Aging Tolerance 1 Year	-0.01		+0.01	$\times10^{-6}$	
	Phase Noise (All conditions)		-118	-113	dBc/Hz	10Hz
			-138	-133		100Hz
			-148	-143		1KHz
			-150	-145		10KHz
			-150	-145		100KHz
			-150	-150		1MHz
	Connector	Pin2				
RF Output2	Parameters	Min.	Typ.	Max.	Unit.	Test Condition
	Nominal Frequency	30.72			MHz	
	Waveform	HCMOS				
	High-level Output voltage (V_{OH})	2.7			V	<5mA Load
	Low-level Output voltage (V_{OL})			0.4	V	<5mA Load
	Rise/Fall Time			8	ns	<5mA Load
	Duty Cycle	45	50	55	%	<5mA Load
	Accuracy	-1		+1	$\times10^{-12}$	24 hours average when locked to 1 PPS
	Short-term Stability			0.02	$\times10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1 hour ref. to 25℃; 1s, using PN9000 equipment.
	Aging Tolerance Per Day	-0.2		+0.2	$\times10^{-9}$	V_{cc},T_A constant measurement referenced to frequency observed with T_A=25℃,V_{cc}=5.0V, in FREE RUN condition and after 30 days of operation.
	Aging Tolerance 1 Year	-0.01		+0.01	$\times10^{-6}$	

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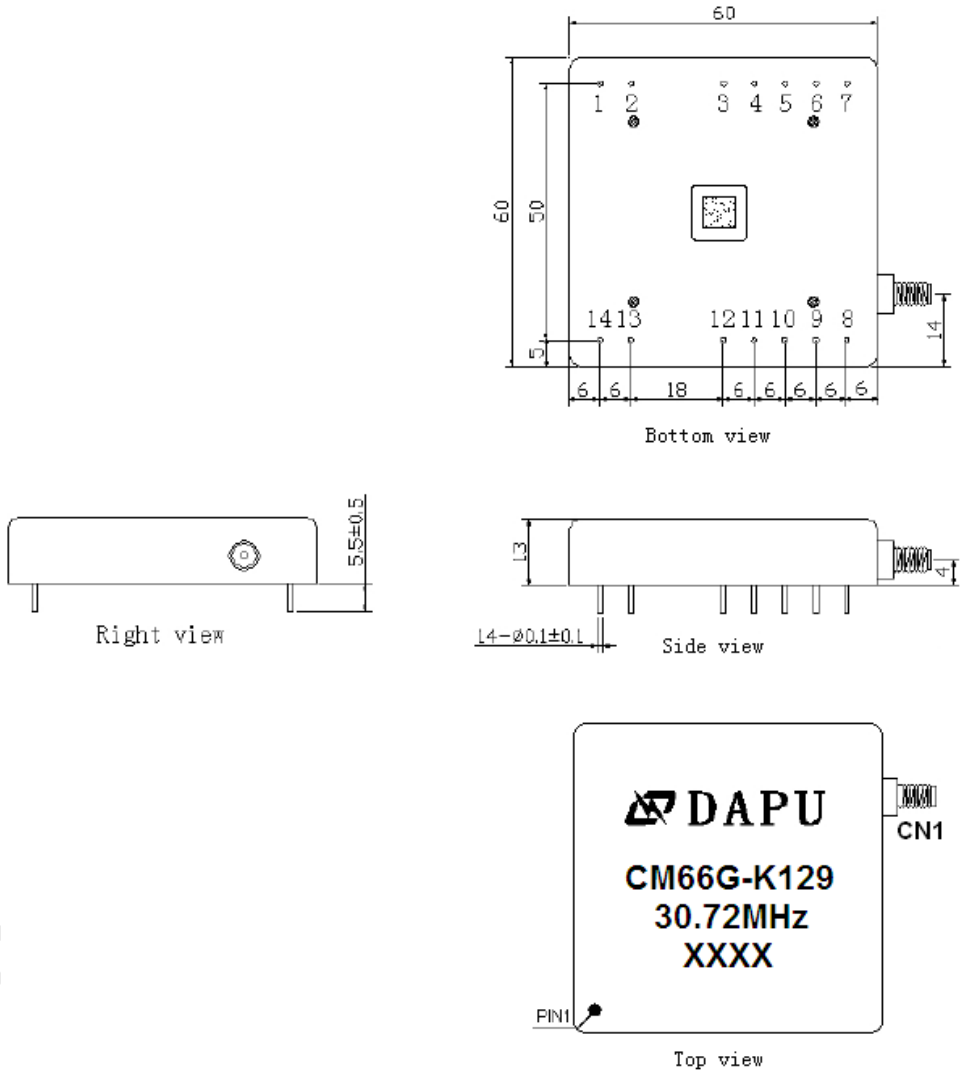
	Phase Noise (All conditions)		-75	-70	dBc/Hz	10Hz
			-105	-100		100Hz
			-130	-125		1KHz
			-145	-140		10KHz
			-145	-140		100KHz
			-150	-145		1MHz
	Connector	Pin 14				
Holdover Capability	Holdover Time	Min.	Typ.	Max.	Unit.	
	24 hours	-1.5		1.5	μs	ΔT=±2℃, 24 hours holdover after turn on 7days and GPS lock 3days. Temperature variable speed less than 1℃per minute
Supply Voltage	Parameters	Min.	Typ.	Max.	Unit.	
	Supply voltage	4.75	5.0	5.25	V	
	Current consumption			2000	mA	During Warm-up
				1000	mA	During steady state operation @25℃
	AC ripple			50	mVpk-pk	10Hz to 1MHz
	Connector	Pin 3				
Serial Interfaces	Parameters	Min.	Typ.	Max.	Unit.	
	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	9600-N-8-1				
	Connector	Pin6 and Pin7				
Environmental Conditions	Parameter	Conditions				
	Operating temperature	-20℃ to +75℃				
	Storage Temperature	-55℃ to +105℃				
	Storage humidity	30%~80%				
	ESD Level	Human Body Model,class2: 2000V to 4000V; ANSI/ESDA/JEDEC JS-001-2010.				
		Machine Model, class B: 200V to 400V; ANSI/ESDA/JEDEC JS-001-2010.				

	Moisture Sensitivity Level	Not humidity sensitive.
	Vibration	Test Condition: 0.75mm ;acceleration:10g;10Hz～500Hz, one cycle per 30 min, test 2 hour. (3 times for each 3 directions X ,Y , Z)， IEC 68-2-06 Test Fc.
	Shock	50g； 11ms； half sine wave (3 times for each 3 directions X ,Y, Z),IEC 68-2-27 Test Ea/Severity 50A.
Full Package Storage	Relative humidity (%)	20%～70%
	Temperature (℃)	-10~35℃

2. Mechanical Structure(mm)



Note1: Tolerance ±0.20mm without mark

Note2: The first two xx representative: week
After two xx representative: year

Note3: Referential Weight 82±10g

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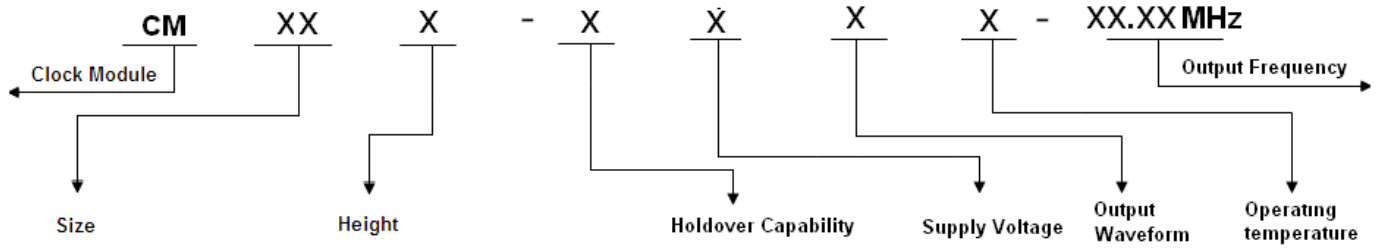
PIN DEFINITION			
PIN	**NAME**		**DESCRIPTION**
1	GPS_BCKP		GPS receiver backup battery supply, 1.4V to 3.6V.if not use, please connect to GND.
2	10MHz OUTPUT		10MHz frequency output
3	VCC		Power supply input, 4.75V to 5.25V
5	State OUTPUT		State output. Output high level when the CM is locked and stable, others low level.
6	RX INPUT		Asynchronous serial data input. 9600-N-8-1
7	TX OUTPUT		Asynchronous serial data output. 9600-N-8-1
8	State INPUT	H: Lock	The work state is set to normal operation when the state input is high
		L: Holdover	The work state is set to hold over when the state input is low
10	GPS 1PPS OUTPUT		1PPS from the internal GPS receiver
12	1PPS OUTPUT		The clock module 1PPS and GPS time information output.
14	30.72MHz OUTPUT		30.72MHz frequency output
4、9、11、13	GND		GND

3. Coding Rules



33	36×36 (mm)
55	50×50 (mm)
66	60×60 (mm)
65	65×65 (mm)
77	75×75 (mm)

A	19mm,single Freq,external GPS receiver
B	19mm,single Freq,internal GPS receiver
C	19mm,single Freq,internal dual-mode receiver
F	13mm,single Freq,external GPS receiver
G	13mm,single Freq,internal GPS receiver
H	13mm,dual-Freqs,internal GPS receiver
K	13mm,single Freq,internal dual-mode receiver
L	13mm,dual-Freqs,internal dual-mode receiver
P	13mm,for PTP,1588 applications

A	±1.5μs	0℃~60℃	24hours
B	±3.0μs	0℃~60℃	24hours
C	±8.0μs	0℃~60℃	24hours
D	±1.5μs	ΔT=±5℃	24hours
E	±3.0μs	ΔT=±5℃	24hours
F	±8.0μs	ΔT=±5℃	24hours
G	±1.5μs	ΔT=±5℃	8hours
H	±3.0μs	ΔT=±5℃	8hours
I	±8.0μs	ΔT=±5℃	8hours
K	±1.5μs	ΔT=±2℃	24hours
M	±3.0μs	ΔT=±2℃	24hours
N	±8.0μs	ΔT=±2℃	24hours
O	±1.5μs	ΔT=±2℃	8hours
P	±3.0μs	ΔT=±2℃	8hours
Q	±8.0μs	ΔT=±2℃	8hours
Z	±12 μs	ΔT=±5℃	12hours

1	5.0V

1	Sine Wave
2	HCMOS

2	-10℃~70℃
8	-40℃~85℃
9	-20℃~75℃

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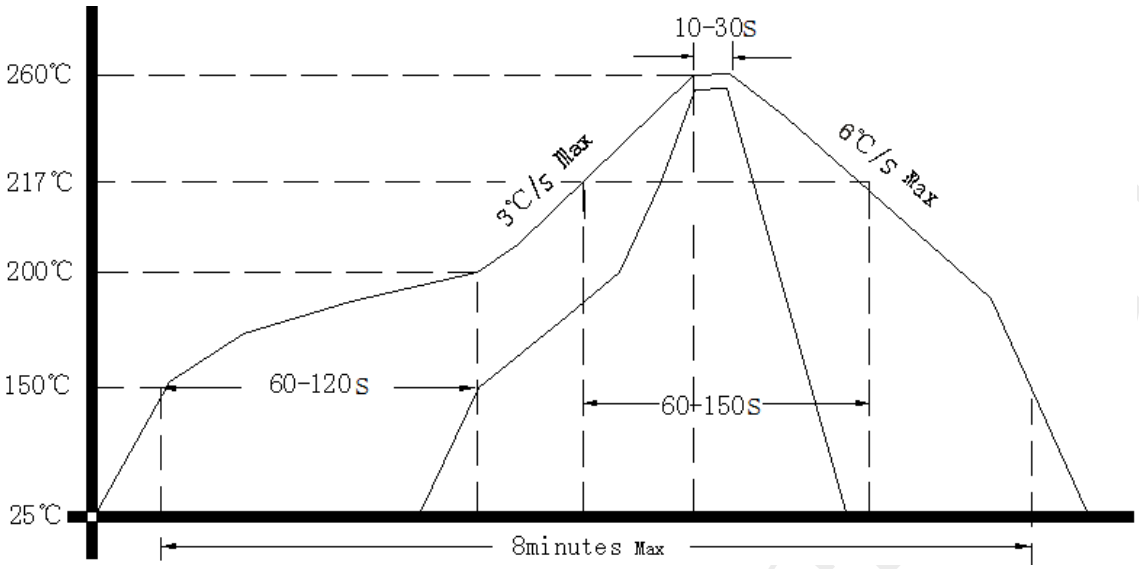
4. Reflow Soldering Curve (RoHS)



5. Package（mm）