INNOVATOR IN ELECTRONICS

Datasheet of SAW Device

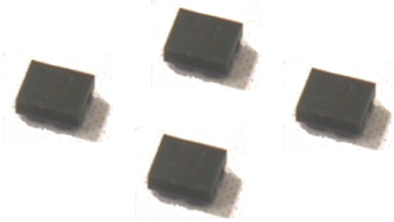
SAW Dual Duplexer

for Band1_Band3 / Unbalanced / 2520

Murata PN: SAPRY1G74BA0B0A

■ Feature

- Land Pattern can be commonized with Band1+3 2520 QPX
- For Non-CA



Note : Murata SAW Component is applicable for Cellular /Cordless phone (Terminal) relevant market only.
Please also read caution at the end of this document.

Revision
D

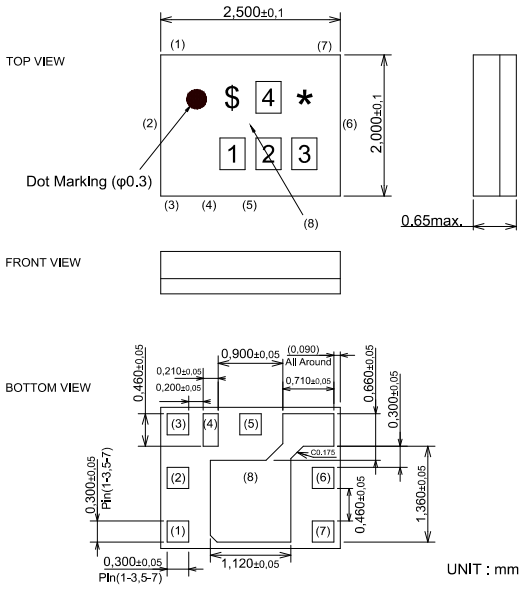
General Information

- Operating temperature	: -20 to +85 deg.C
- Storage temperature	: -40 to +85 deg.C
- Input Power	: +30 dBm 2000 h +50 deg.C
- D.C. Volatage between the terminals	: 3V (25+/-2 deg.C)
- Minimum Resistance between the terminals	: 1M ohm
- RoHS compliance	: Yes
- ESD (ElectroStatic Discharge) sensitive device	

Package Dimensions & Recommended Land Pattern

unit: mm

Dimensions



Marking : Laser Printing

* : Month code(Refer to the table A)

$: Date code(Refer to the table B)

1 : B

2 : 1

3 : T

4 : 0

Terminal Number

(3) : ANT. Port (B1)

(1) : TX Port (B1)

(6) : RX Port (B1)

(5) : ANT. Port (B3)

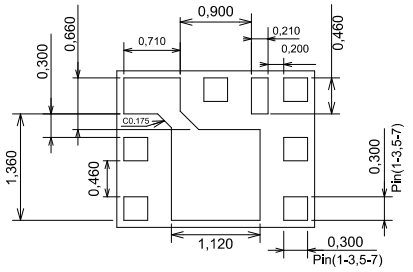
(2) : TX Port (B3)

(7) : RX Port (B3)

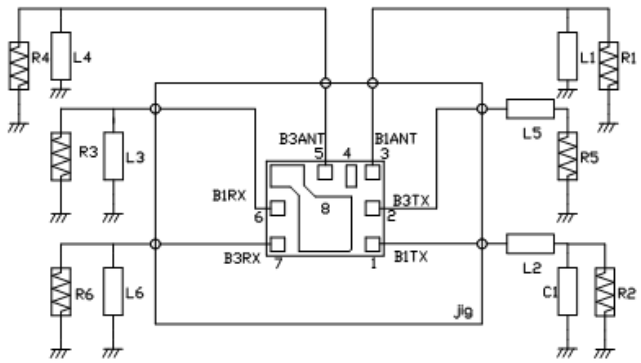
Others : GND.

Notice) Please refer to Measurement Circuit for Port information in detail.

Land Pattern



Measurement Circuit (Top Thru View)



R1 : 50 ohm	L1 :2.5nH(Ideal inductor)
R2 : 50 ohm	L2 :2.5nH(Ideal inductor)
	C1 :1pF(Ideal capacitor)
R3 : 50 ohm	L3 :12nH(Ideal inductor)
R4 : 50 ohm	L4 :3.9nH(Ideal inductor)
R5 : 50 ohm	L5 :3nH(Ideal inductor)
R6 : 50 ohm	L6 :8nH(Ideal inductor)

Electrical Characteristic < Band1 TX→ANT. >

TX → ANT.			Characteristics (-20 to +85 deg.C)			Unit	Note
			min.	typ.*	max.		
Center Frequency				1950		MHz	
Insertion Loss	1920. to 1980. MHz			1.5	2.0	dB	
	1920. to 1980. MHz			1.5	1.9	dB	+23 to +27deg.C
	1922.5 to 1977.5 MHz			1.5	1.9	dB_{INT}	Any 4.5MHz
Ripple Deviation	1920. to 1980. MHz			0.5	1.2	dB	
VSWR	1920. to 1980. MHz			1.6	2.0		TX
	1920. to 1980. MHz			1.4	2.0		ANT.
Absolute Attenuation	10. to 1574. MHz		30	34		dB	
	420. to 494. MHz		44	49		dB	450MHz RX Att.
	815. to 830. MHz		30	40		dB	B18 TX CA
	824. to 849. MHz		30	39		dB	B5 TX CA
	830. to 845. MHz		30	39		dB	B19 TX CA
	843. to 894. MHz		30	38		dB	JCDMA/CELL RX Att.
	880. to 915. MHz		30	38		dB	B8 TX CA
	925. to 960. MHz		30	37		dB	WLAN and DL CA
	1226. to 1250. MHz		25	35		dB	GPS L2
	1447.9 to 1462.9 MHz		30	42		dB	B21 TX CA
	1475. to 1496. MHz		35	43		dB	B11 RX band
	1496. to 1511. MHz		38	45		dB	B21 RX band
	1559. to 1563. MHz		40	53		dB	Compass
	1565.42 to 1573.37 MHz		40	54		dB	Wideband GPS lower side
	1573.37 to 1577.47 MHz		40	54		dB	Regular GPS main lobe
	1577.47 to 1585.42 MHz		40	54		dB	Wideband GPS upper side
	1597.55 to 1605.89 MHz		43	54		dB	GLONASS
	1605.88 to 1805. MHz		25	43		dB	
	1805. to 1865. MHz		25	42		dB	Protected DCS band
	1865. to 1880. MHz		10	42		dB	Protected DCS band
	1880. to 1895. MHz		10	35		dB	
	2010. to 2025. MHz		2.0	6.7		dB	+15 to +85deg.C, B34
	2112.5 to 2167.5 MHz		44	55		dB_{INT}	Any 4.5MHz, RX
	2400. to 2500. MHz		36	41		dB	ISM2.4
	2620. to 2690. MHz		35	42		dB	Protected 2.6GHz band
	3840. to 3960. MHz		25	35		dB	2f
	4900. to 5950. MHz		20	27		dB	3f
	4905. to 5845. MHz		20	27		dB	WLAN 801.11a
	7680. to 7920. MHz		15	53		dB	4f

* Typical value at 25±2deg.C

Electrical Characteristic < ANT.→Band1 RX >

ANT. → RX			Characteristics (-20 to +85 deg.C)			Unit	Note
			min.	typ.*	max.		
Center Frequency				2140		MHz	
Insertion Loss	2110. to 2170.	MHz		1.9	2.3	dB	
	2110. to 2170.	MHz		1.9	2.3	dB	+23 to +27deg.C
	2112.5 to 2167.5	MHz		1.7	2.2	dB_{INT}	Any 4.5MHz
Ripple Deviation	2110. to 2170.	MHz		0.6	1.5	dB	
VSWR	2110. to 2170.	MHz		1.5	2.0		RX
	2110. to 2170.	MHz		1.5	2.0		ANT.
Absolute Attenuation	1. to 1920.	MHz	40	45		dB	
	190.	MHz	50	92		dB	RX-TX
	718. to 748.	MHz	40	58		dB	B28-B TX CA
	814. to 849.	MHz	40	56		dB	B26 TX CA
	880. to 915.	MHz	40	55		dB	B8 TX CA
	1427. to 1447.	MHz	40	48		dB	B11 TX CA
	1447. to 1463.	MHz	40	48		dB	B21 TX CA
	1447. to 1463.	MHz	40	48		dB	B21 TX CA
	1730. to 1790.	MHz	40	46		dB	2TX-RX
	1710. to 1785.	MHz	44	46		dB	B3 TX CA
	1922.5 to 1977.5	MHz	45	58		dB_{INT}	Any 4.5MHz, TX
	1980. to 2015.	MHz	15	61		dB	
	2015. to 2075.	MHz	4.0	10.0		dB	(RX+TX)/2
	2255. to 6130.	MHz	20	30		dB	
	2400. to 2500.	MHz	35	44		dB	ISM2.4
	2500. to 2570.	MHz	40	47		dB	B7 TX CA
	4030. to 4150.	MHz	35	44		dB	RX+TX
	4220. to 4340.	MHz	35	44		dB	2f
	4340. to 13025.	MHz	15	29		dB	
	4900. to 5950.	MHz	20	30		dB	ISM 5G
	5950. to 6130.	MHz	20	31		dB	RX+2TX
	6130. to 6330.	MHz	20	31		dB	
	6330. to 6510.	MHz	20	31		dB	3f

* Typical value at 25±2deg.C

SAPRY1G74BA0B0A (Band1_Band3 / Unbalanced / 2520)

Electrical Characteristic < Band1 Isolation >

TX → RX				Characteristics (-20 to +85 deg.C)			Unit	Note
				min.	typ.*	max.		
Isolation								
	1574.	to	1577. MHz	40	73		dB	
	1920.	to	1980. MHz	55	58		dB	TX
	1922.5	to	1977.5 MHz	55	59		dB_{INT}	Any 4.5MHz, TX
	2110.	to	2170. MHz	51	54		dB	RX
	2112.5	to	2167.5 MHz	51	55		dB_{INT}	Any 4.5MHz, RX
	3830.	to	3970. MHz	20	63		dB	TX 2nd harmonic Att.
	5750.	to	5950. MHz	20	56		dB	TX 3rd harmonic Att.

* Typical value at 25±2deg.C

Electrical Characteristic < Band3 TX→ANT. >

TX → ANT.				Characteristics (-20 to +85 deg.C)			Unit	Note
				min.	typ.*	max.		
Center Frequency					1747.5		MHz	
Insertion Loss	1710.	to	1785. MHz		2.0	2.5	dB	
	1710.	to	1785. MHz		2.0	2.1	dB	+23 to +27deg.C
	1712.5	to	1782.5 MHz		1.5	2.0	dB_{INT}	Any 4.5MHz
Ripple Deviation	1710.	to	1785. MHz		1.2	2.0	dB	
VSWR	1710.	to	1785. MHz		1.6	2.0		TX
	1710.	to	1785. MHz		1.6	2.0		ANT.
Absolute Attenuation	10.	to	1565.42 MHz	25	36		dB	
	703.	to	748. MHz	30	42		dB	B28 TX CA
	716.	to	756. MHz	30	42		dB	B28 RX
	814.	to	849. MHz	30	40		dB	B26 TX CA
	824.	to	849. MHz	30	40		dB	B5 TX CA
	830.	to	845. MHz	30	40		dB	B19 TX CA
	832.	to	862. MHz	30	40		dB	B20 TX CA
	880.	to	915. MHz	30	39		dB	B8 TX CA
	925.	to	960. MHz	30	39		dB	WLAN and DL CA
	1496.	to	1511. MHz	30	42		dB	B21 RX band
	1559.	to	1563. MHz	43	53		dB	Compass
	1565.42	to	1573.37 MHz	43	51		dB	Wideband GPS lower side
	1573.37	to	1577.47 MHz	43	50		dB	Regular GPS main lobe
	1577.47	to	1585.42 MHz	43	48		dB	Wideband GPS upper side
	1597.55	to	1605.89 MHz	40	45		dB	GLONASS
	1605.88	to	1680. MHz	5.0	9.6		dB	
	1805.	to	1880. MHz	44	51		dB	RX
	1807.25	to	1877.5 MHz	44	51		dB_{INT}	Any 4.5MHz, RX
	1920.	to	1980. MHz	20	43		dB	
	2110.	to	2170. MHz	27	45		dB	
	2400.	to	2500. MHz	35	44		dB	WLAN coexistence
	2440.	to	2494. MHz	35	44		dB	
	2500.	to	2570. MHz	30	43		dB	B7 TX CA
	2620.	to	2690. MHz	35	42		dB	
	3420.	to	3570. MHz	20	25		dB	2f
	4900.	to	5950. MHz	10	18		dB	WLAN coexistence
	5100.	to	5385. MHz	15	21		dB	
	5130.	to	5355. MHz	15	22		dB	3f
	6840.	to	7140. MHz	15	35		dB	4f

* Typical value at 25±2deg.C

SAPRY1G74BA0B0A (Band1_Band3 / Unbalanced / 2520)

Electrical Characteristic < ANT.→Band3 RX >

ANT. → RX				Characteristics (-20 to +85 deg.C)			Unit	Note
				min.	typ.*	max.		
Center Frequency					1842.5		MHz	
Insertion Loss	1805.	to	1880. MHz		2.7	4.5	dB	
	1805.	to	1880. MHz		2.7	3.6	dB	+23 to +27deg.C
	1807.5	to	1877.5 MHz		2.2	3.6	dB_{INT}	Any 4.5MHz
Ripple Deviation	1805.	to	1880. MHz		1.6	4.3	dB	
VSWR	1805.	to	1880. MHz		1.7	2.2		RX
	1805.	to	1880. MHz		1.8	2.2		ANT.
Absolute Attenuation	1.	to	1710. MHz	35	43		dB	
			95. MHz	50	111		dB	RX-TX
	718.	to	748. MHz	40	56		dB	B28-B TX CA
	814.	to	849. MHz	40	53		dB	B26 TX CA
	832.	to	862. MHz	40	52		dB	B20 TX CA
	880.	to	915. MHz	40	52		dB	B8 TX CA
	1447.	to	1463. MHz	35	43		dB	B21 TX CA
	1615.	to	1690. MHz	35	46		dB	2TX-RX
	1710.	to	1785. MHz	40	56		dB	TX
	1712.5	to	1782.5 MHz	45	58		dB_{INT}	Any 4.5MHz, TX
	1785.	to	1790. MHz	15	48		dB	(RX+TX)/2
	1920.	to	6000. MHz	30	39		dB	
	2400.	to	2500. MHz	40	45		dB	ISM2.4
	2500.	to	2570. MHz	35	43		dB	B7 TX
	2570.	to	3515. MHz	35	43		dB	
	3515.	to	3760. MHz	40	55		dB	RX+TX and 2f
	4900.	to	5950. MHz	40	48		dB	ISM 5G
	5205.	to	5660. MHz	40	49		dB	WLAN and RX+2TX and 3f
	7220.	to	7520. MHz	40	46		dB	4f

* Typical value at 25±2deg.C

SAPRY1G74BA0B0A (Band1_Band3 / Unbalanced / 2520)

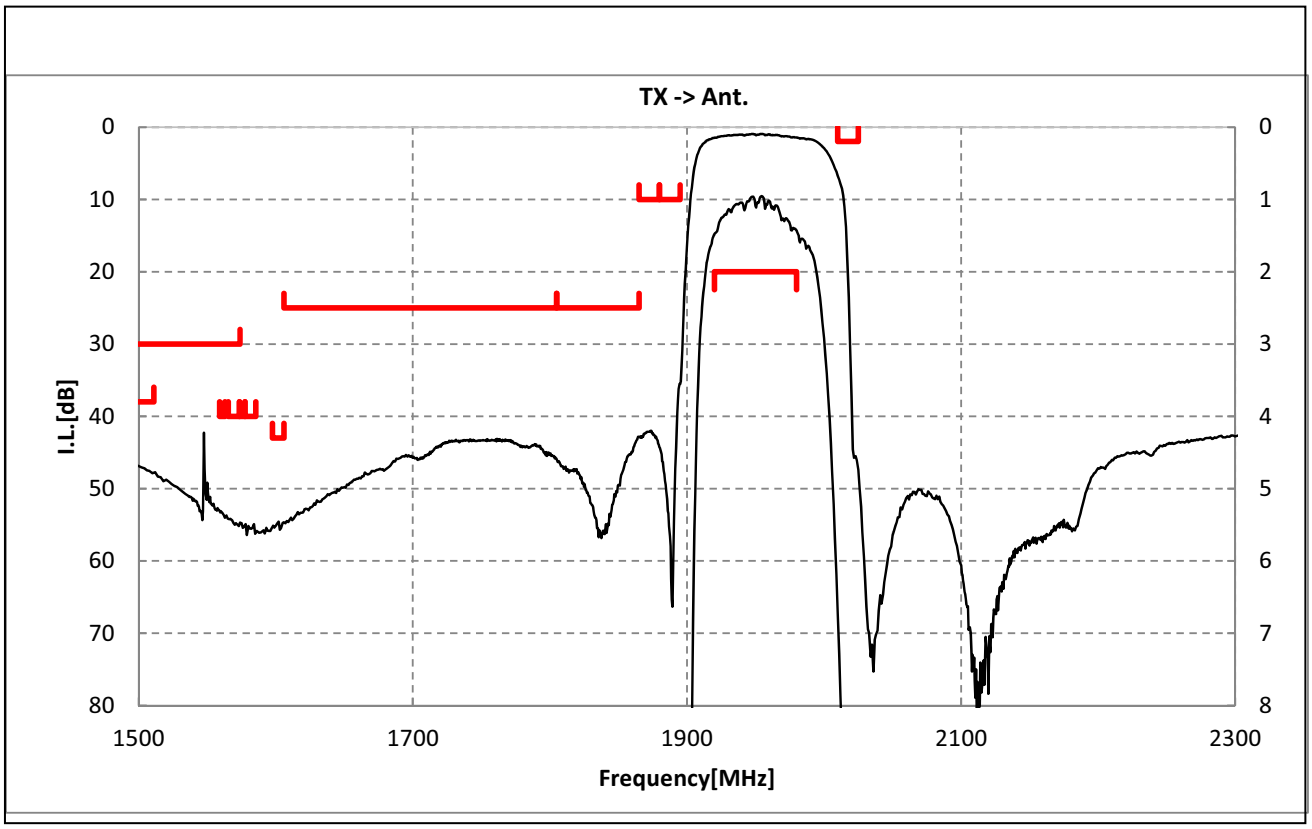
Electrical Characteristic < Band3 Isolation >

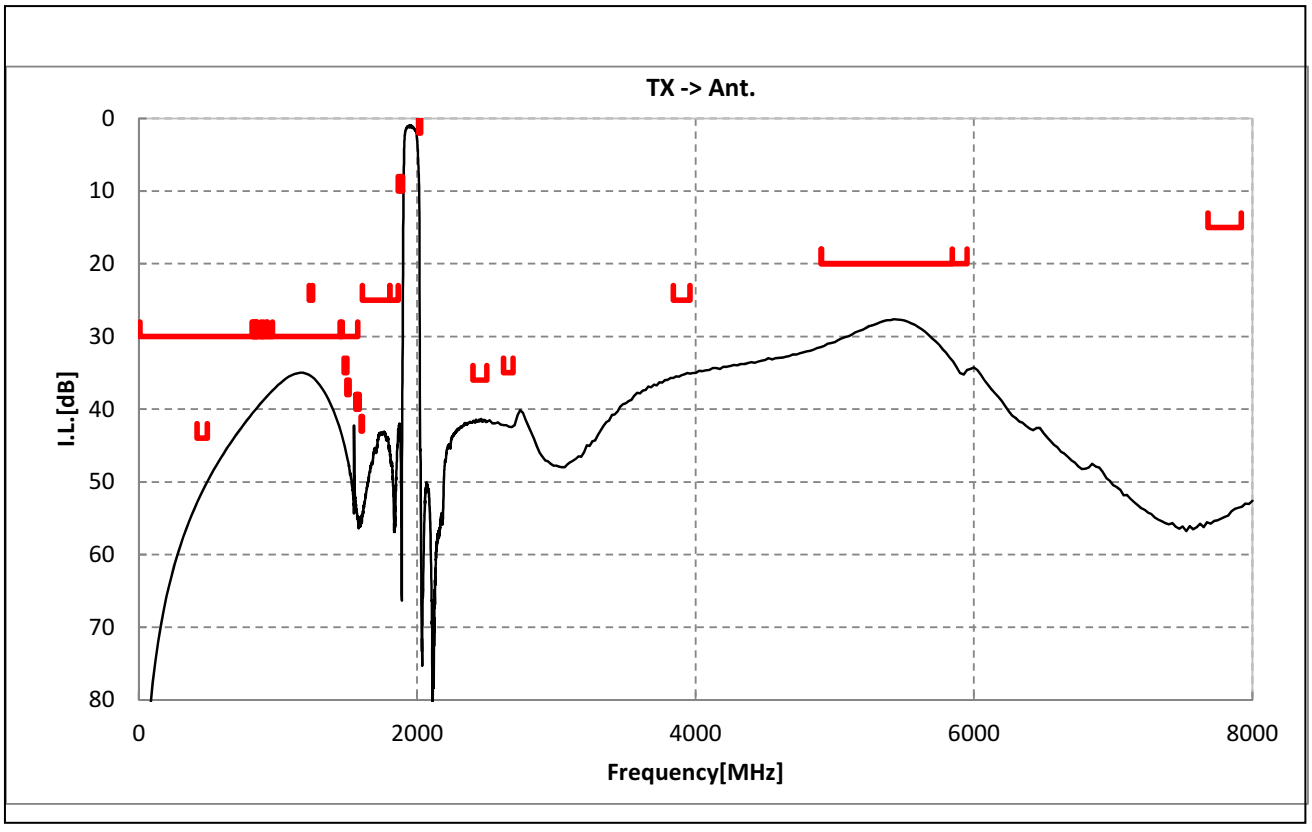
TX → RX					Characteristics (-20 to +85 deg.C)			Unit	Note
					min.	typ.*	max.		
Isolation									
	1710.	to	1785.	MHz	50	56		dB	TX
	1712.5	to	1782.5	MHz	52	58		dB_{INT}	Any 4.5MHz, TX
	1805.	to	1880.	MHz	50	53		dB	RX
	1807.5	to	1877.5	MHz	52	54		dB_{INT}	Any 4.5MHz, RX

* Typical value at 25±2deg.C

Electrical Characteristic

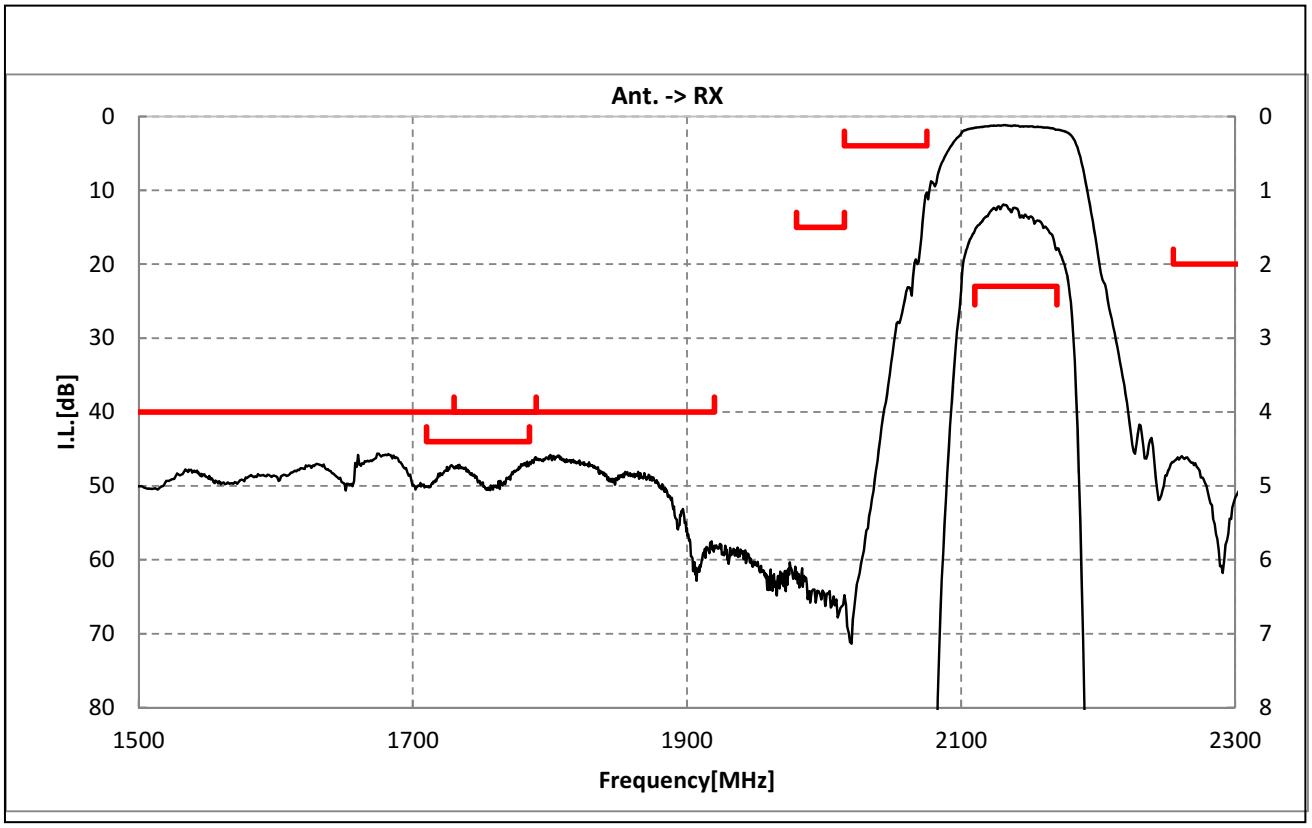
< Band1 TX→ANT. >

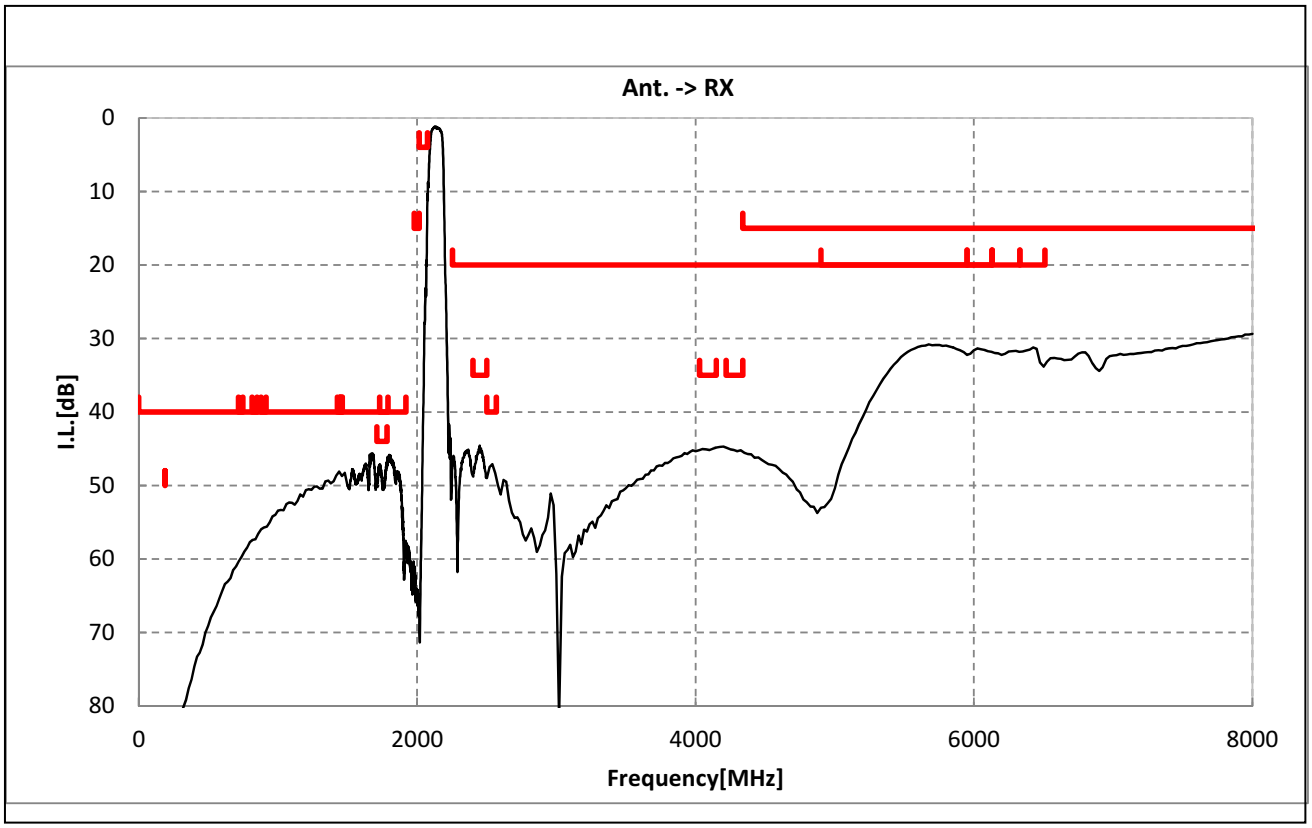




Electrical Characteristic

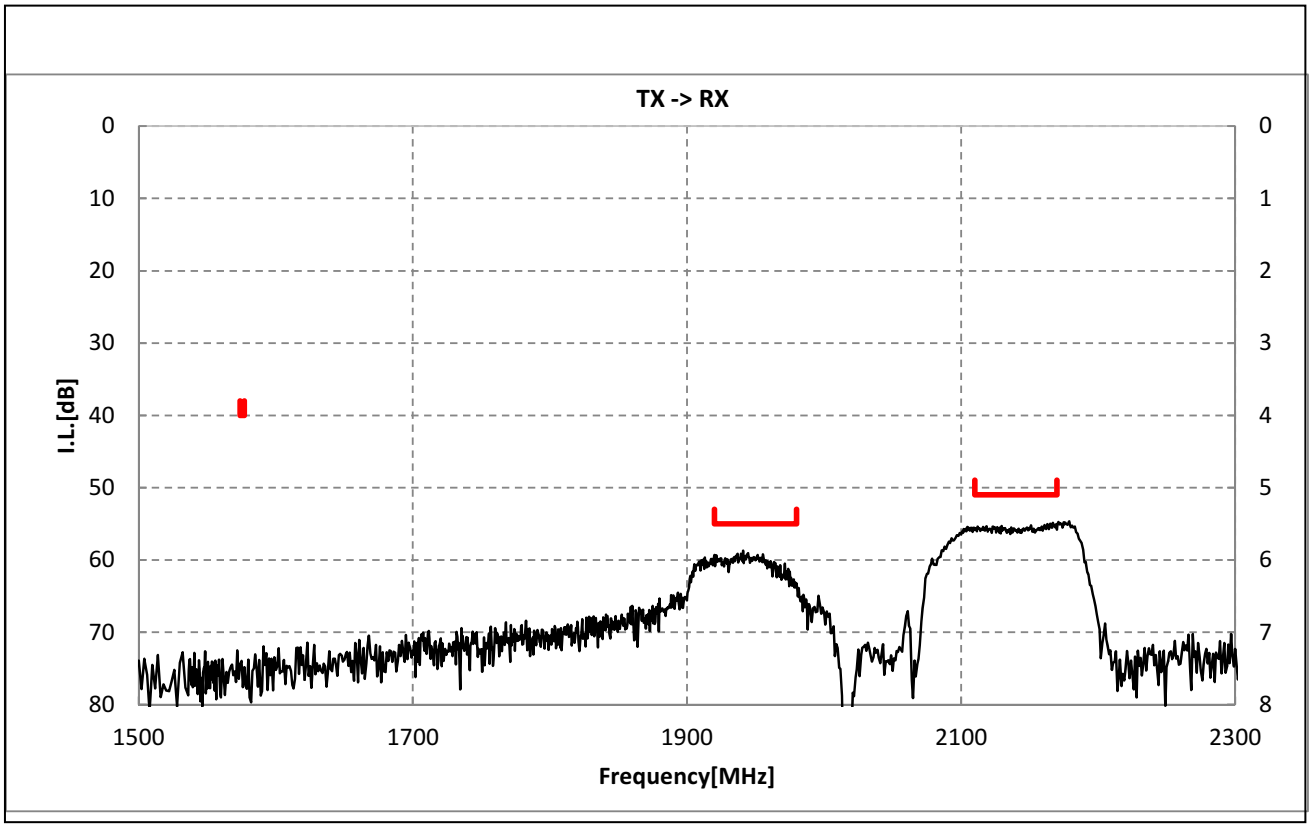
< ANT.→Band1 RX >

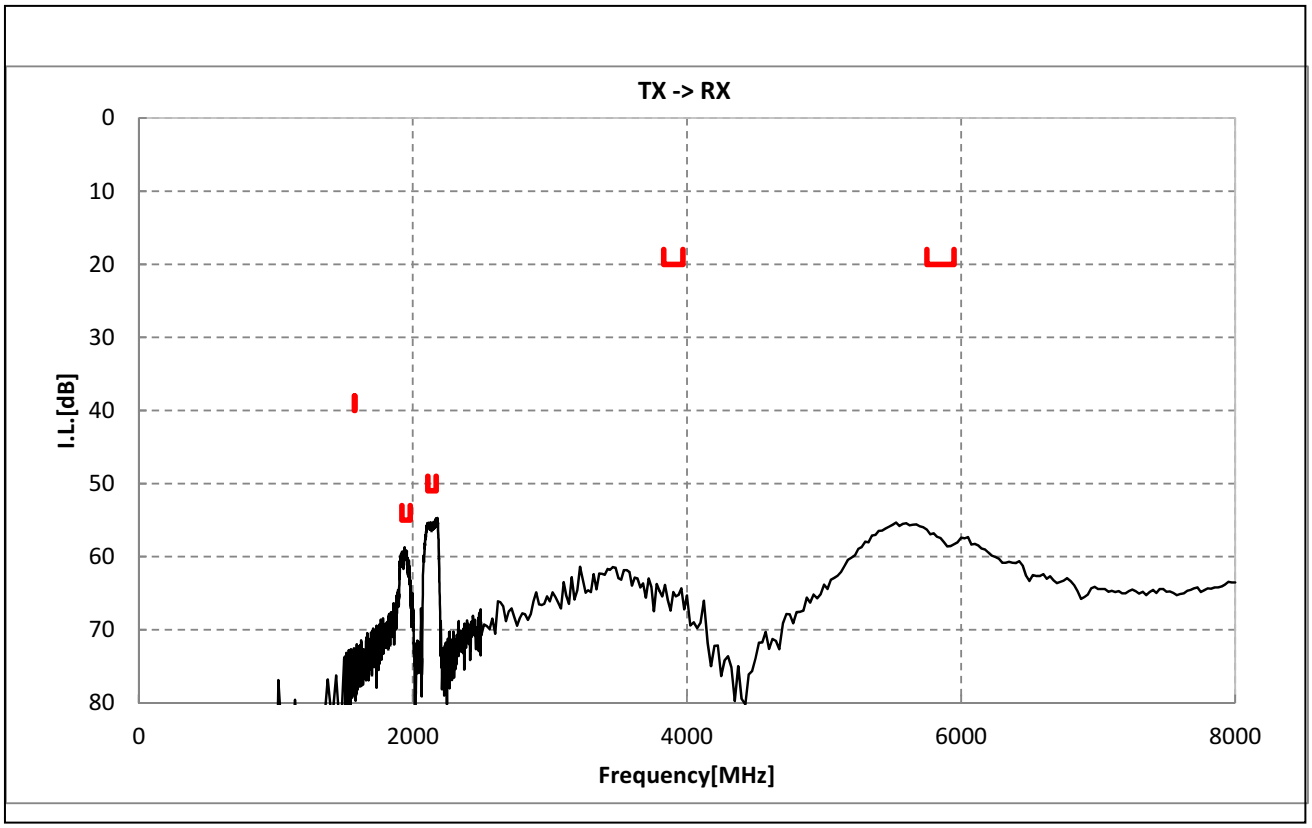




Electrical Characteristic

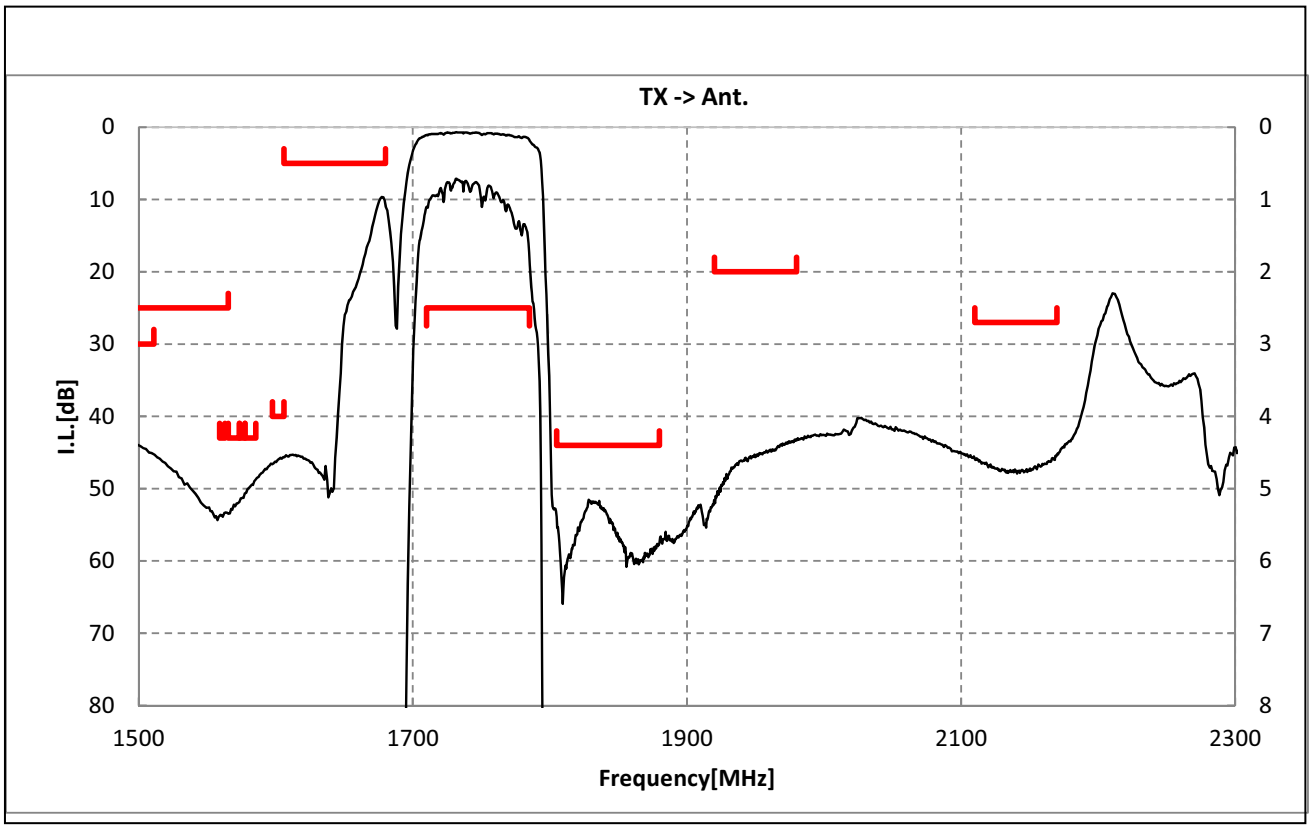
< Band1 TX→Band1 RX >

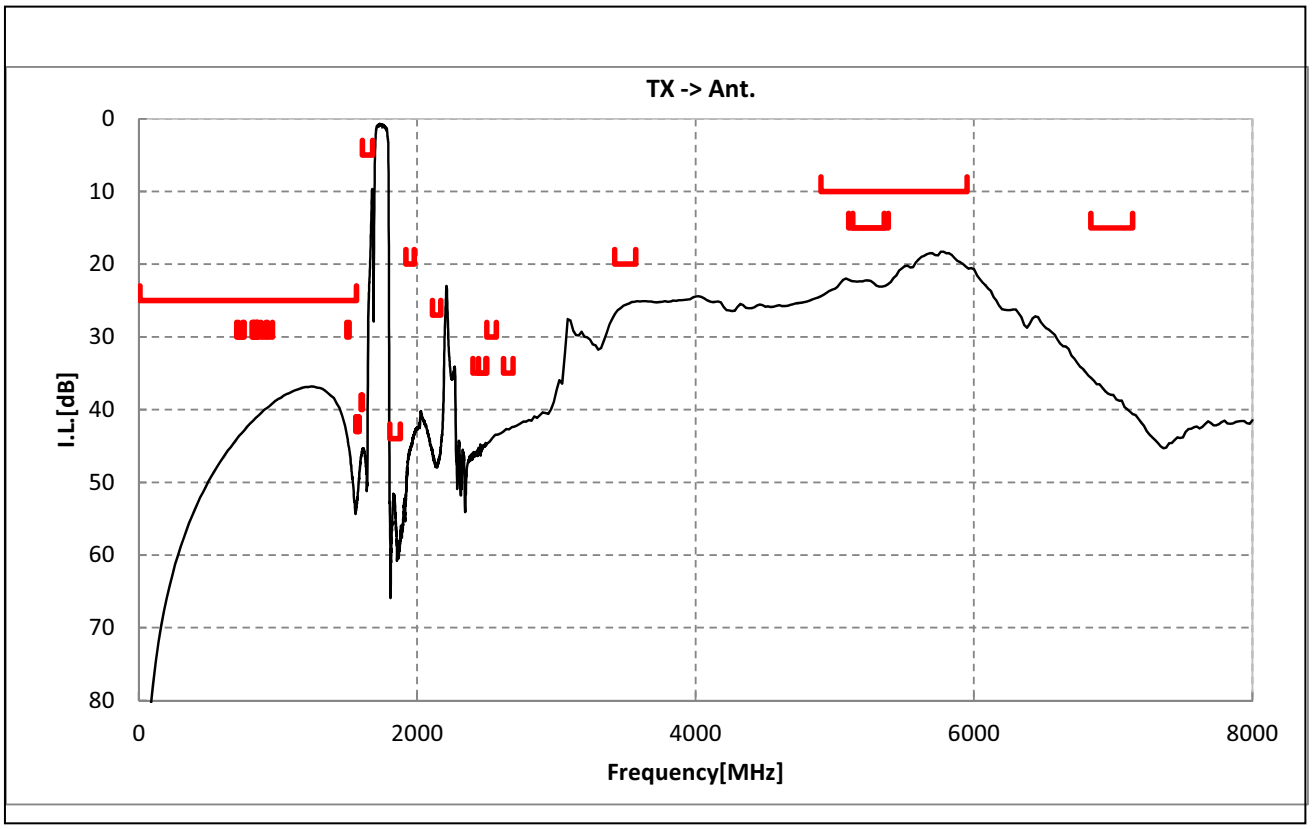




Electrical Characteristic

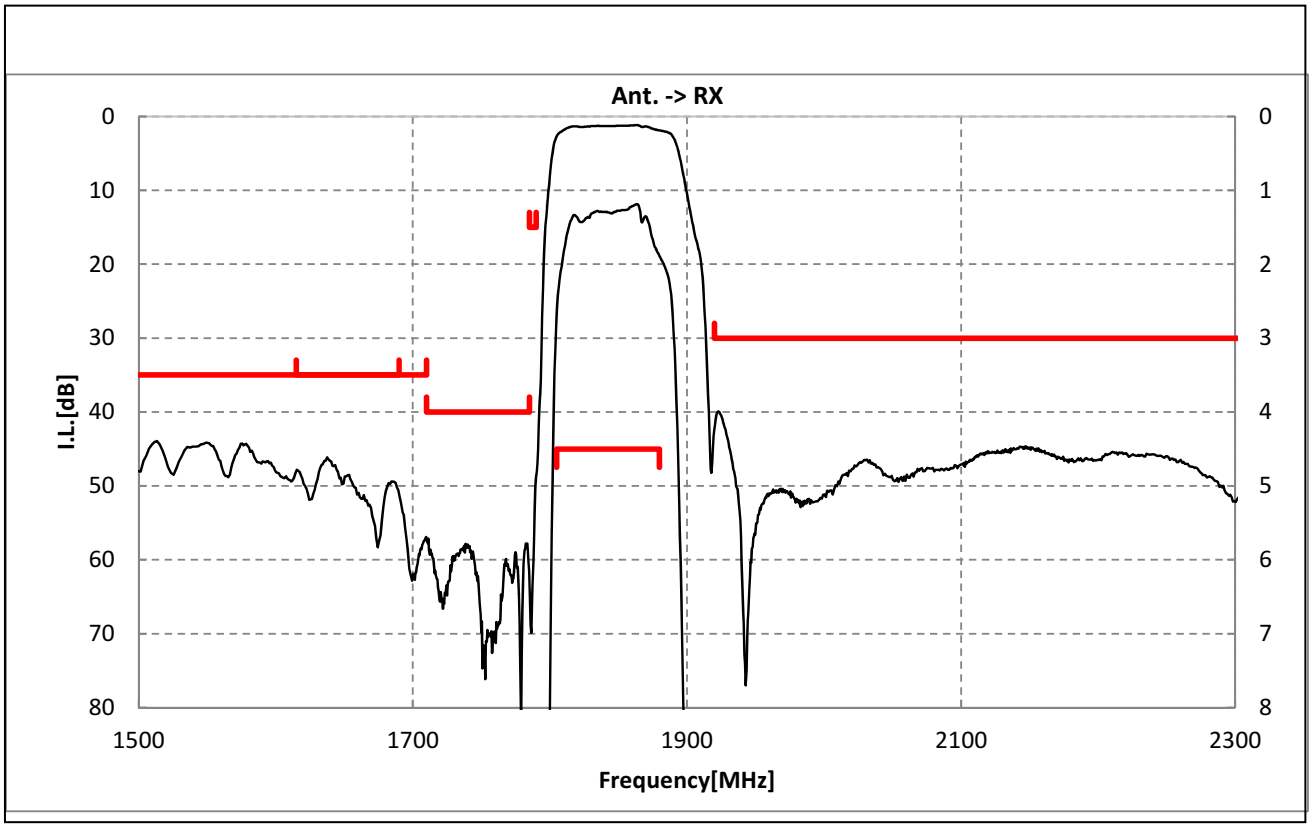
< Band3 TX→ANT. >

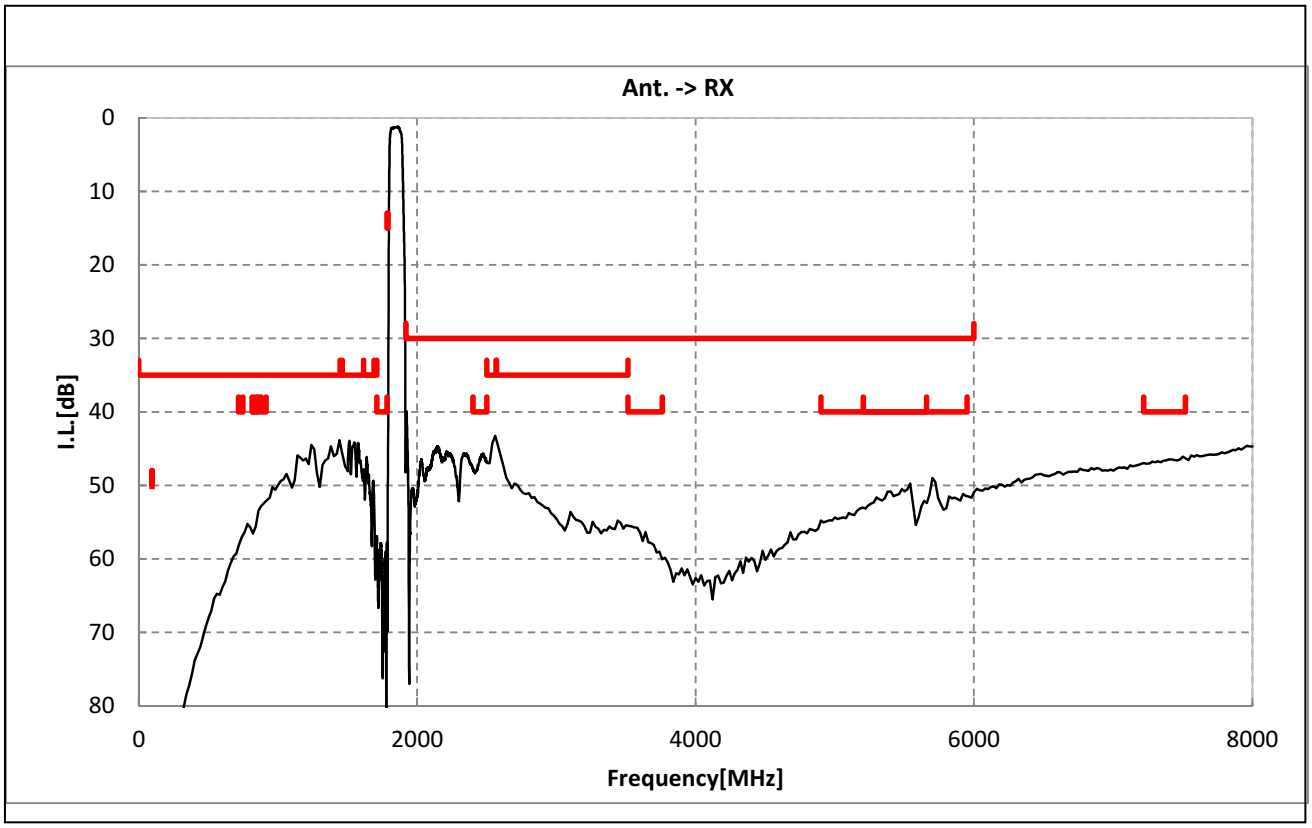




Electrical Characteristic

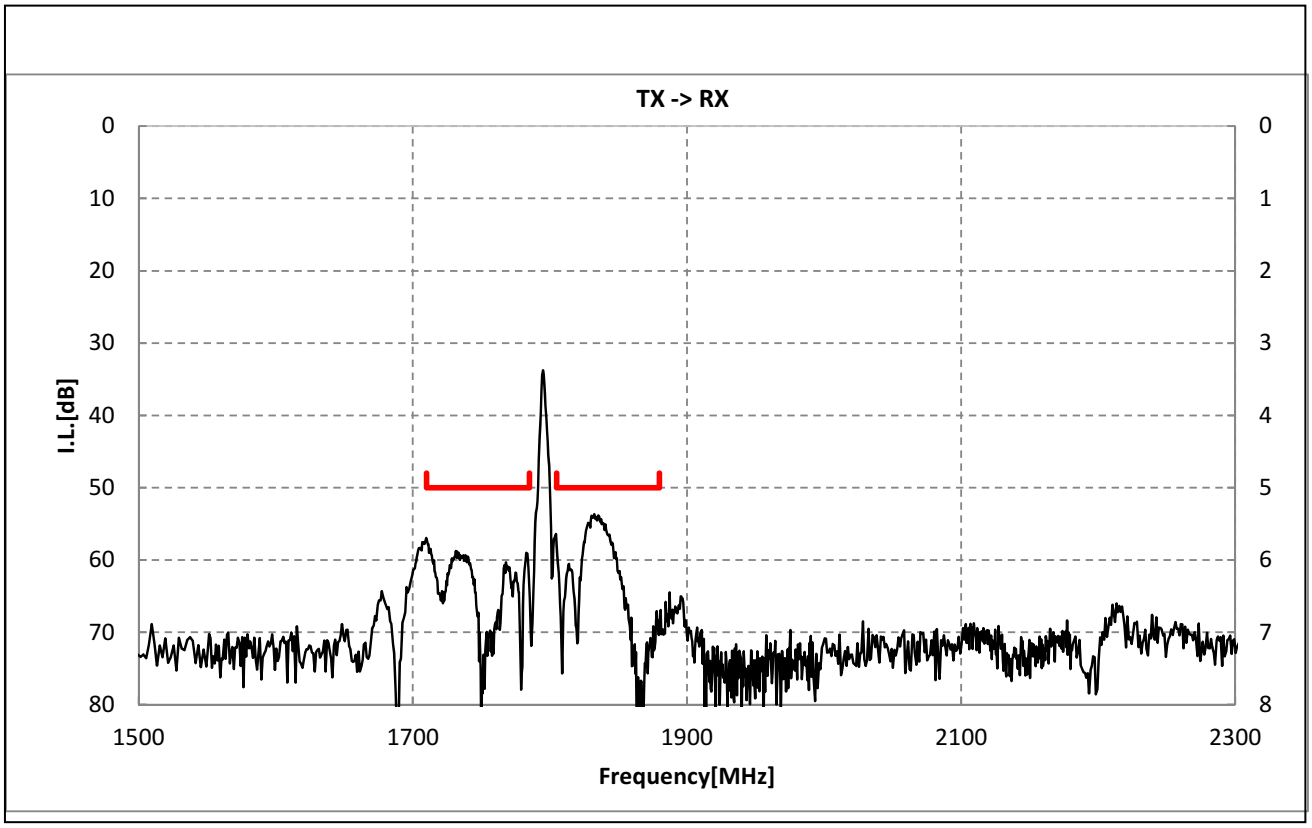
< ANT.→Band3 RX >

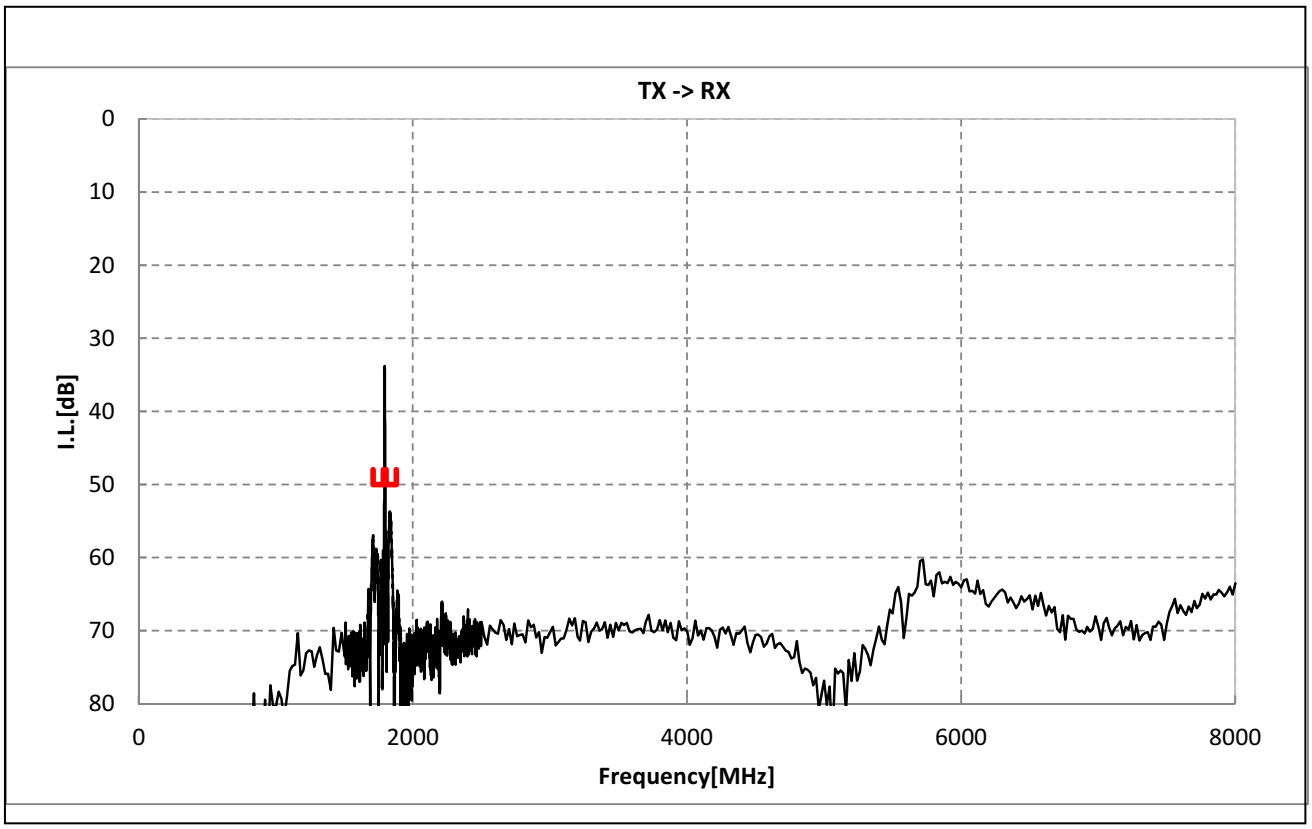




Electrical Characteristic

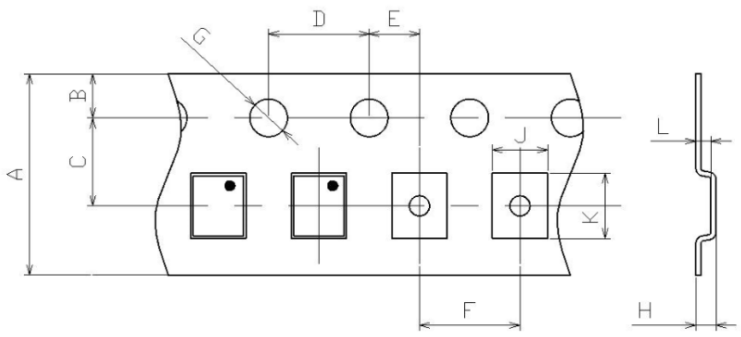
< Band3 TX→Band3 RX >





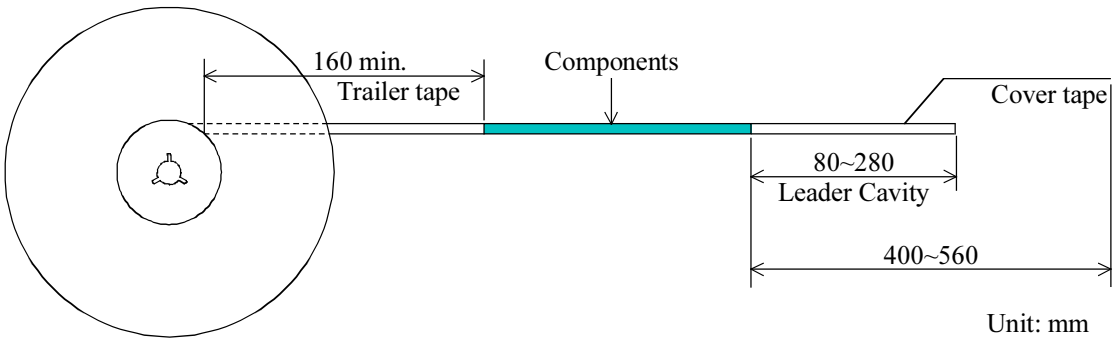
Dimensions of Tape & Reel unit: mm

Carrier Tape

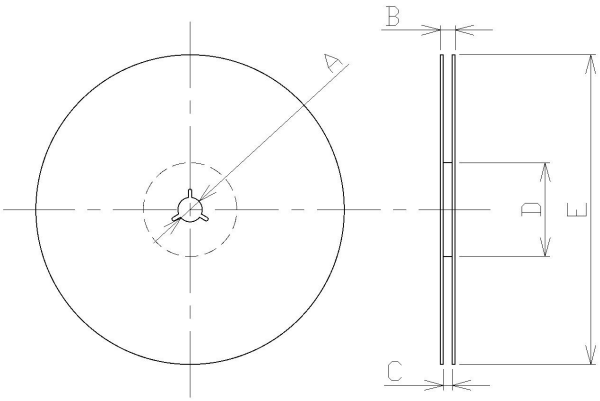


A:	8.0	J:	2.3
B:	1.75	K:	2.8
C:	3.50	L:	0.90
D:	4.0		
E:	2.00		
F:	4.0		
G:	φ1.5		
H:	1.20		

Tape



Reel



φ178Reel		φ330Reel	
A:	φ13.0	A:	φ13.0
B:	13.5max	B:	15.5max
C:	9.0	C:	9.5
D:	φ60	D:	φ100
E:	φ178	E:	φ330

SAPRY1G74BA0B0AR00… 10000pcs (φ330)
SAPRY1G74BA0B0AR1S… Sample Order (φ178/330)

Marking Code

Table A: Month Code

2013 2017 2021	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	A	B	C	D	E	F	G	H	J	K	L	M
2014 2018 2022	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	N	P	Q	R	S	T	U	V	W	X	Y	Z
2015 2019 2023	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	a	b	c̄	d	e	f	g	h	j	k	l	m
2016 2020 2024	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	n	p	q	r	s	t	u	v	w	x	y	z

Table B: Date Code

date	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
code	A	B	C	D	E	F	G	H	J	K
date	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th
code	L	M	N	P	Q	R	S	T	U	V
date	21st	22nd	23rd	24th	25th	26th	27th	28th	29th	30th	31st
code	W	X	Y	Z	a	b	c̄	d	e	f	g

Important Notice (1/2)

PLEASE READ THIS NOTICE BEFORE USING OUR PRODUCTS.

Please make sure that your product has been evaluated and confirmed from the aspect of the fitness for the specifications of our product when our product is mounted to your product.
All the items and parameters in this product specification/datasheet/catalog have been prescribed on the premise that our product is used for the purpose, under the condition and in the environment specified in this specification. You are requested not to use our product deviating from the condition and the environment specified in this specification.
Please note that the only warranty that we provide regarding the products is its conformance to the specifications provided herein. Accordingly, we shall not be responsible for any defects in products or equipment incorporating such products, which are caused under the conditions other than those specified in this specification.

WE HEREBY DISCLAIMS ALL OTHER WARRANTIES REGARDING THE PRODUCTS, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, THAT THEY ARE DEFECT-FREE, OR AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS.

The product shall not be used in any application listed below which requires especially high reliability for the prevention of such defect as may directly cause damage to the third party's life, body or property. You acknowledge and agree that, if you use our products in such applications, we will not be responsible for any failure to meet such requirements.

Important Notice (2/2)

Furthermore, YOU AGREE TO INDEMNIFY AND DEFEND US AND OUR AFFILIATES AGAINST ALL CLAIMS, DAMAGES, COSTS, AND EXPENSES THAT MAY BE INCURRED, INCLUDING WITHOUT LIMITATION, ATTORNEY FEES AND COSTS, DUE TO THE USE OF OUR PRODUCTS IN SUCH APPLICATIONS.

- Aircraft equipment.
- Aerospace equipment
- Undersea equipment.
- Power plant control equipment - Medical equipment.
- Transportation equipment (vehicles, trains, ships, elevator, etc.).
- Traffic signal equipment.
- Disaster prevention / crime prevention equipment.
- Burning / explosion control equipment
- Application of similar complexity and/ or reliability requirements to the applications listed in the above.

We expressly prohibit you from analyzing, breaking, Reverse-Engineering, remodeling altering, and reproducing our product. Our product cannot be used for the product which is prohibited from being manufactured, used, and sold by the regulations and laws in the world.

Please do not use the product in molding condition.

We do not warrant or represent that any license, either express or implied, is granted under any our patent right, copyright, mask work right, or our other intellectual property right relating to any combination, machine, or process in which our products or services are used. Information provided by us regarding third-party products or services does not constitute a license from us to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from us under our patents or other intellectual property.

Please do not use our products, our technical information and other data provided by us for the purpose of developing of mass-destruction weapons and the purpose of military use.
Moreover, you must comply with "foreign exchange and foreign trade law", the "U.S. export administration regulations", etc.

Please note that we may discontinue the manufacture of our products, due to reasons such as end of supply of materials and/or components from our suppliers.

Customer acknowledges that Murata will, if requested by you, conduct a failure analysis for defect or alleged defect of Products only at the level required for consumer grade Products, and thus such analysis may not always be available or be in accordance with your request (for example, in cases where the defect was caused by components in Products supplied to Murata from a third party).

The product shall not be used in any other application/model than that of claimed to Murata.

Customer acknowledges that engineering samples may deviate from specifications and may contain defects due to their development status.
We reject any liability or product warranty for engineering samples.
In particular we disclaim liability for damages caused by

- the use of the engineering sample other than for evaluation purposes, particularly the installation or integration in the product to be sold by you,
- deviation or lapse in function of engineering sample,
- improper use of engineering samples.

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