

IQ Mixer

RF/LO: 2-4.5GHz/IF: DC-1.5GHz

Model: TLIQ-2G4.5G-1.5-S

TLIQ-2G4.5G-1.5-S is an ultra-broadband mixer spanning 2 to 4.5 GHz on the RF and LO ports with an IF from DC to 1.5GHz. Up to 20dBc of image rejection is available due to the excellent phase and amplitude balance of its on-chip LO quadrature hybrid.

Features:

- RF/LO coverage: 2-4.5GHz
- IF operation: DC-1.5GHz
- Conversion loss: 9dB Typ
- LO power: 16dBm Typ
- Image Rejection : 20dBc Typ

Applications:

- Single Sideband and Image Rejection Mixing
- IQ Modulation / Demodulation
- Vector Amplitude Modulation
- Band Shifting

Electrical Characteristics:

Parameter	Min	Typ	Max	Units
RF Frequency	2		4.5	GHz
LO Frequency	2		4.5	GHz
LO-Input power	15	16	20	dBm
IF Frequency	DC		1.5	GHz
Image Rejection @RF/LO:2-4.5GHz,I+Q:0.5GHz		20		dBc
Conversion Loss @RF/LO:2-4.5GHz,I/Q:0.5GHz		9		dB
Input 1 dB Gain Compression Point		11		dBm
LO to IF Isolation		12		dB
LO to RF Isolation		40		dB
RF to IF Isolation		30		dB

Mechanical Specifications:

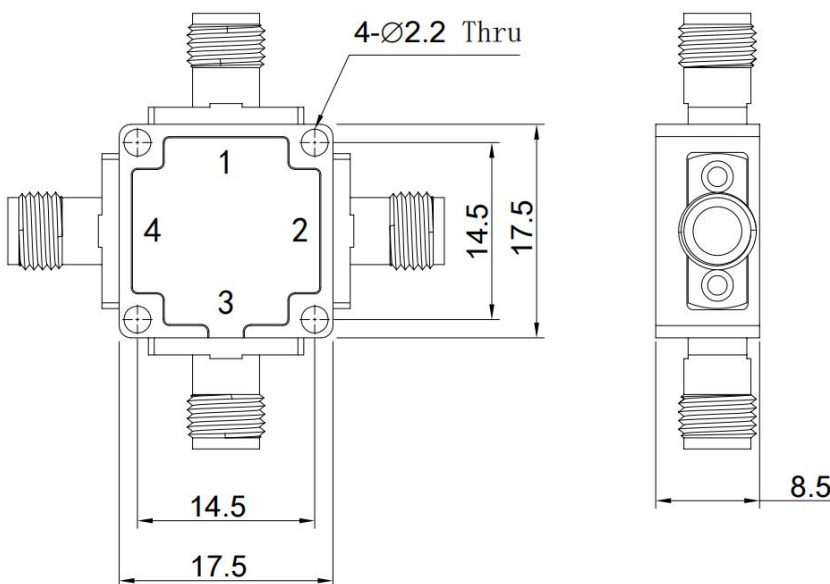
Parameter	Value	Units
RF Connector	SMA Female	
LO Connector	SMA Female	
IF Connector	SMA Female	
Size	17.5*17.5*8.5(Without Connector)	mm

Absolute Maximum Ratings:

Parameter	Value
Power Handling, at any Port	+20 dBm
ESD sensitivity (HBm)	Class 0, passed 150V

Outline Drawing:

Unit:mm; Tolerance:±0.1mm



Port	Value
1	IF1
2	LO
3	IF2
4	RF



ESD Protection: Strictly adhere to ESD precautions to prevent electrostatic damage.

Environmental Conditions:

Parameter	Min	Typ	Max	Units
Operating Temperature	-45		+85	°C
Non-operating Temperature	-55		+125	°C
Relative humidity		95		%
Altitude	10,000			feet
Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

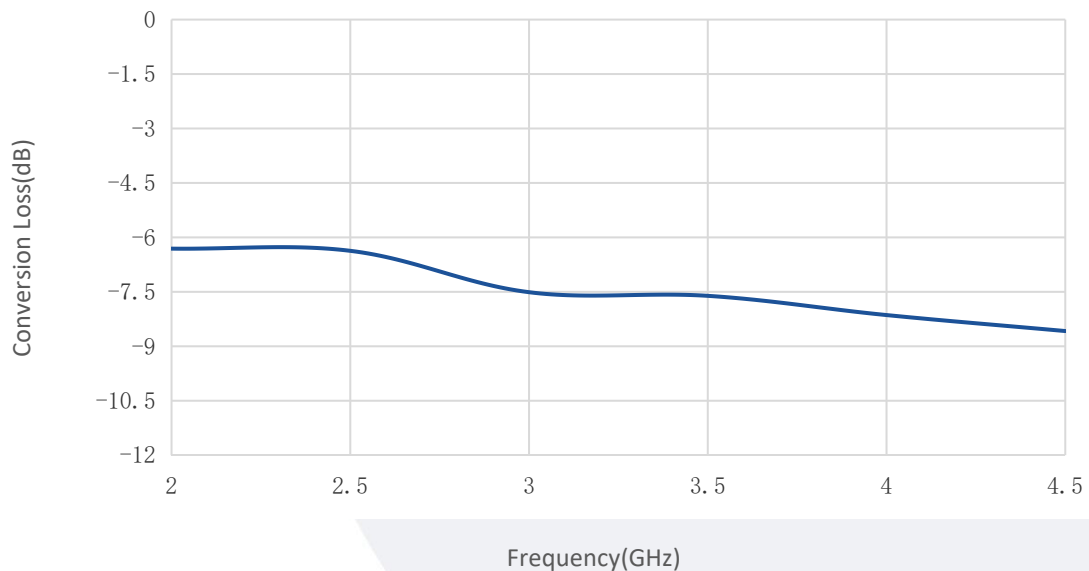
Ordering Information:

Base Number	Description	Revision
TLIQ-2G4.5G-1.5-S	Image Rejection or I/Q Mixer RF:2-4.5GHz,LO:2-4.5GHz,IF:DC-1.5GHz	Rev.1.0

Typical Performance Data:

Conversion Loss vs Frequency

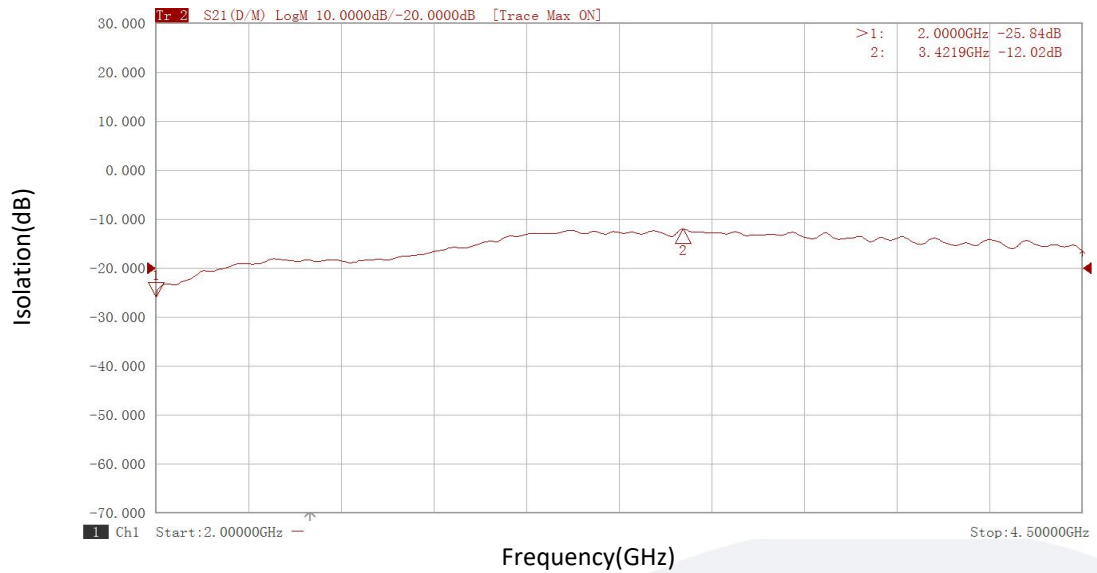
IF1+IF2=0.5GHz



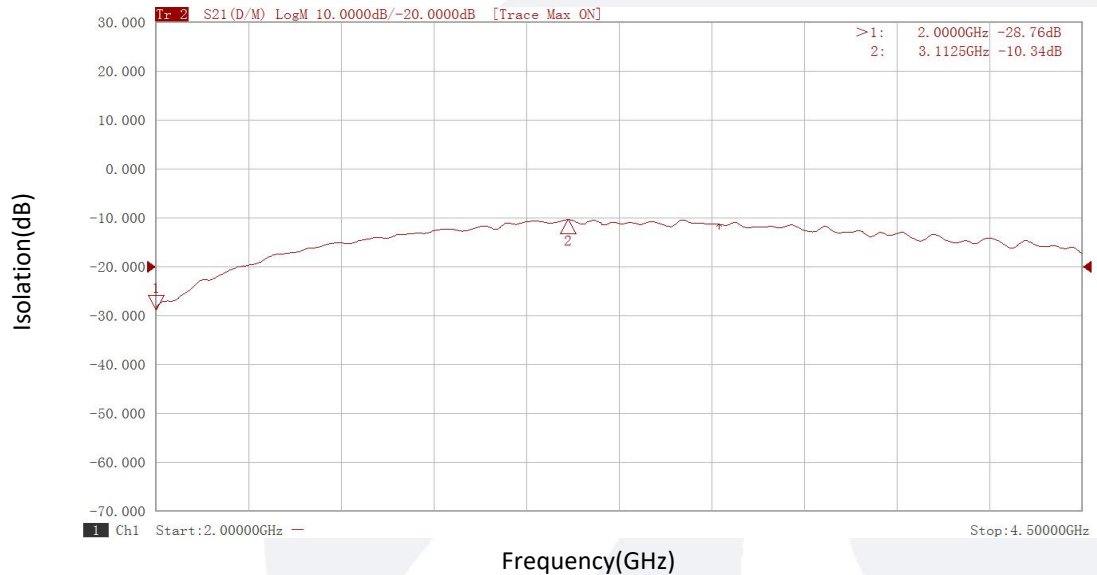
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

LO to IF1 Isolation vs Frequency



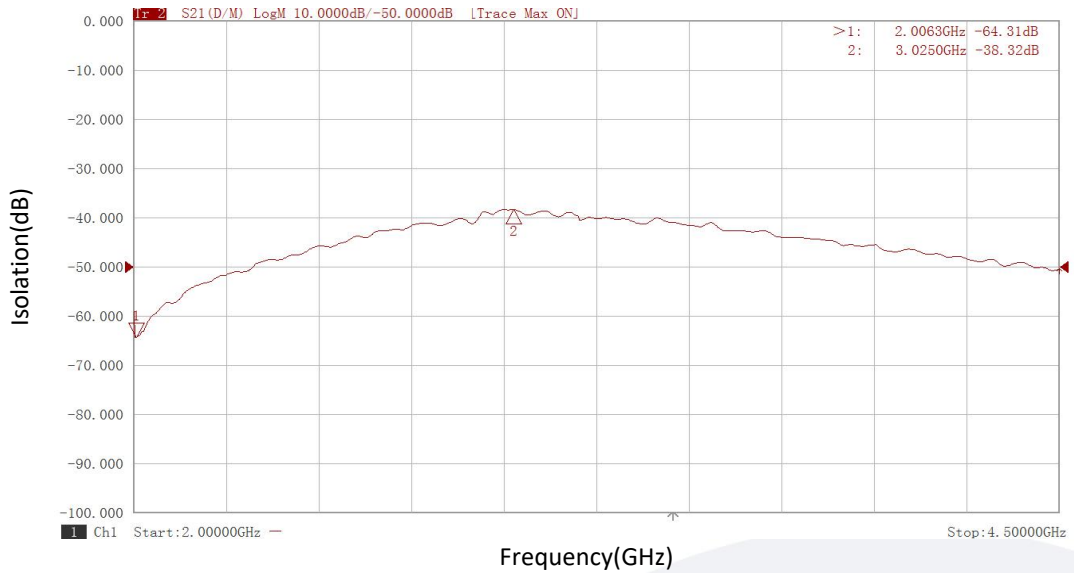
LO to IF2 Isolation vs Frequency



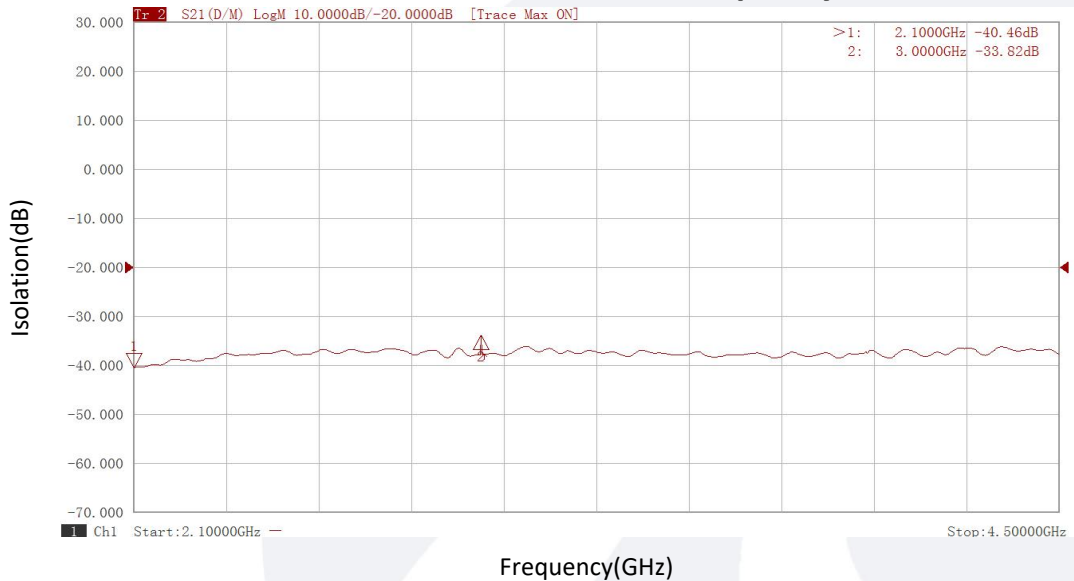
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

LO to RF Isolation vs Frequency



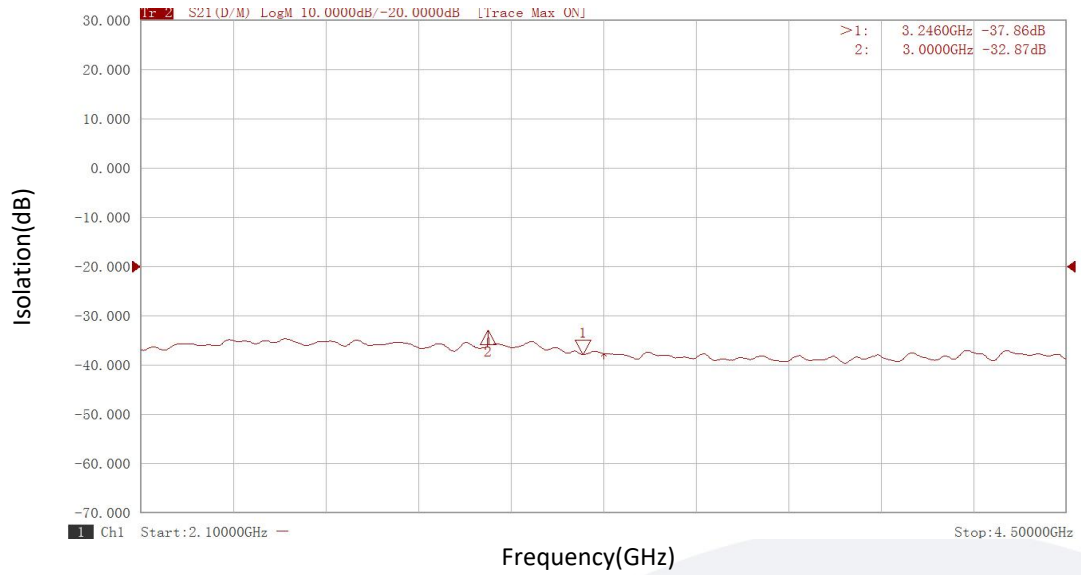
RF to IF1 Isolation vs Frequency



Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

RF to IF2 Isolation vs Frequency



Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.