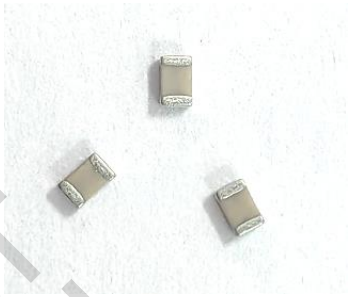
2.0X1.2X0.65 (mm) WiFi/Bluetooth Ceramic Chip Antenna (YF2012C2) Engineering Specification

1. Product Number

YF	2012	C2	P	2G45
1	2	3	4	5



(1)Product Type	Chip Antenna
(2)Size Code	2.0x1.2x0.65mm
(3)Type Code	C2
(4)Packing	Paper &Reel
(5)Frequency	2.4GHz

2. Features

*Stable and reliable in performances
*Low temperature coefficient of frequency
*Low profile, compact size
*RoHS compliance
*SMT processes compatible

3. Applications

*Bluetooth earphone systems
*Hand-held devices when WiFi /Bluetooth functions are needed, e.g., Smart phone.
*IEEE802.11 b/g/n
*ZigBee
*Wireless PCMCIA cards or USB dongle

4. Description

Yingfeng chip antenna series are specially designed for WiFi/Bluetooth applications. Based on yingfeng proprietary design and processes, this chip antenna has excellent stability and sensitivity to consistently provide high signal reception efficiency.

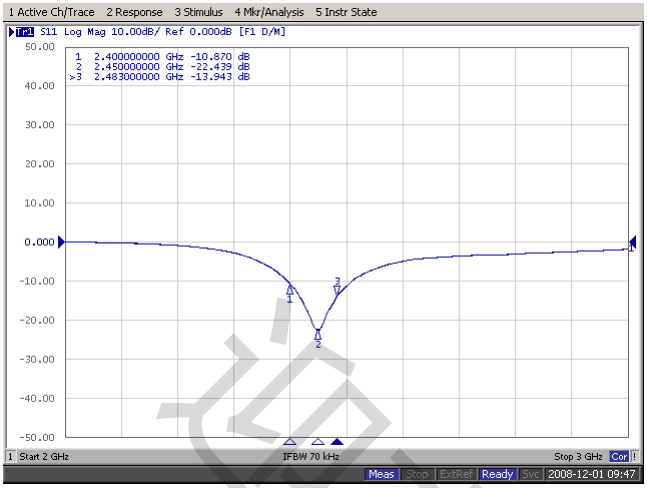
5. Electrical Specifications (80 x 40 mm^2 ground plane)

5-1. Electrical Table

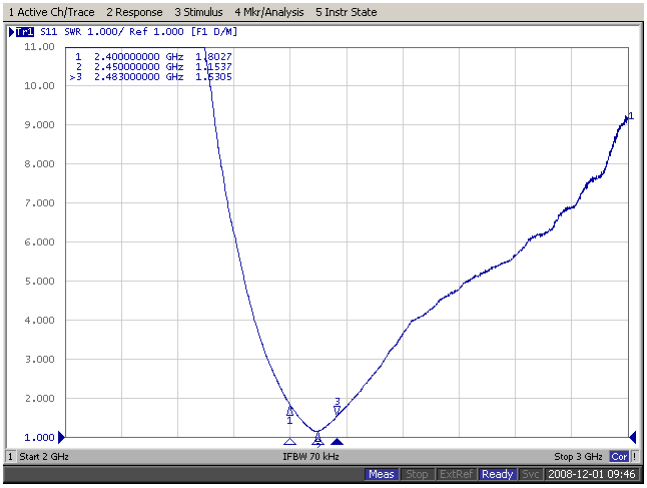
Characteristics		Specifications	Unit
Outline Dimensions		2.0x1.2x0.65	mm
Working Frequency		2400~2500	MHz
VSWR		2 Max.	
Impedance		50	Ω
Polarization		Linear Polarization	
Gain	Peak	2.5 (typical)	dBi
	Efficiency	75 (typical)	%

5-2. Return Loss & VSWR

Return Loss (S_{11})

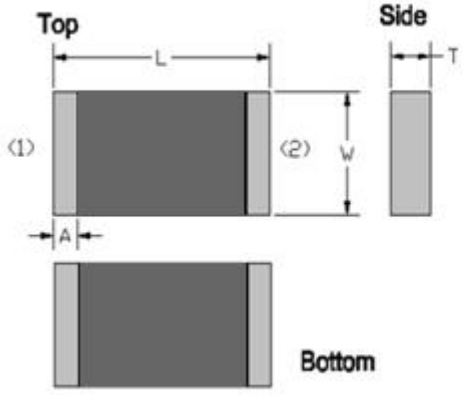


VSWR(S_{11})



6. Antenna Dimensions & Test Board (unit: mm)

a. Antenna Dimensions



Dimension (mm)	
L	2.05+-0.15
W	1.20+-0.15
T	0.65+-0.10
A	0.20+-0.10

No.	Terminal Name
1	Feeding/GNG
2	GND/Feeding

P.S : Top & down and left & right side are symmetrical, No direction

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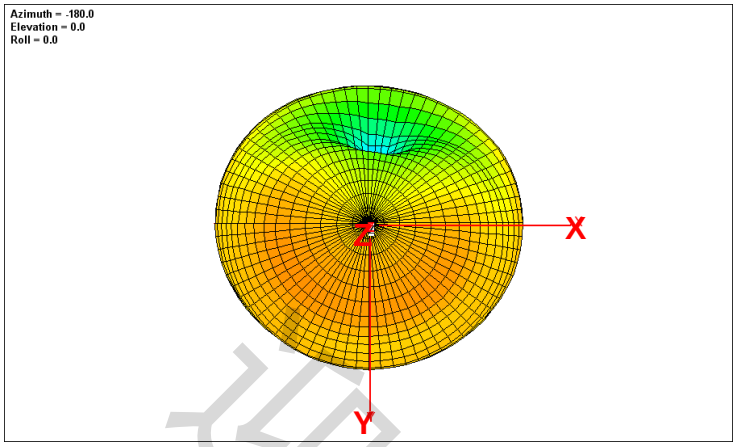
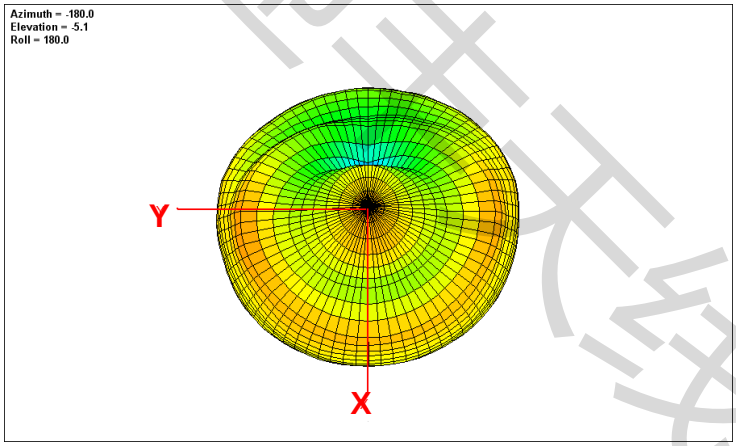
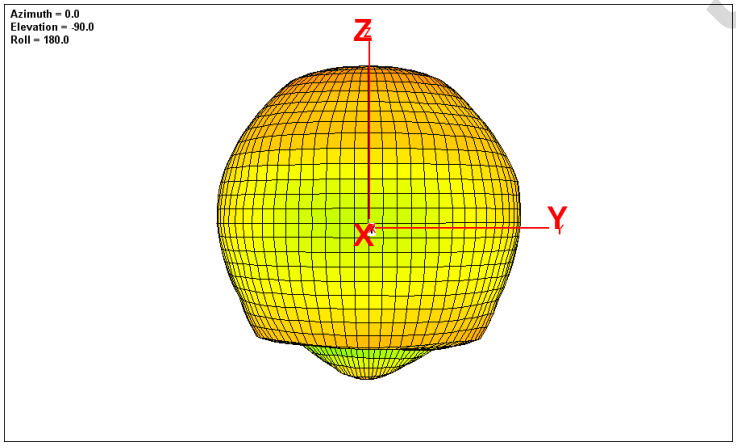
SHEN ZHEN YINGFENG ANTENNA TECHNOLOGYCO.,LTD

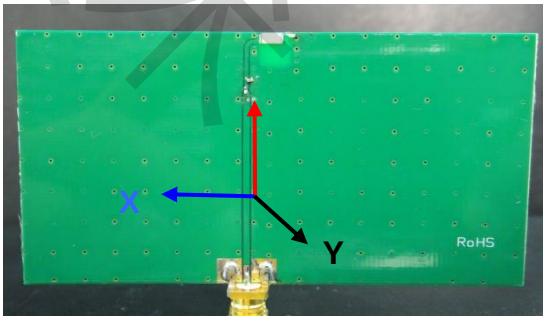
7. Radiation Pattern (80 x 40 mm^2 ground plane)

7-1. 3D Gain Pattern @ 2442 MHz









7-2. 3D Efficiency Table

Frequency(MHz)	2400	2410	2420	2430	2442	2450	2460	2470	2480	2490	2500
Efficiency (dB)	-1.4	-1.0	-0.9	-0.7	-0.7	-0.8	-0.9	-1.1	-1.2	-1.3	-1.4
Efficiency (%)	72.8	73.7	74.3	74.4	75.5	75.0	74.0	73.6	73.1	72.6	71.5
Gain (dBi)	2.1	2.2	2.3	2.4	2.5	2.5	2.4	1.8	1.7	1.6	1.4

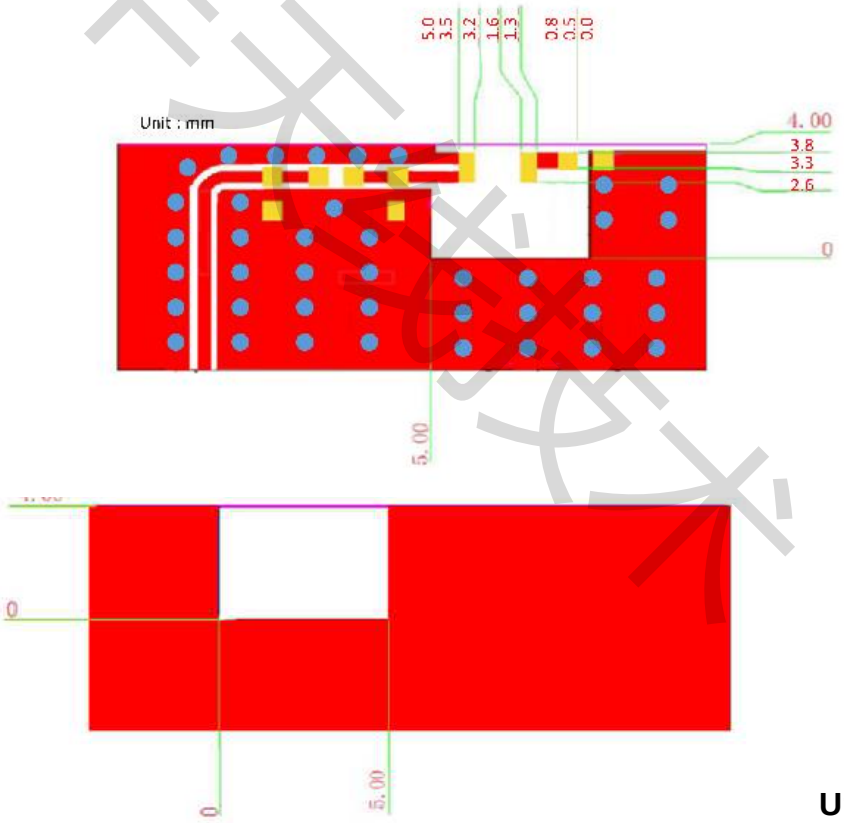
8. Layout Guide

a. Solder Land Pattern:

Land pattern for soldering (gray marking areas) is as shown below. Depending on Customer's requirement, matching circuit as shown below is also recommended.

2). PCB Top View :

Type1 :

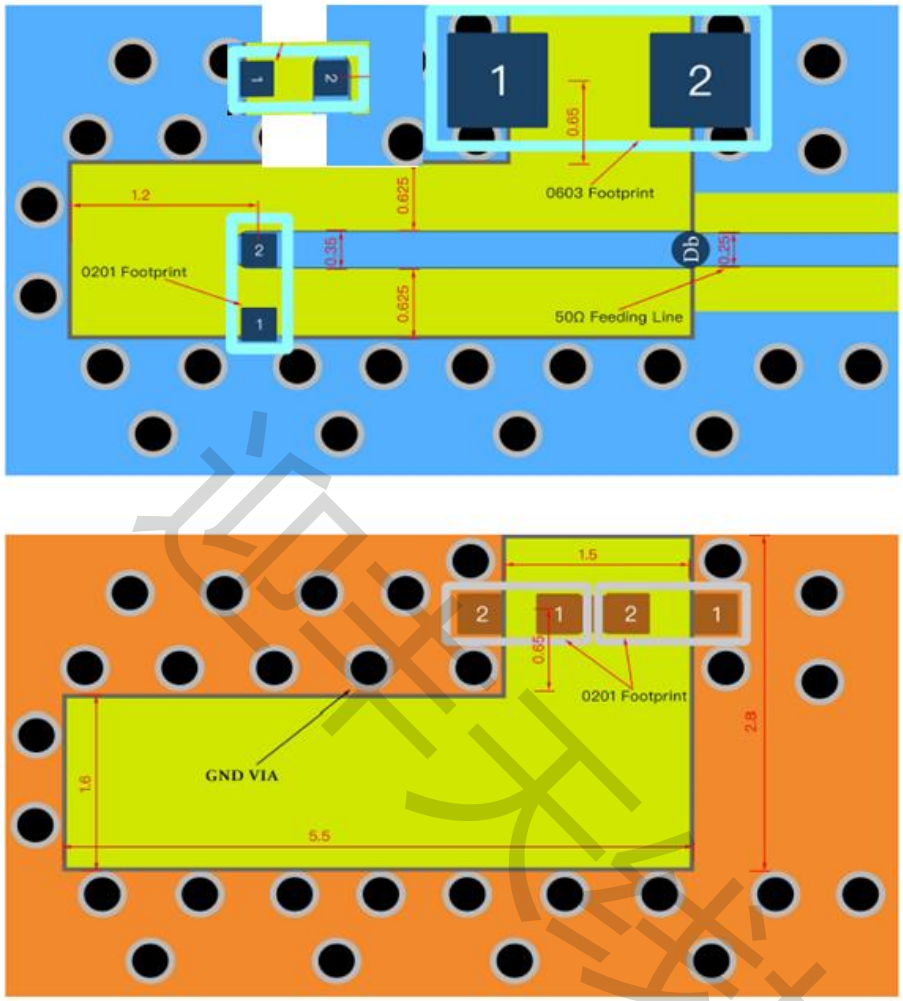


Top View

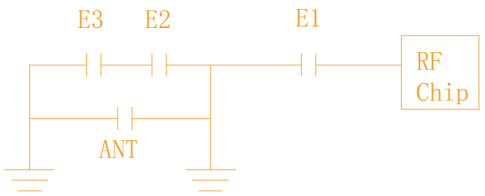
Bottom View

Unit : mm

b. Test Board with Antenna



原理图



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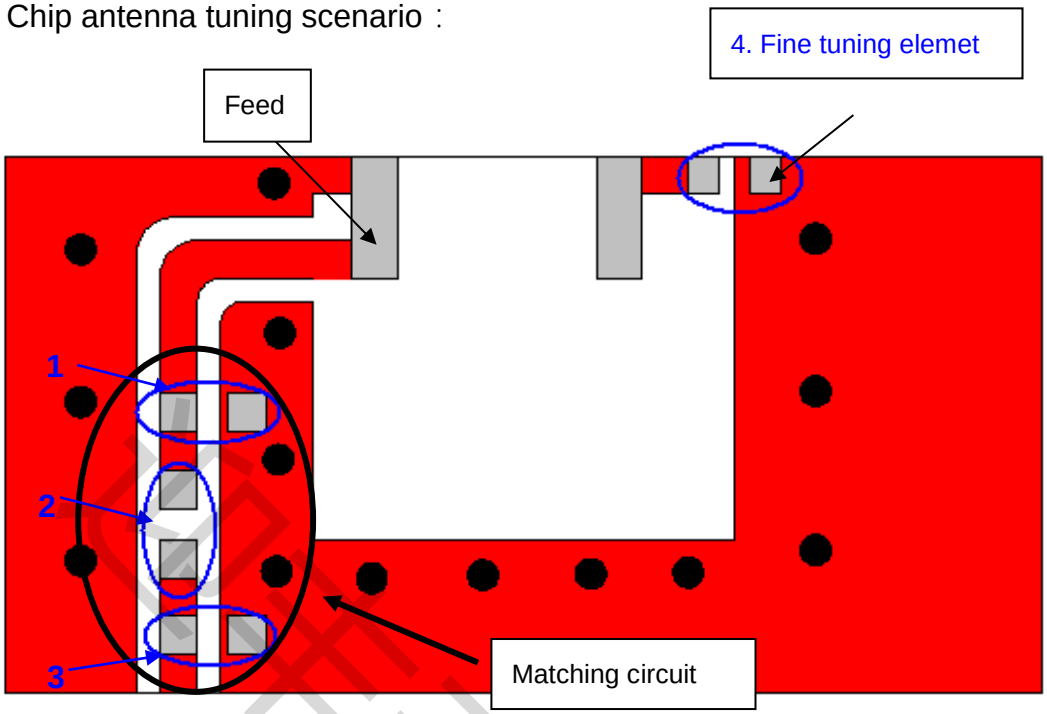
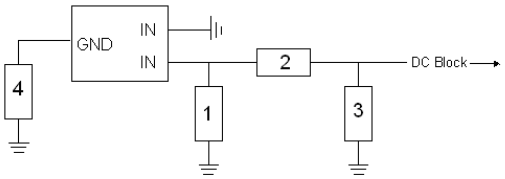
9. Frequency tuning

a. Chip antenna tuning scenario：



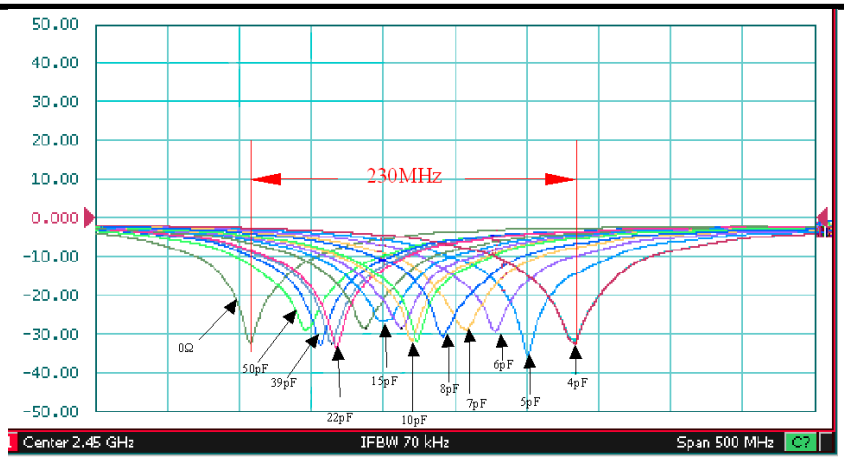
b. Matching circuit：(Center frequency is about 2442 MHz @ 80 x 40 mm^2 ground plane)



System Matching Circuit Component			
Location	Description	Vendor	Tolerance
1	1.2 pF*	Murata (0402)	±0.1 pF
2	10PF*	Murata(0402)	±0.5 PF
3	N/A*	-	-
Fine tuning element 4	10 pF*	Murata (0402)	±0.1 pF

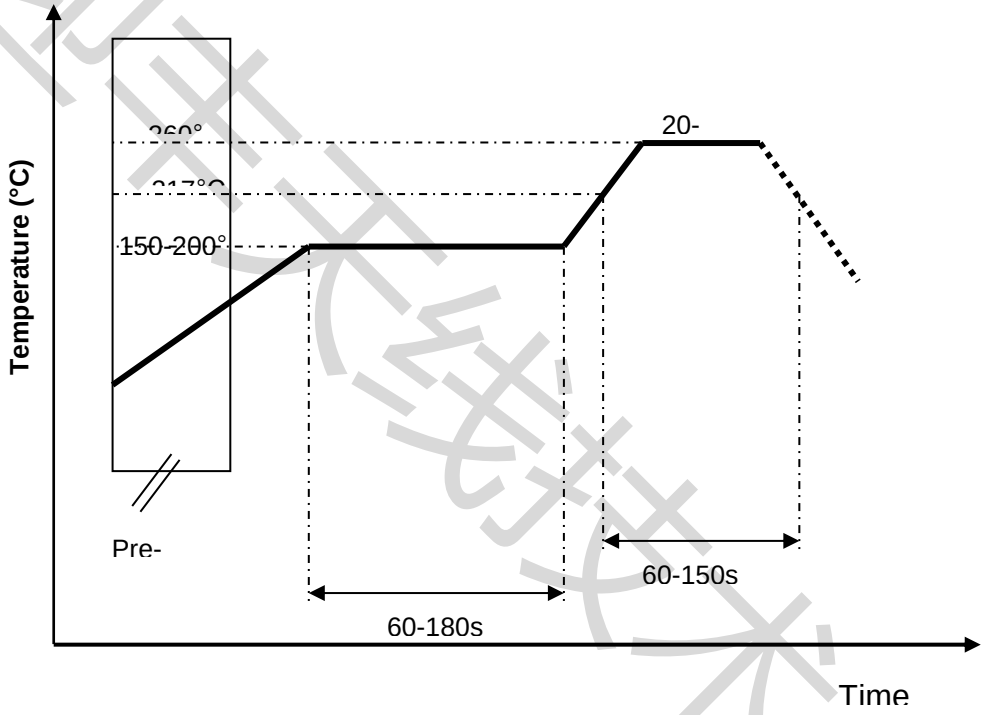
*Typical reference values which may need to be changed when circuit boards or part vendors are different.

c. Fine tuning element vs. Center frequency



10. Soldering Conditions

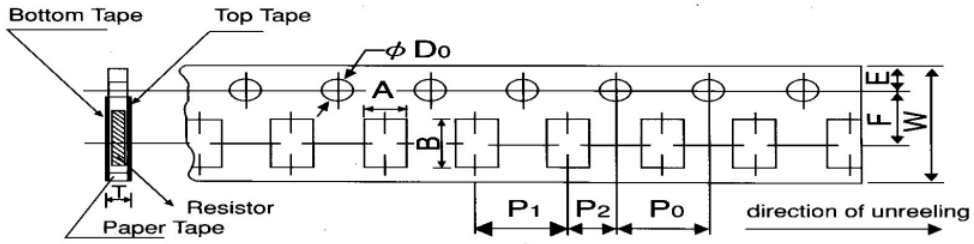
a. Typical Soldering Profile for Lead-free Process



11. Packing

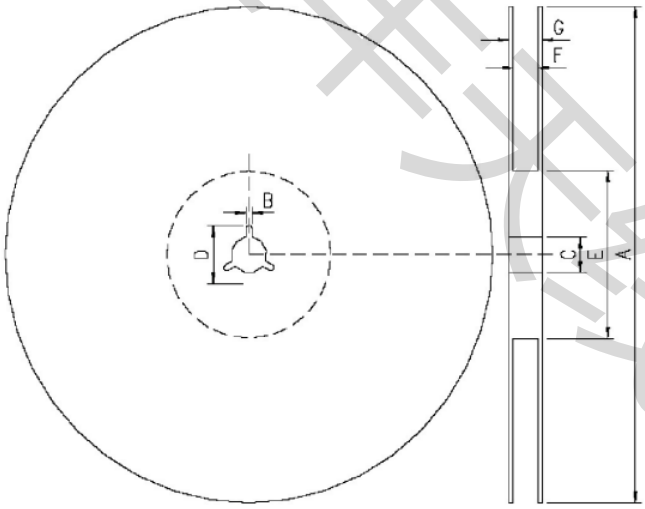
(1) Quantity/Reel: 4000 pcs/Reel

(2) Plastic tape:



Packing	Style	A	B	W	F	E	P_1	P_2	P_0	D_0	T
Paper	2012	1.6±0.15	2.4±0.2	8.0±0.2	3.5±0.05	1.75±0.1	4.0±0.1	2.0±0.05	4.0±0.1	ψ1.5 +0.1 -0	**0.84±0.1**

(3) Taping reel dimensions



A	178.0±2.0
B	2.0±0.5
C	13.0±0.5
D	21.0±0.8
E	62.0±1.5
F	9.0±0.5
G	13.0±1.0

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