

Antenna

YG0035AA Datasheet

Antenna Services

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About the Document

Revision History

Version	Date	Author	Note
1.0	2020-10-26	Kenny YIN	Initial
1.1	2021-01-19	Kenny YIN	Updated the antenna image in Chapter 2.
1.2	2021-01-27	Kenny YIN	Added IP rating description.
1.3	2021-07-20	Aria CHU	<ol style="list-style-type: none">1. Updated working temperature (Chapter 3).2. Added LNA data (Chapter 4.6).
1.4	2021-10-15	Aria CHU	Updated the data (Chapter 3).
1.5	2021-12-06	Aria CHU	Updated the product description in Chapter 1.
1.6	2022-05-06	Xiaodong YANG	Updated the data (Chapter 2, 3, 4 and 5.1).

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1 Product Description

This Quectel GNSS antenna adopts a diversity of forms to guarantee the most suitable polarization type. Quectel's positioning products support single-band or multi-band operation modes to meet various high-precision positioning requirements of customers' products. Quectel also provides both passive and active antennas to satisfy the customer demand for high gain. Such antenna supports different installation or connection methods such as pin mount, surface mount, magnetic mount, internal cable, and external SMA. Customized connector type and cable length are provided according to requirements.

2 Product Features

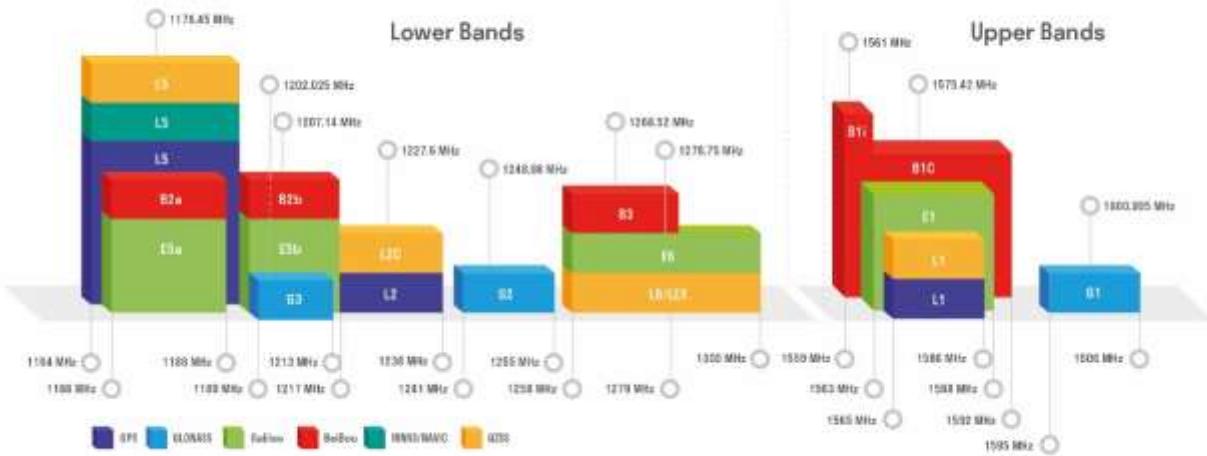
- Active GPS L1/BD B1I Antenna
- High efficiency
- Excellent performance



3 GNSS Frequency Band Checklist

GNSS Frequency Bands (MHz)					
	L1	L2	L5		
GPS	Centre 1575.42 (1565–1586)	Centre 1227.6 (1217–1238)	Centre 1176.45 (1164–1189)		
	●				
GLONASS	G1/L1OC/L1OF Centre 1601 (1595–1606)	G2/L2OC/L2OF Centre 1248.06 (1241–1255)	G3/L3OC Centre 1202.025 (1189–1213)		
GALILEO	E1 Centre 1575.42 (1563–1588)	E5a Centre 1176.45 (1166–1187)	E5b Centre 1207.14 (1197–1218)	E6 Centre 1278.75 (1258–1300)	
	●				
BEIDOU	B1I Centre 1561.098 (1559–1564)	B1C (BeiDou-3) Centre 1575.42 (1559–1592)	B2a/B2I Centre 1176.45 (1166–1187)	B2b Centre 1207.14 (1197–1217)	B3 Centre 1268.52 (1258–1279)
	●	●			
QZSS	L1 Centre 1575.42 (1573–1578)	L2C Centre 1227.6 (1226–1229)	L5 Centre 1176.45 (1166–1187)	L6 Centre 1278.75 (1257–1300)	
	●				
IRNSS	L5 Centre 1176.45 (1164–1189)				

GNSS Bands and Constellations



4 Product Specifications

Passive Electrical Specifications

Frequency Range	B1I: 1561 MHz / L1: 1575 MHz
Input Impedance	50 Ω
VSWR	≤ 2.0
Gain	≤ 1.5 dBi
Polarization Type	RHCP

Low Noise Amplifier Electrical Specifications

Frequency Range	1568 ±10 MHz
LNA Gain	28 ±3 dB
Noise Figure	≤ 2.0
Output VSWR	≤ 2.0
Voltage Range	1.8–3.6 V
Working Current	9 ±3 mA @ 3.3 V

Mechanical Specifications

Antenna Size	50.3 mm × 38.4 mm × 17.1 mm
Cable Type & Length	RG 174 Black & 3000mm
Casing	ABS
Connector Type	SMA Male (Center Pin)
Working Temperature	-40 °C to +85 °C
Radome Color	Black
Mounting Type	Magnet
IP Rating	IP64

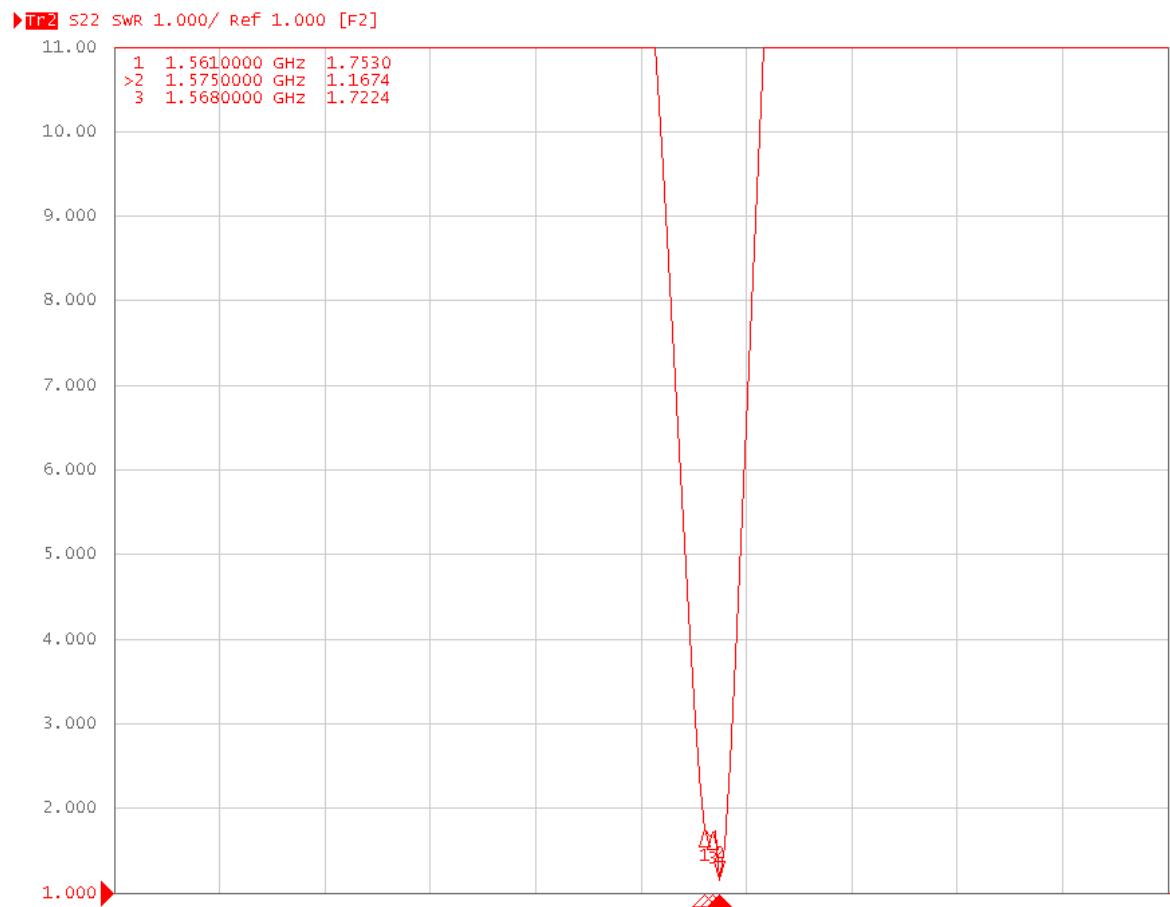
5 Overall Performance

5.1. Test Environment

- KEYSIGHT ENA Network Analyzer E5063A 100 kHz – 8.5 GHz
- RayZone®2800 Chamber 5G (FR1) SISO/MIMO, 600 MHz – 8.5 GHz



5.2. VSWR



Frequency (MHz)	1561	1575
VSWR	1.56	1.16

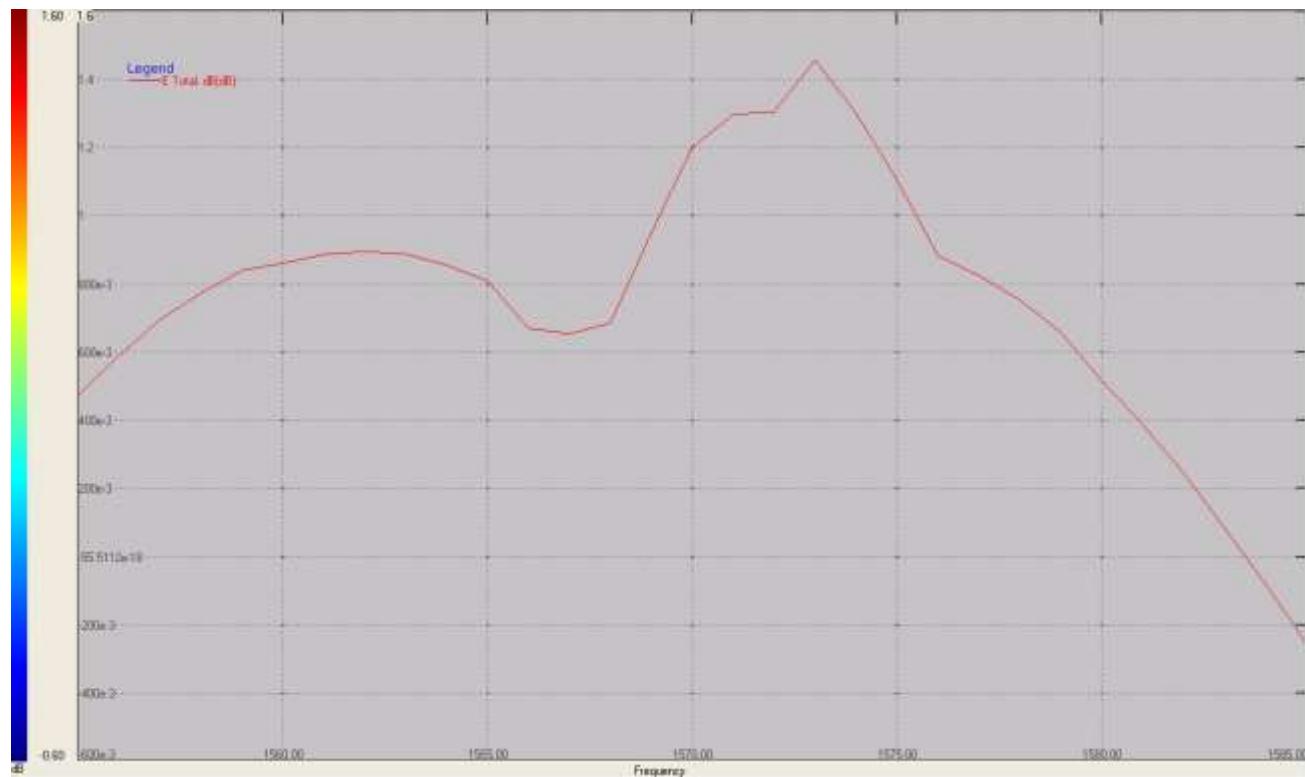
5.3. Efficiency



Frequency (MHz)	1557	1558	1559	1560	1561	1562	1563	1564	1565
Efficiency (%)	41%	43%	45%	47%	50%	51%	52%	53%	54%

Frequency (MHz)	1571	1572	1573	1574	1575	1576	1577	1578	1579
Efficiency (%)	58%	58%	58%	58%	57%	57%	56%	54%	53%

5.4. Gain

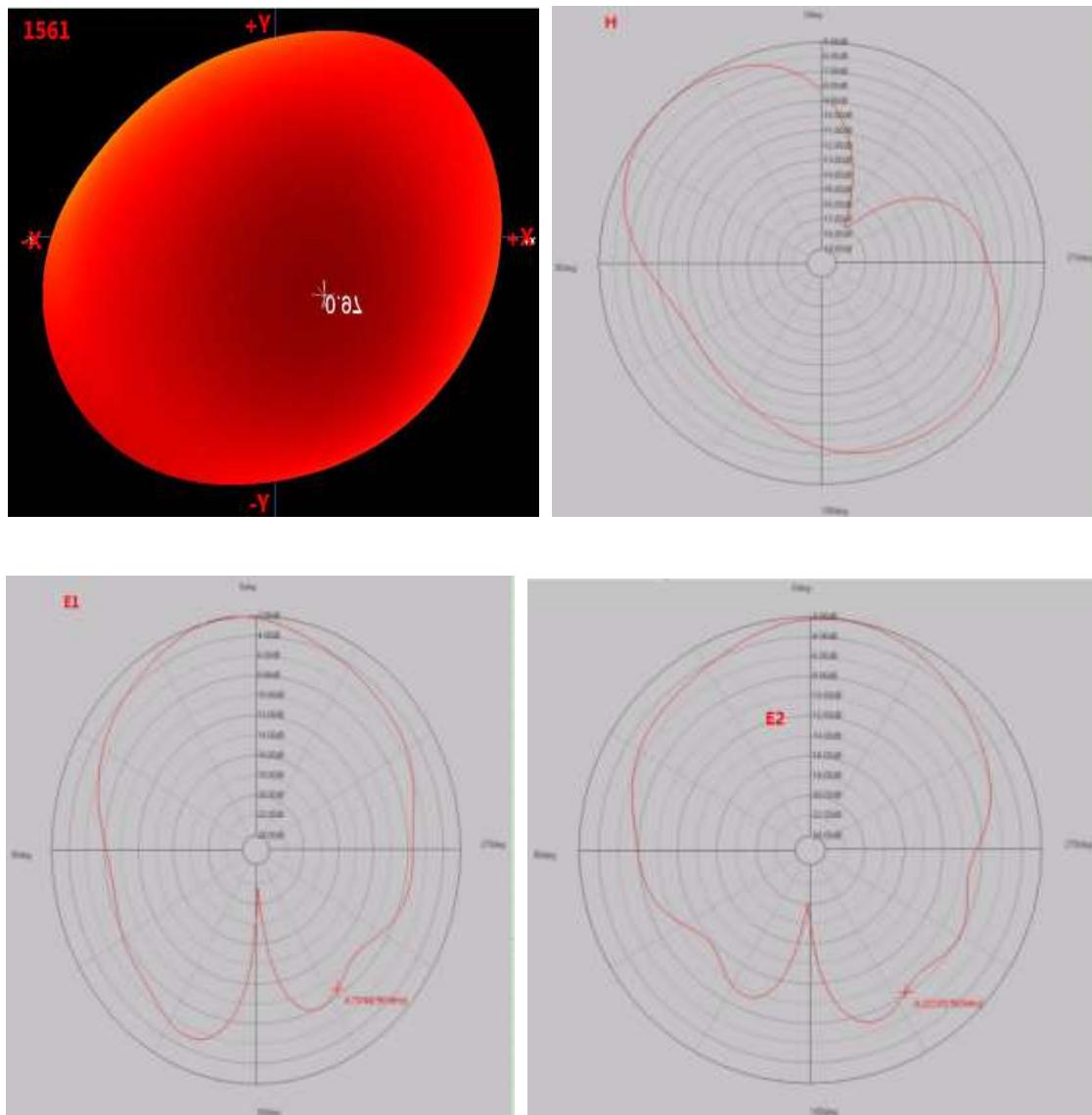


Frequency (MHz)	1557	1558	1559	1560	1561	1562	1563	1564	1565
Gain (dBi)	0.70	0.83	0.85	0.86	0.88	0.89	0.88	0.85	0.80

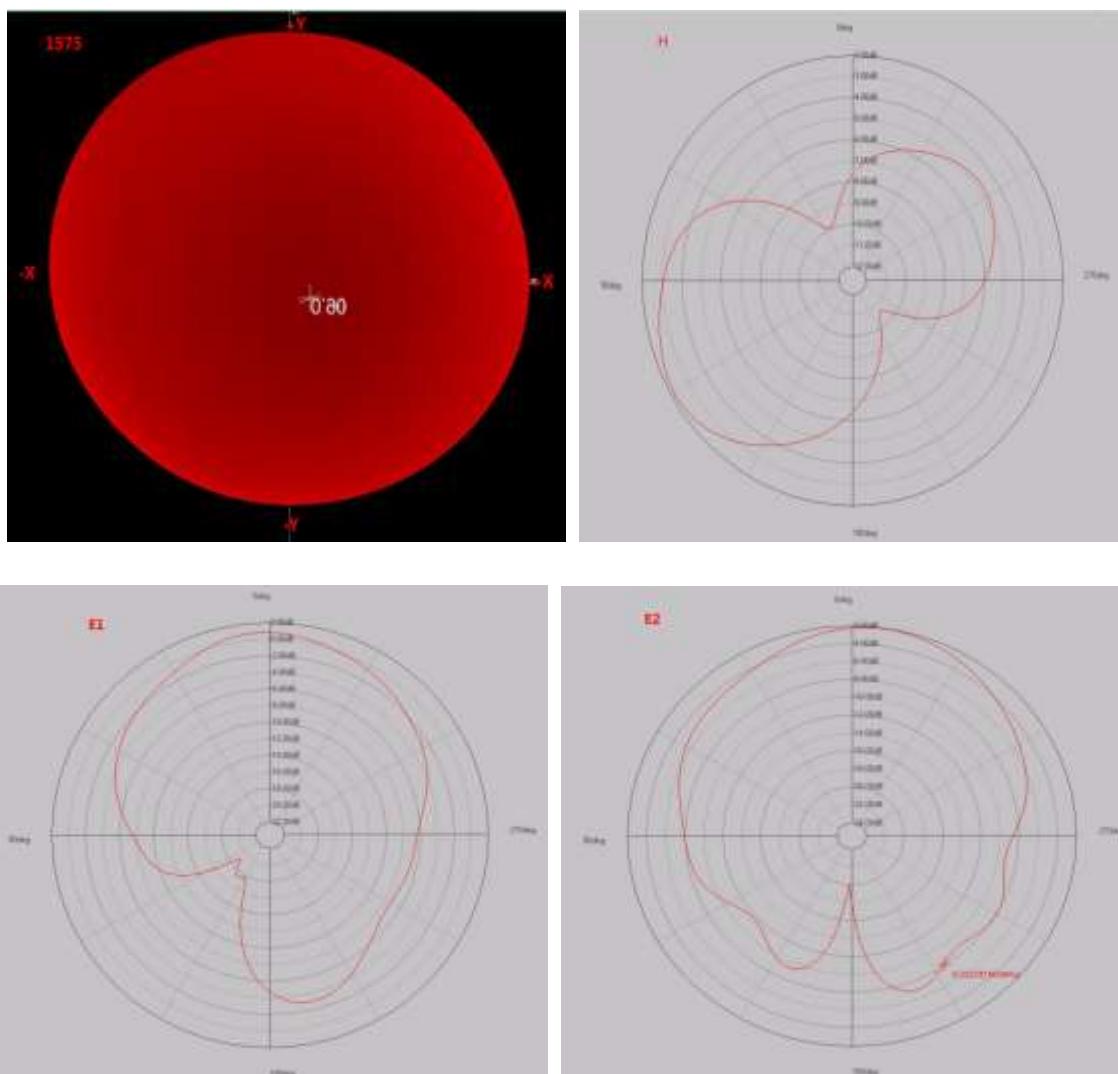
Frequency (MHz)	1571	1572	1573	1574	1575	1576	1577	1578	1579
Gain (dBi)	1.2	1.3	1.4	1.3	1.2	1.1	0.8	0.8	0.7

5.5. Radiation Pattern

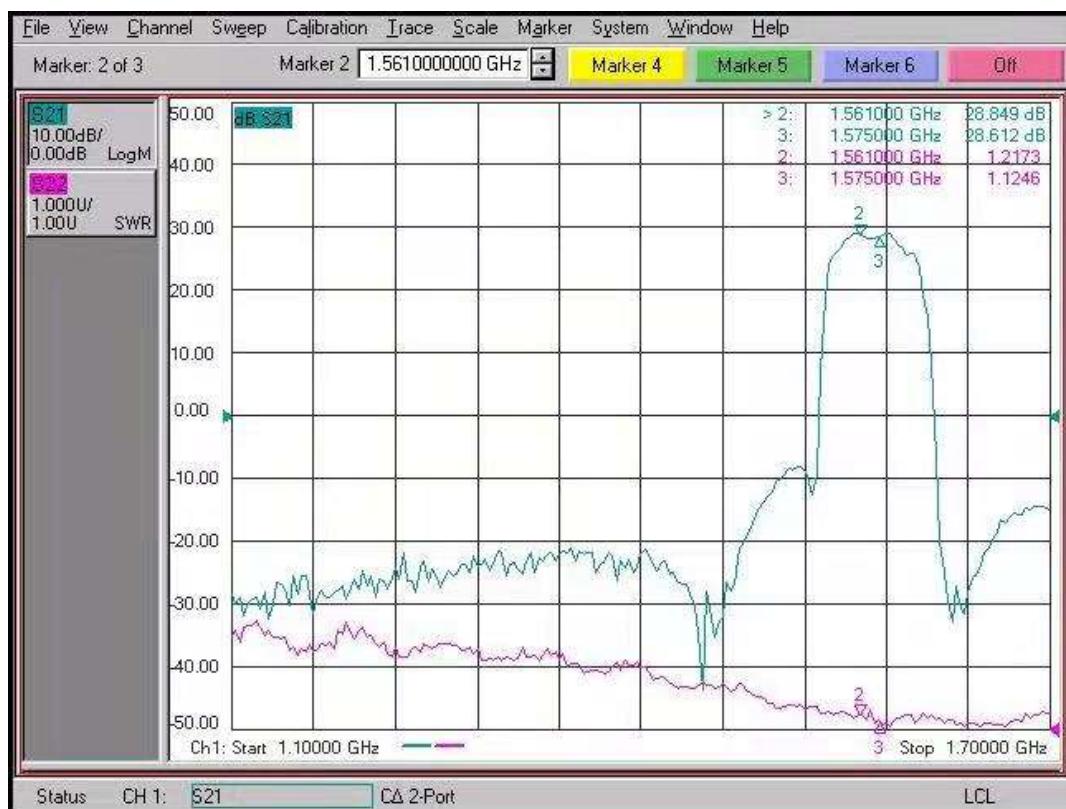
5.5.1. 1561 MHz



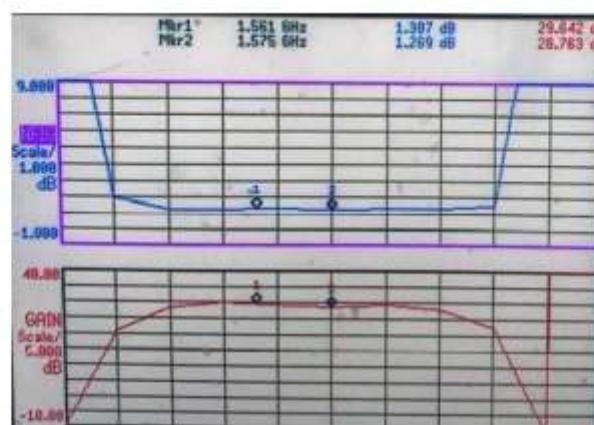
5.5.2. 1575 MHz



5.6. LNA Data



- Noise Figure



Frequency(MHz)	1561	1575
Noise Figure	1.3	1.2
LNA Gain	29	28

6 Product Size

