Customer Code : _____

DATASHEET

DAPU P/N: **CM66K-G129-10.00MHz**

Customer P/N: **IQCM-112**

DAPU			Customer Approval
Drew	Audited	Approved	
Amway.wei	Carry.Wang	James.Liu	
Date: 2019.06.20			Stamp, please! Thanks!

Guangdong Dapu Telecom Technology Co.,Ltd

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

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Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	Amway	2019.06.20

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1. Electrical Parameters

Internal Receiver Characteristics	PARAMETERS					NOTES
	Type	Auto Position Lock				
	Number Of Channels	72				
	Frequency Band	GPS L1C/A,SBAS L1C/A,QZSS L1C/A, QZSS L1SAIF,GLONASS L1OF,BeiDouB1,Galileo E1B/C				
	Sensitivity	Tracking & Navigation -165dBm				
		Acquisition -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				
RF Output	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
	Rise/Fall Time			8	ns	< 5mA Load
	Duty Cycle	45	50	55	%	< 5mA Load
	Accuracy	-1		+1	$\times 10^{-12}$	24 hours average when locked to 1 PPS
	Short-term Stability			0.02	$\times 10^{-9}$	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	$\times 10^{-9}$	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	$\times 10^{-6}$	

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	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	Pin 2				
GPS 1PPS Output	Parameters	Min.	Typ.	Max.	Unit.	Test Condition
	Waveform	HCMOS				
	High-Level Output Voltage (V_{IH})	2.7			V	15pF
	Low-Level Output Voltage (V_{IL})			0.4	V	
	Pulse Width		100		ms	
	Connector	Pin 10				
State Output	Parameters	Min.	Typ.	Max.	Unit.	
	Lock	2.7			V	<5mA Load
	Holdover			0.4	V	<5mA Load
	Connector	Pin 5				
Holdover Capability	Holdover Time	Min.	Typ.	Max.	Unit.	
	8 hours	-1.5		+1.5	μs	ΔT=±5℃, 8 hours holdover after turn on 4 days and GPS lock 3 days, 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 12				
1 PPS Output Waveform Characteristics	Parameters	Min.	Typ.	Max.	Unit.	
	Waveform	HCMOS				
	High-Level Output Voltage(V_{OH})	2.7			V	15pF
	Low-level Output voltage (V_{OL})			0.4	V	

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	Pulse width		100		ms	
	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	
	Data format	NMEA-0183				
	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℃				

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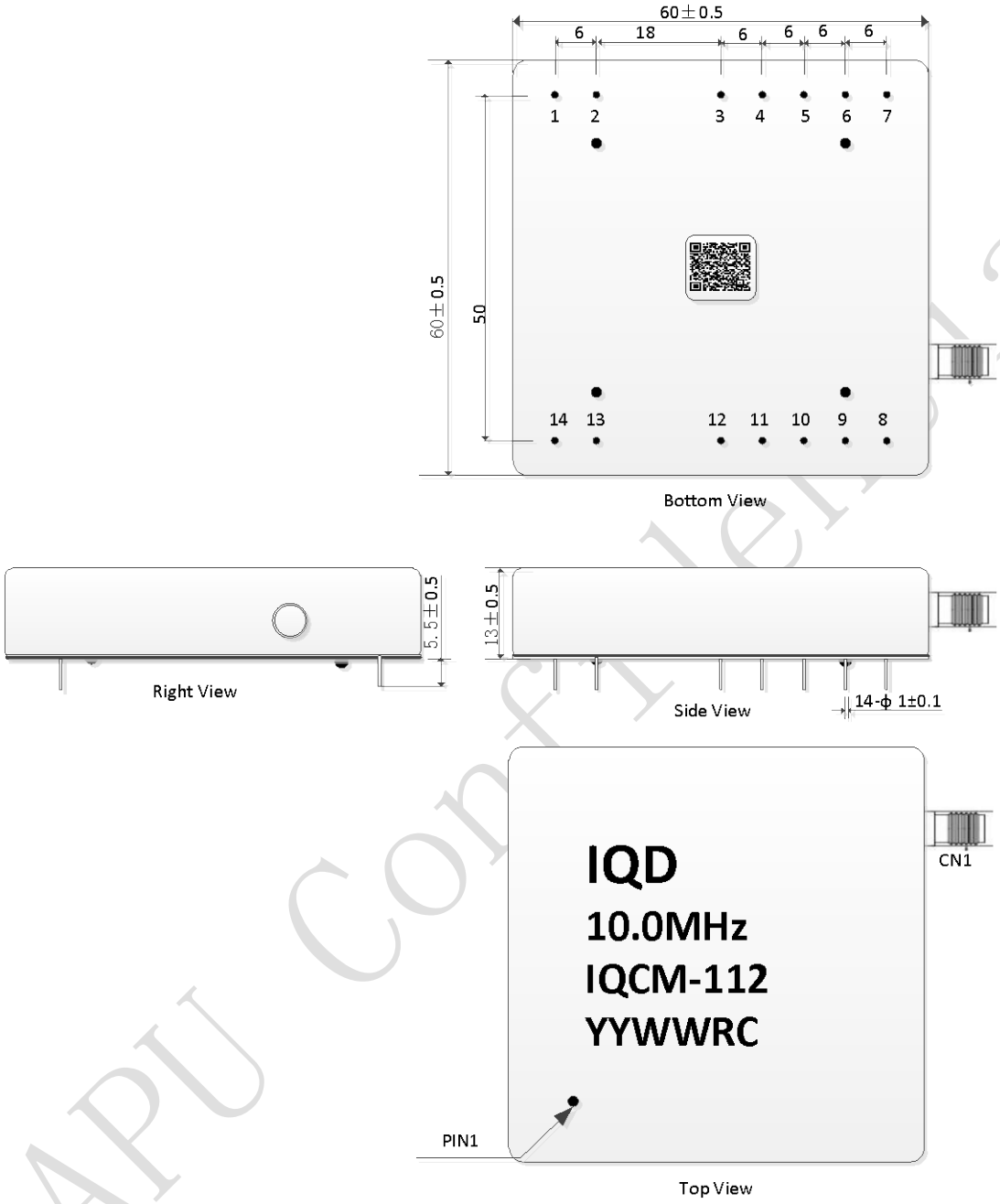
2. Mechanical Structure(mm)



Note1: Tolerance ± 0.20mm without mark

Note2: The first two YY representative: year
After two WW representative: week

Note3: Referential Weight 82±10g

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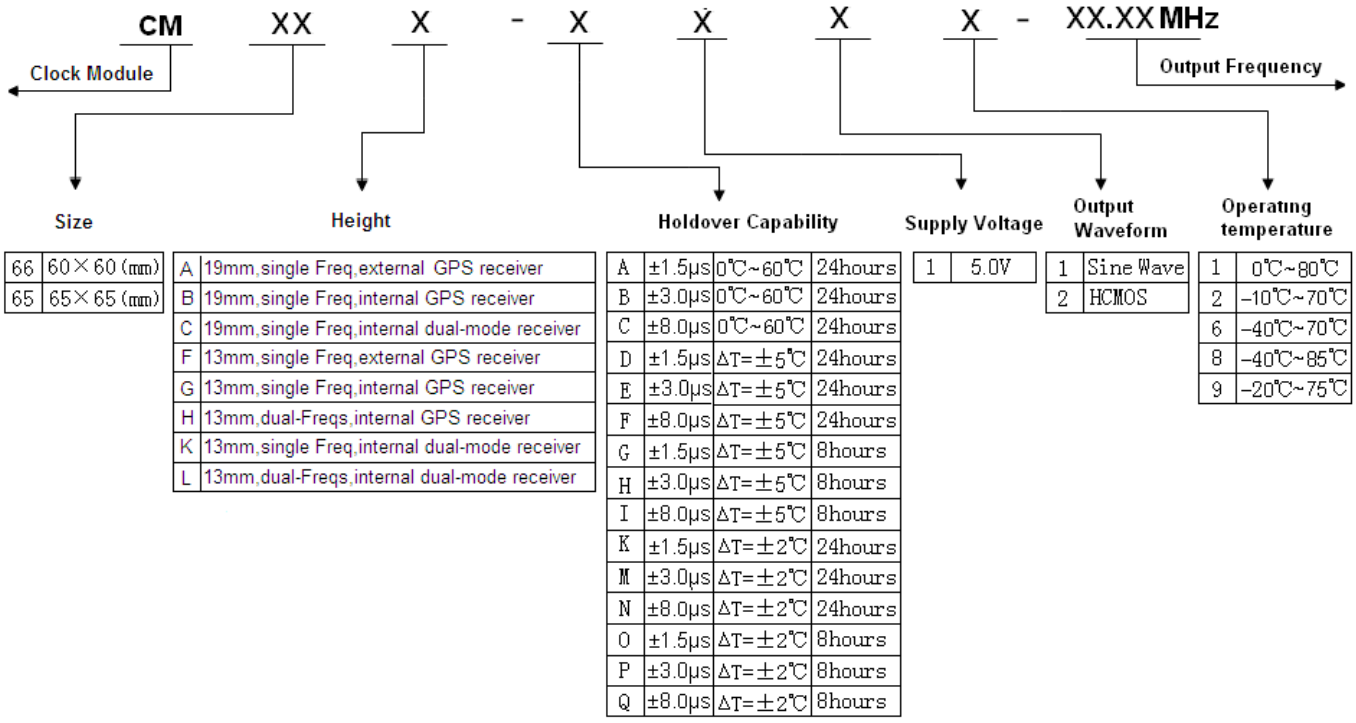
PIN DEFINITION			
PIN	**NAME**		**DESCRIPTION**
2	10MHz OUTPUT		10MHz OCXO frequency output .
3	1PPS OUTPUT		The clock module 1PPS output .
5	State OUTPUT		State output. Output high level when the CM is locked and stable, others low level.
6	RX INPUT		Asynchronous serial data input. 9600-N-8-1.
7	TX OUTPUT		Asynchronous serial data output. 9600-N-8-1.
8	State INPUT	H: Lock Enable	The work state is set to normal operation when the state input is high.
		L: Lock Disable	The module cannot be locked when the state input is low level.
10	1PPS OUTPUT		1PPS from the internal GPS/BD receiver.
12	VCC		Power supply input, 4.75V to 5.25V.
1、14	NC		Not connected.
4、9、11、13	GND		GND

3. Coding Rules



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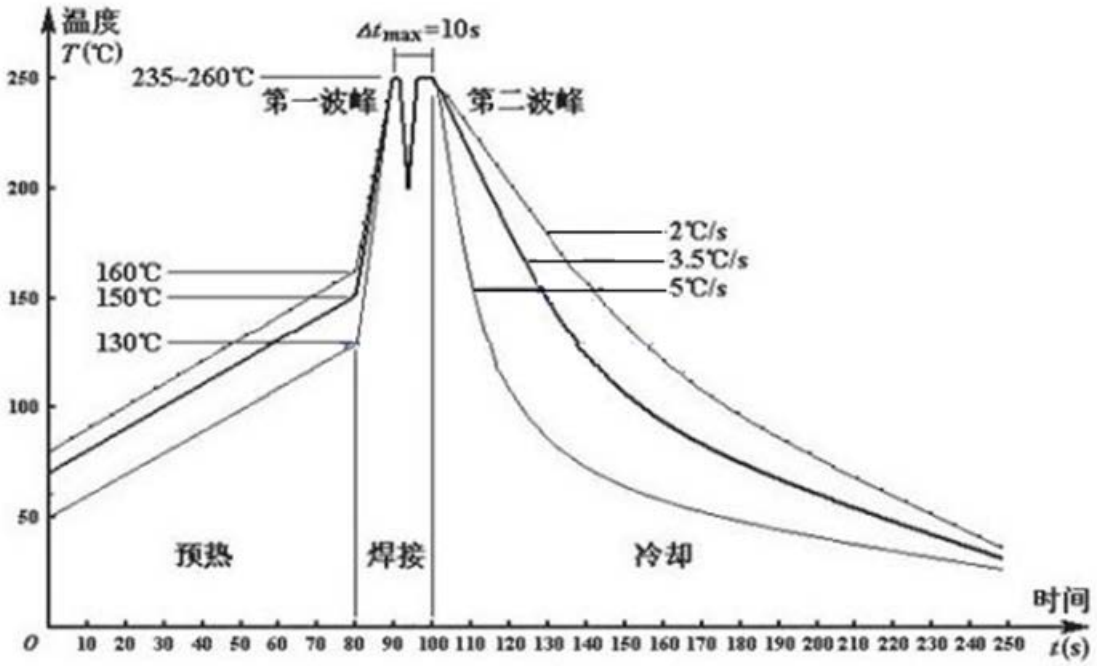
4. Wave Soldering Curve (RoHS)



5. Package（mm）