Customer Code : _____

DATASHEET

DAPU P/N: **CM55K-Z426-10.00MHz-A**

Customer P/N: _____

DAPU			Customer Approval
Drew	Audited	Approved	
Amway.wei	Steven.Sun	James.Liu	
Date: 2016.04.14			Stamp, please! Thanks!

Guangdong Dapu Telecom Technology Co.,Ltd

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

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

Bldg 16,.N.Ind.Zone,SSL Industry Park,
Dongguan City, Guangdong Province,
PRC China
TEL:0086-0769-88010888
FAX:0086-0769-81800098

Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	Amway	2016.04.14

Bldg 16,.N.Ind.Zone,SSL Industry Park,
Dongguan City, Guangdong Province,
PRC China
TEL:0086-0769-88010888
FAX:0086-0769-81800098

1. Electrical Parameters

Internal Receiver Characteristics	PARAMETERS					NOTES
	Type	Auto Position Lock				
	Number Of Channels	50				
	Frequency Band	L1 (1575.42 MHz)		B1(1561.098 MHz)		
	Cold starts	27s				
	Aided starts	3s				
	Tracking Capability	12 Satellites				
	Sensitivity	Tracking & Navigation -159dBm				
		Acquisition -144dBm				
	Antenna INPUT	MMCX				
	Connector	J2				
RF Output	Parameters	Min.	Typ.	Max.	Unit.	Test Condition
	Nominal Frequency	10.00			MHz	
	Waveform	Sine wave				50Ω
	Level	10		13	dBm	
	Harmonics Suppression			-30	dBc	
	Spurious Suppression			-60	dBc	
	Accuracy	-1		+1	$\times10^{-12}$	24 hours average when locked to 1 PPS
	Short-term Stability			0.05	$\times10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1 hour ref. to 25℃; 0.1s, using PN9000 equipment.
				0.005	$\times10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1 hour ref. to 25℃; 1s, using PN9000 equipment.
				0.01	$\times10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1 hour ref. to 25℃; 10s, 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}=12.0V, in FREE RUN condition and after 30 days of operation.
	Aging Tolerance 1 Year	-0.01		+0.01	$\times10^{-6}$	

Bldg 16,.N.Ind.Zone,SSL Industry Park,
Dongguan City, Guangdong Province,
PRC China
TEL:0086-0769-88010888
FAX:0086-0769-81800098

	Phase Noise (All conditions)		-90	-80	dBc/Hz	1Hz
			-118	-113		10Hz
			-138	-133		100Hz
			-148	-143		1KHz
			-151	-146		10KHz
			-153	-148		100KHz
			-153	-148		1MHz
	Connector	Pin 3				
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 1				
External Reference Input	Parameters	Min.	Typ.	Max.	Unit.	
	Waveform	HCMOS				
	High-Level Input Voltage (V_{IH})	2.7			V	<5mA Load
	Low-Level Input Voltage (V_{IL})			0.4	V	<5mA Load
	Pulse Width	10			μs	
	Connector	J11				
Holdover Capability	Holdover Time	Min.	Typ.	Max.	Unit.	
	4 hours	-8		+8	μs	ΔT=±5℃, 24 hours holdover after turn on 1days and GPS lock 1days. Temperature variable speed less than 1℃per minute
	24 hours	-44		+44	μs	ΔT=±5℃, 24 hours holdover after turn on 1days and GPS lock 1days. Temperature variable speed less than 1℃per minute
Supply Voltage	Parameters	Min.	Typ.	Max.	Unit.	
	Supply voltage	11.4	12.0	12.6	V	
	Current consumption			1200	mA	During Warm-up
				600	mA	During steady state operation @25℃

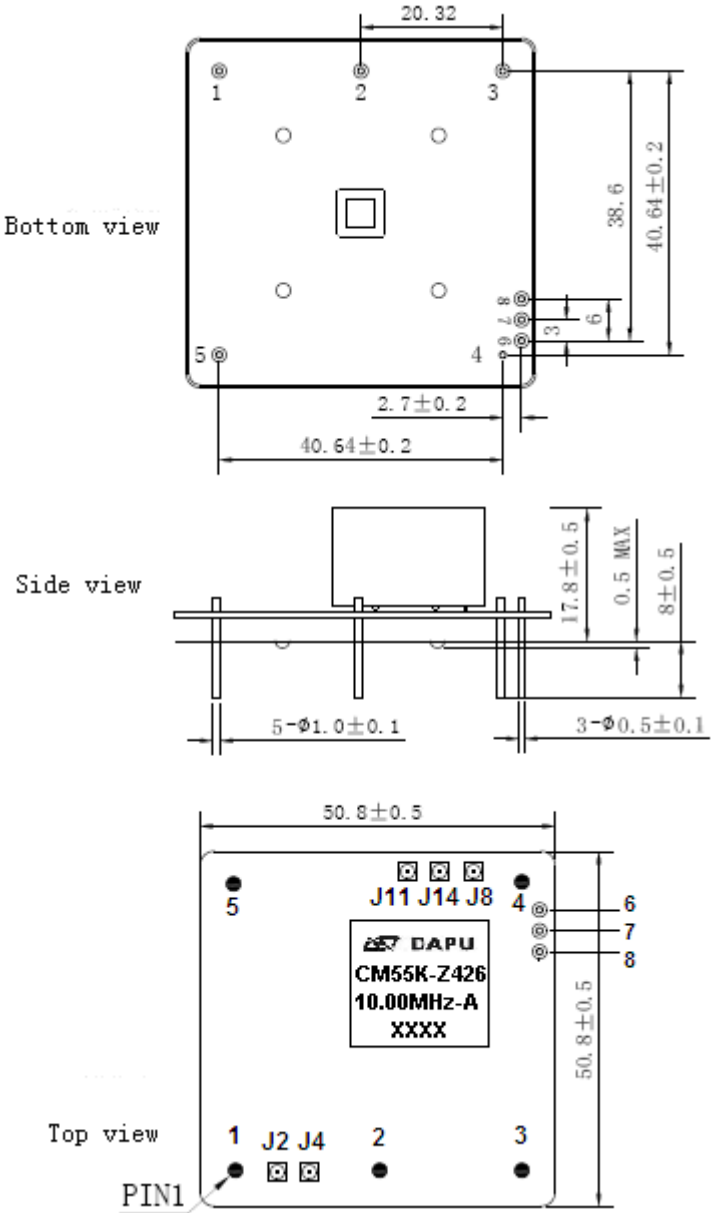
Bldg 16,.N.Ind.Zone,SSL Industry Park,
Dongguan City, Guangdong Province,
PRC China
TEL:0086-0769-88010888
FAX:0086-0769-81800098

	AC ripple			50	mVpk-pk	10Hz to 1MHz
	Connector	Pin 5				
1 PPS Output Waveform Characteristics	Parameters	Min.	Typ.	Max.	Unit.	
	Waveform	HCMOS				
	High-Level Output Voltage(V_{OH})	2.7			V	50Ω
	Low-level Output voltage (V_{OL})			0.4	V	
	Synchronization accuracy	-200		200	ns	
	Connector	J8				
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	Pin7 and Pin8				

Environmental Conditions	Parameter	Conditions
	Operating temperature	-30℃ to +70℃
	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℃

Bldg 16,.N.Ind.Zone,SSL Industry Park,
Dongguan City, Guangdong Province,
PRC China
TEL:0086-0769-88010888
FAX:0086-0769-81800098

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 72±10g

Bldg 16,.N.Ind.Zone,SSL Industry Park,
Dongguan City, Guangdong Province,
PRC China
TEL:0086-0769-88010888
FAX:0086-0769-81800098

PIN DEFINITION		
PIN	**NAME**	**DESCRIPTION**
1	1PPS OUTPUT	The clock module 1PPS output .
2	GND	GND
3	10MHz OUTPUT	10MHz OCXO frequency output .
4	GND	Signal GND
5	VCC	Power supply input, 11.4V to 12.6V
6	BITE	NC
7	TX OUTPUT	Asynchronous serial data output. 9600-N-8-1.
8	RX INPUT	Asynchronous serial data input. 9600-N-8-1.
J2	Antenna Input	RF antenna input +5V
J4	External Reference Input	External reference 5/10MHz input
J8	1 PPS Output	1PPS output
J11	1PPS Input	External reference 1PPS input
J14	NC	NC

Output message protocol：

BCD：

sync char 1 || sync char 2|| class&ID || position type || satellite status || satellite number || BD Sat num || GPS Sat num || ocxo status || reserved || end byte

sync char 1 || sync char 2|| class&ID || year-2000 || month || day || hour || minute || second || leap second|| end byte

class&ID == 0x00

sync char 1，0x47

sync char 2，0x42

class&ID， 4bits&4bits， e.g.：0x00， 0 class 0 ID;

position type：

0 BD&GPS，

1 BD，

2 GPS

satellite status：

0 Not locate，

1 Locate

satellite number

BD Sat num

GPS Sat num

ocxo status：

0 Power on；

Bldg 16,.N.Ind.Zone,SSL Industry Park,
Dongguan City, Guangdong Province,
PRC China
TEL:0086-0769-88010888
FAX:0086-0769-81800098

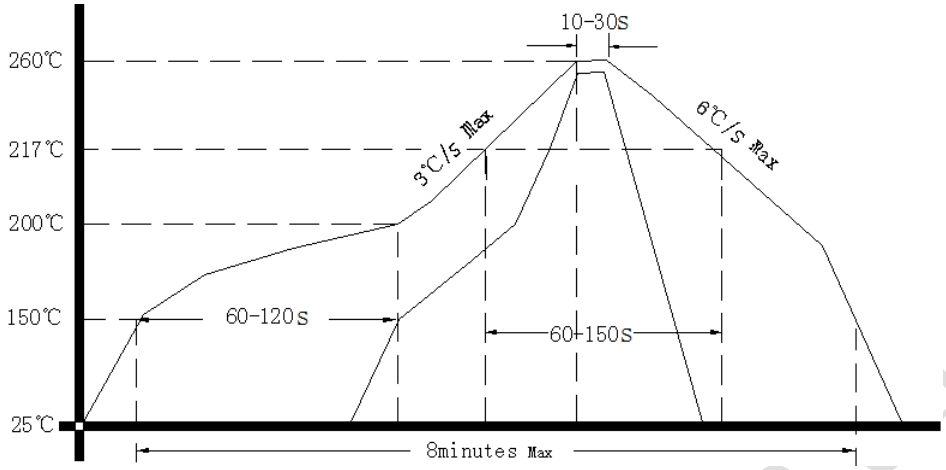
1 Warm up；
2 Adjustment of status；
3 Free run；
4 Lock；
5 Holdover；
6 ocxo Initialize status

reserved
end byte，0x45

class&ID == 0x01
sync char 1，0x47
sync char 2，0x42
class&ID， 4bits&4bits，e.g.：0x01， 0 class 1ID
year-2000 -2000
month
day
hour
minute
second
leap second
end byte，0x45

Bldg 16,.N.Ind.Zone,SSL Industry Park,
Dongguan City, Guangdong Province,
PRC China
TEL:0086-0769-88010888
FAX:0086-0769-81800098

3. Reflow Soldering Curve (RoHS)



4. Package（mm）