

## C-band 3W BUC

RF Frequency:

5.85 to 6.425 GHz and 5.85 to 6.725 GHz

### Model No. NJT8103 series

RF Frequency : 5.85 to 6.425 GHz / 5.85 to 6.725 GHz  
LO Frequency : 4.90 GHz  
IF Frequency : 950 to 1,525 MHz / 950 to 1,825 MHz  
Output Power @ 1dB G.C.P. :  
+34.5 dBm (3W)  
IF / Ref. (10MHz) Input :  
N-type / F-type, Female Connector  
DC Power Input : IF Connector

### Specifications

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Microwave Division

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  - \* Life Maintenance Medical Equipment
  - \* Fire Alarm/Intruder Detector
  - \* Vehicle Control Equipment (automobile, airplane, railroad, ship, etc.)
  - \* Various Safety Equipment
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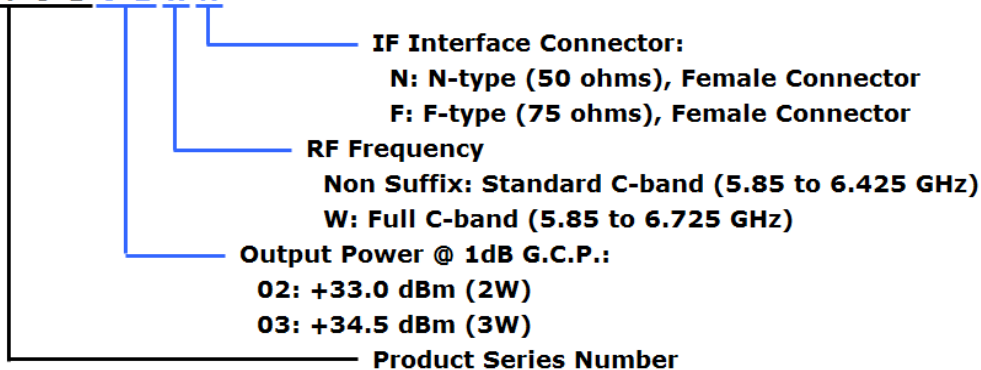
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## Model Number

- **Numbering System**

**N J T 8 1 0 2 W N**



- **Line-up**

Model No.	RF Frequency	Local Frequency	IF Frequency	Output Power @ P1dB	IF Connector	Power Supply	
<b>NJT8103N</b>	5.85 to 6.425 GHz (Standard C-band)	4.90 GHz	950 to 1,525 MHz	3W Linear (+34.5dBm min.)	N-type	+12 to +30 V DC Power	
<b>NJT8103F</b>					F-type		
<b>NJT8103WN</b>	5.85 to 6.725 GHz (Full C-band)		950 to 1,825 MHz		N-type		F-type
<b>NJT8103WF</b>							F-type
<b>NJT8102N</b>	5.85 to 6.425 GHz (Standard C-band)		950 to 1,525 MHz	2W Linear (+33.0dBm min.)	N-type		
<b>NJT8102F</b>					F-type		
<b>NJT8102WN</b>	5.85 to 6.725 GHz (Full C-band)		950 to 1,825 MHz		N-type		F-type
<b>NJT8102WF</b>							F-type

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## 1. Electrical Specifications

#	Items	Specifications
1-1.	Output Frequency Range	
	<Full C-band>	5.85 to 6.725 GHz
	<Standard C-band>	5.85 to 6.425 GHz
1-2.	Input Frequency Range	
	<Full C-band>	950 to 1,825 MHz
	<Standard C-band>	950 to 1,525 MHz
1-3.	Maximum IF Input Level (without damage)	+13 dBm max.
1-4.	Conversion Type	Single, fixed L.O.
1-5.	L.O. Frequency	4.90 GHz
1-6.	Frequency Sense	Positive
1-7.	Output Power @ 1dB G.C.P. (P1dB)	+34.5 dBm min. over temperature
1-8.	Linear Gain	59 dB nom., 53 dB min.
1-9.	Gain Variation over frequency @ fixed temperature	
	<Full C-band>	5 dBp-p max. over 875 MHz 2 dBp-p max. over 36 MHz
	<Standard C-band>	5 dBp-p max. over 575 MHz 2 dBp-p max. over 36 MHz
1-10.	Gain Stability over temperature @ fixed frequency	5 dBp-p max. 2 dBp-p typ.
1-11.	ACPR	-26 dBc typ. @ Pout = +34.5 dBm
1-12.	Requirement for External Reference [Frequency] [Input Power] [Phase Noise]	10 MHz (sine-wave) -5 to +5 dBm @ Input port -120 dBc/Hz max. @ 100 Hz -130 dBc/Hz max. @ 1 kHz -140 dBc/Hz max. @ 10 kHz
1-13.	L.O. Phase Noise	-60 dBc/Hz max. @ 100 Hz -70 dBc/Hz max. @ 1 kHz -80 dBc/Hz max. @ 10 kHz -90 dBc/Hz max. @ 100 kHz -100 dBc/Hz max. @ 1MHz
1-14.	Spurious @ Pout = +34.5 dBm <Full C-band> *Note	
	[in band] [in receive band] [Out-of-band]	-50 dBc max. @ 5.85 to 6.725. GHz -70 dBm max. @ 3.40 to 4.20 GHz -50 dBc max.
	<Standard C-band>	
	[in band] [in receive band] [Out-of-band]	-50 dBc max. @ 5.85 to 6.425 GHz -70 dBm max. @ 3.625 to 4.20 GHz -50 dBc max.
1-15.	Receive Band Noise Density	
	<Full C-band>	-87 dBm/4kHz max. @ 3.40 to 4.20 GHz
	<Standard C-band>	-87 dBm/4kHz max. @ 3.625 to 4.20 GHz
1-16.	Noise Figure	20 dB max.
1-17.	Input Impedance	
	<N-type Model>	50 ohms nom.
	<F-type Model>	75 ohms nom.

\*Note: The 2<sup>nd</sup> harmonics level of IF signal should be lower than -60dBc at the IDU and IF signal source output

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#	Items	Specifications
1-18.	Input V.S.W.R.	2 : 1 max.
1-19.	Output V.S.W.R.	2 : 1 max.
1-20.	Output Load V.S.W.R. [Recommendation] [Non Damage]	1.3 : 1 max. Infinite : 1
1-21.	DC Power Requirement [Voltage Range] [Power Consumption]	+24 VDC (+12 to +30 VDC) 21 W typ., 25 W max. @ Pout = +34.5 dBm 18 W typ. @ No IF signal 2 W max. @ 10 MHz reference off (Mute on)
1-22.	Mute	Shut off the HPA in case of L.O. unlocked or no 10 MHz reference signal.

## 2. Mechanical Specifications

#	Items	Specifications
2-1.	Input Interface	IF / Ref. / DC Input
	<N-type Model>	N-type female connector, 50 ohms
	<F-type Model>	F-type female connector, 75 ohms
2-2.	Output Interface	Waveguide, CPR-137 with Groove
2-3.	Dimension & Housing	135.4 (L) × 85 (W) × 56 (H) mm [5.33" (L) x 3.35" (W) x 2.20" (H)] without interface connectors and screws
2-4.	Weight	800 g [1.8 lbs]

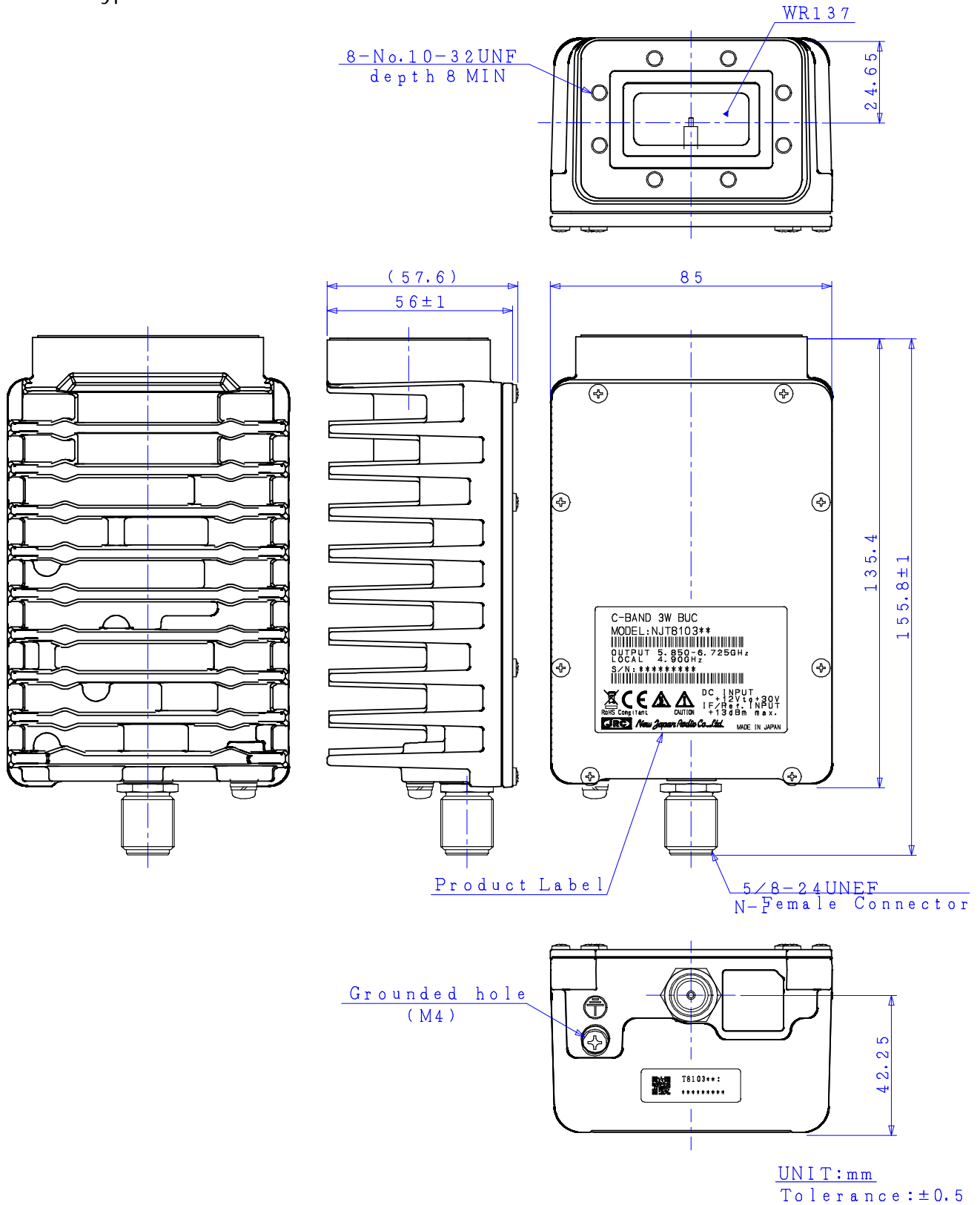
## 3. Environmental Specifications

#	Items	Specifications
3-1.	Temperature Range (ambient)	
	[Operating] [Storage]	-40 to +60 °C -40 to +75 °C
3-2.	Humidity	0 to 100 %
3-3.	Altitude	15,000 feet (4,572 m)
3-4.	Vibration	5 G [49.03 m/s <sup>2</sup> ] (3 axis, 50 Hz to 2 kHz)
		1 mm p-p (3 axis, 5 to 50 Hz)
3-5.	Shock	30 G [294.20 m/s <sup>2</sup> ] (3 axis)
3-6.	Waterproof / Dustproof (IP Code)	IP 67
3-7.	Regulations	EU Directive (CE Marking) EMC (2014/30/EC) RoHS (2011/65/EU) Safety: EN60950-1
3-8.	Comply with RoHS (Restricting the use of Hazardous Substances) directives	

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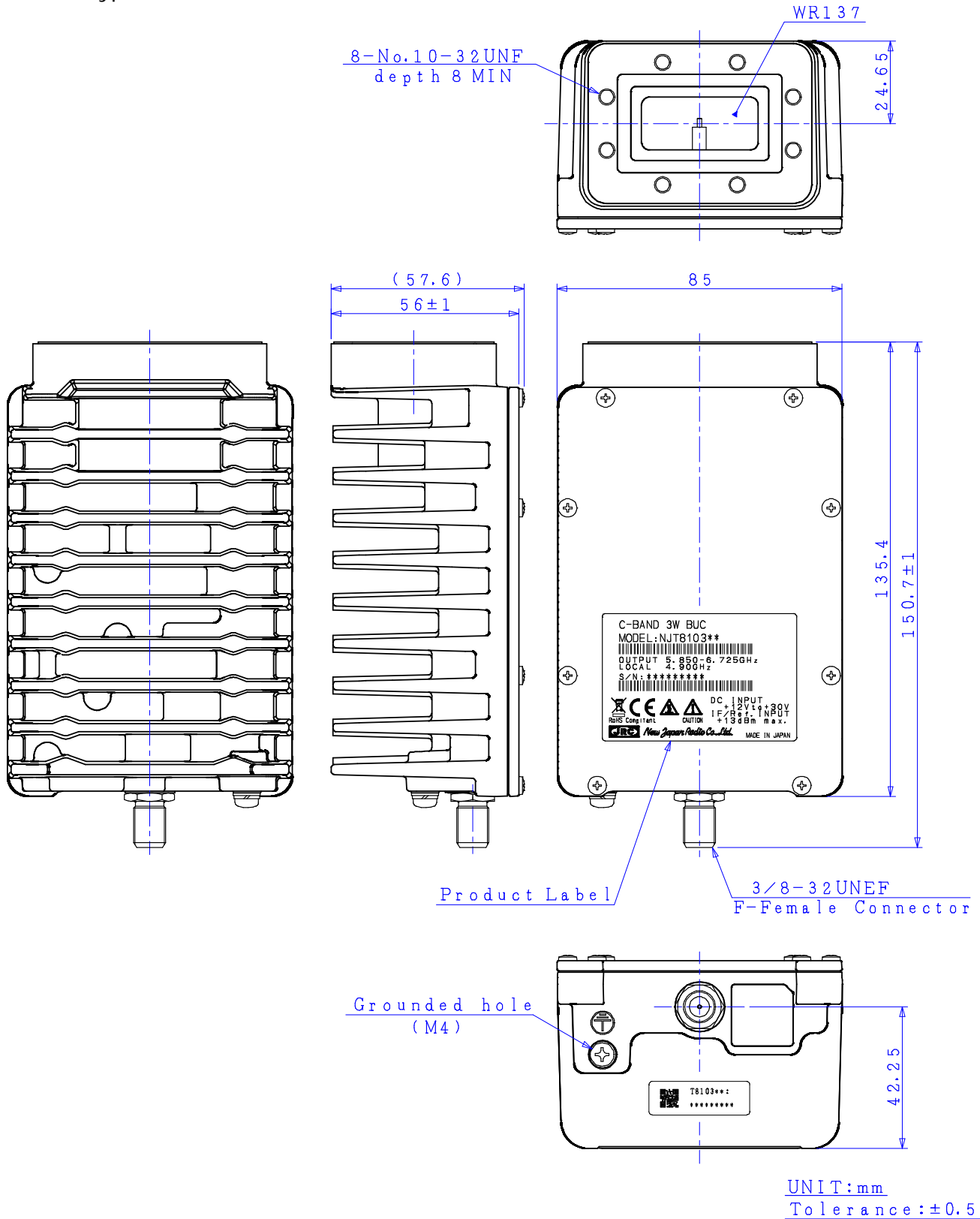
## 4. Outline Drawing

- N-type Model



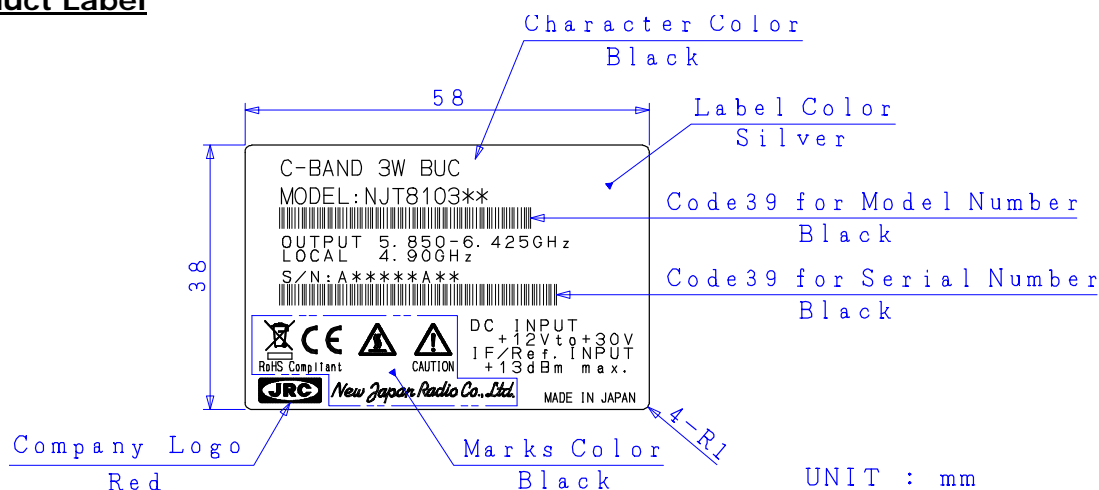
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● F-type Model



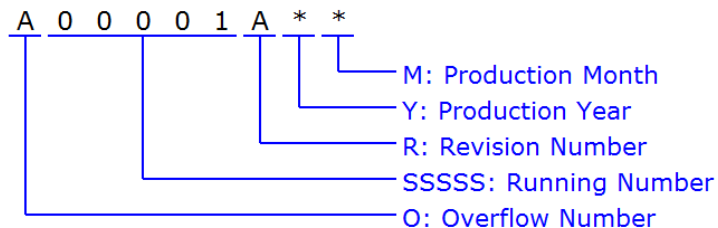
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## 5. Label Product Label



### Definition of Serial Number

Serial Number (OSSSSRYM) - ALPHANUMERIC (9 characters)



O: Overflow Number - ALPHABET (1 character)  
"A" to "Z", e.g.: A99999 ⇒ B00001

SSSSS: Running Number - NUMBER (5 digits)  
"00001" to "99999"

R: Revision Number - ALPHABET (1 character)  
"A" to "Z"

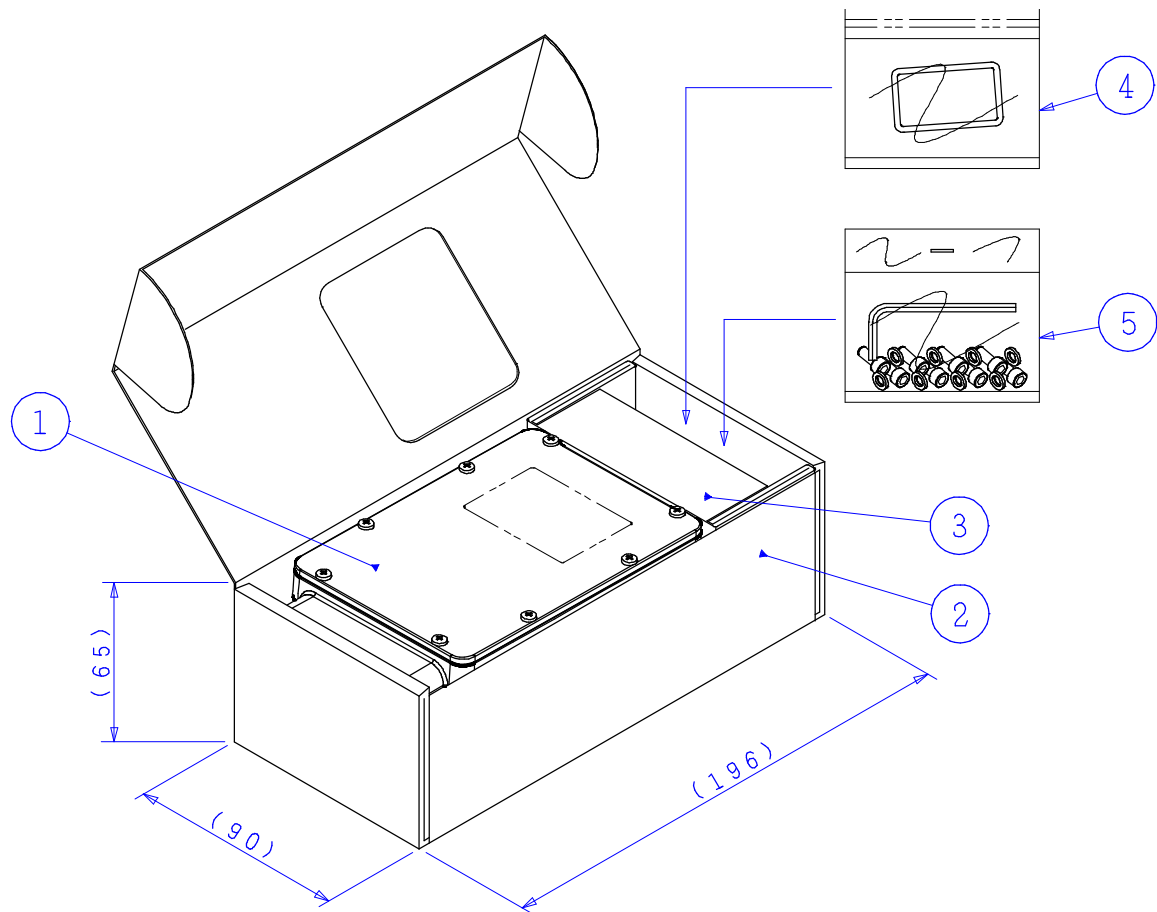
Y: Production Year - NUMBER (1 digit)  
Calendar Number, e.g.: 2009:9, 2010:0, 2011:1, 2012:2 ···

M: Production Month - ALPHANUMERIC (1character)  
"1" to "9", "X" as October, "Y" as November, "Z" as December

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## 6. Package Individual Package

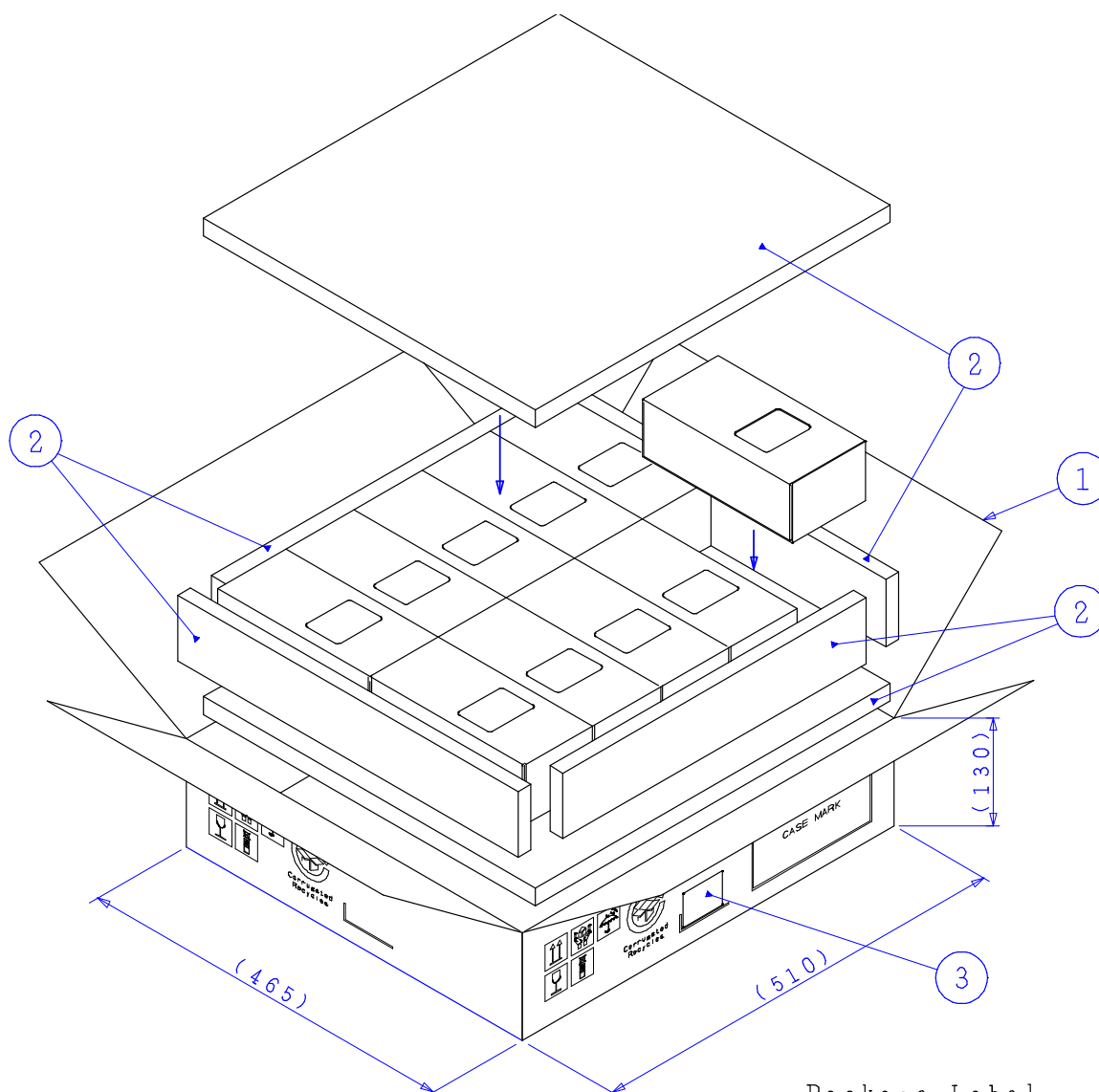


UNIT:mm

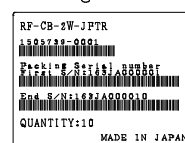
- ①: BUC
- ②: Single Wall Corrugated Fiberboard
- ③: Single Wall Corrugated Fiberboard
- ④: Accessories
  - O-RING
- ⑤: Accessories
  - Hexagon Socket Head Bolts
  - #10-32UNF×1/2 8pieces(SUS) for Waveguide Flange Holes
  - Spring Washers 8pieces(SUS)
  - Hexagon Wrench Key

\* Above Specifications are subject to change without notice.

**Shipping Package (10 pieces standard)**



Package Label



UNIT : mm

Pictorial Marking for Handling of Goods



THIS WAY UP



HANDLE WITH CARE



KEEP DRY



FRAGILE



LAYERS LIMIT:8

- ①: Double Wall Corrugated Fiberboard
- ②: Polystyrene Foam For Package Cushioning
- ③: Package Label

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