

# High IP3 Frequency Mixer

## LAVI-971VH+

Level 21 (LO Power +21 dBm) 270 to 970 MHz



CASE STYLE: CK605

**+RoHS Compliant**

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

### Maximum Ratings

Operating Temperature	-45°C to 85°C
Storage Temperature	-55°C to 100°C
LO Power	+24 dBm
RF Power	+21 dBm

Permanent damage may occur if any of these limits are exceeded.

### Pin Connections

LO	10
RF	2
IF	14
GROUND	1,3,4,5,6,7,8,9,11,12,13,15,16

### Features

- excellent IP2, 60 dBm typ.
- very high IP3, 33 dBm typ.
- excellent L-R isolation, 48 dB typ; and L-I isolation, 36 dB typ.
- high 1 dB compression, 20 dBm typ.
- shielded metal cover
- aqueous washable
- protected by US Patent 6,807,407

### Applications

- cellular base stations
- mobile radio
- defense communications
- industrial communications

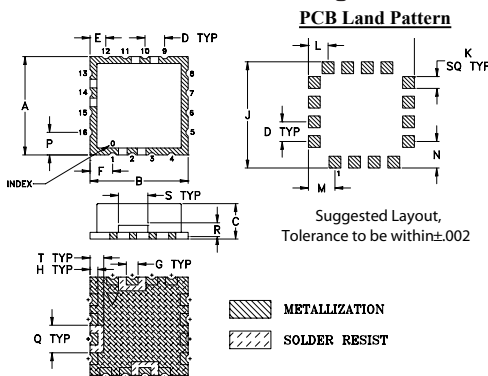
### Electrical Specifications (T<sub>AMB</sub>=25°C)

FREQUENCY (MHz)			CONVERSION LOSS (dB)			RF in at 1dB Compr. (dBm)	IP3 (dBm)	IP2 (dBm)	LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)	
RF	LO	IF	Typ.	σ	Max.	Typ.	Typ.	Typ.	Typ.	Min.	Typ.	Min.
270-970	340-1040	10-600	7.5	0.12	9.5	+20	33	60	48	32	36	28

### Typical Performance Data

Frequency (MHz)		Conv. Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)	IP3 (dBm)	IP2 (dBm)	IF Freq. (MHz)	VSWR IF (:1)
RF	LO	LO +21dBm	LO +21dBm	LO +21dBm	LO +21dBm	LO +21dBm	LO +21dBm	LO +21dBm	LO +21dBm	LO +21dBm
263.60	336.60	6.86	56.36	40.04	1.36	4.43	30.78	70.53	10.00	1.14
295.30	368.30	6.90	58.28	39.90	1.36	4.54	31.20	70.77	41.70	1.10
327.00	400.00	7.01	56.66	39.10	1.36	4.75	30.63	66.84	73.40	1.17
367.00	440.00	6.91	54.07	37.65	1.33	3.38	32.15	65.28	105.10	1.25
407.00	480.00	7.01	53.48	38.10	1.32	3.59	31.30	60.99	136.80	1.30
487.00	560.00	7.11	50.85	38.26	1.28	2.61	33.82	63.96	200.20	1.42
527.00	600.00	7.24	47.68	37.36	1.27	2.37	33.56	64.16	231.90	1.50
567.00	640.00	7.42	46.99	37.73	1.26	2.07	34.15	59.84	263.60	1.57
607.00	680.00	7.54	45.44	36.77	1.26	2.17	33.70	60.56	295.30	1.66
647.00	720.00	7.58	43.92	35.61	1.26	1.92	34.92	58.31	327.00	1.76
687.00	760.00	7.56	43.00	35.27	1.27	2.35	35.35	60.45	367.00	1.85
767.00	840.00	7.50	43.00	36.38	1.33	2.68	33.34	59.13	447.00	2.12
807.00	880.00	7.61	43.56	37.66	1.36	2.23	33.60	60.43	527.00	2.35
847.00	920.00	7.89	44.73	40.20	1.39	2.88	32.28	57.83	967.00	2.51
1007.00	1080.00	8.31	40.03	43.62	1.59	2.19	31.58	55.31	1007.00	2.63

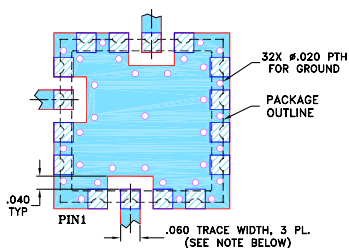
### Outline Drawing



### Outline Dimensions (inch/mm)

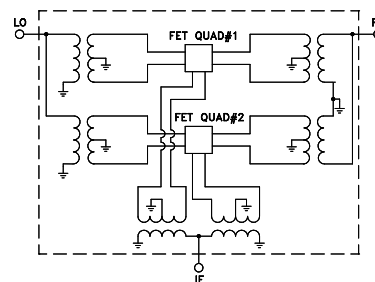
A	B	C	D	E	F	G	H	J	K
.500	.500	.180	.100	.080	.115	.060	.040	.540	.060
12.7	12.7	4.572	2.54	2.032	2.921	1.524	1.016	13.72	1.524
L	M	N	P	Q	R	S	T	wt.	
.100	.135	.135	.115	.140	.070	.150	.070	grams	
2.54	3.429	3.429	2.921	3.556	1.778	3.81	1.778	1.0	

### Demo Board MCL P/N: TB-433+ Suggested PCB Layout (PL-012)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.  
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
  - DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

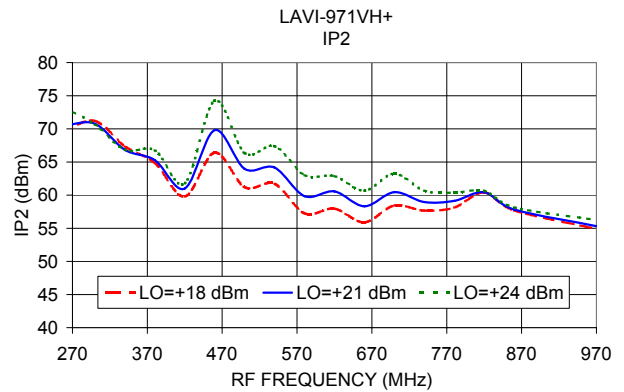
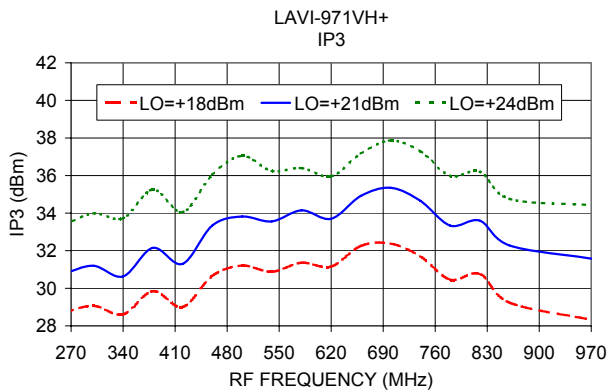
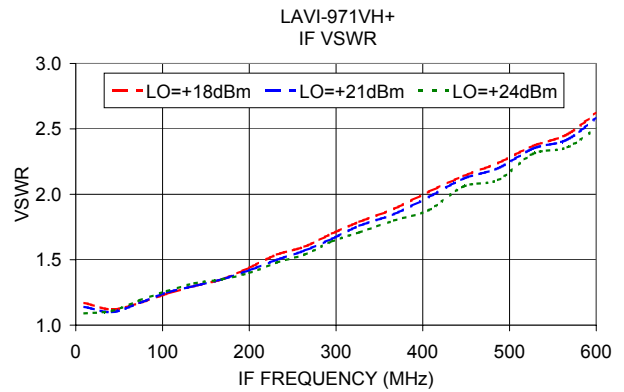
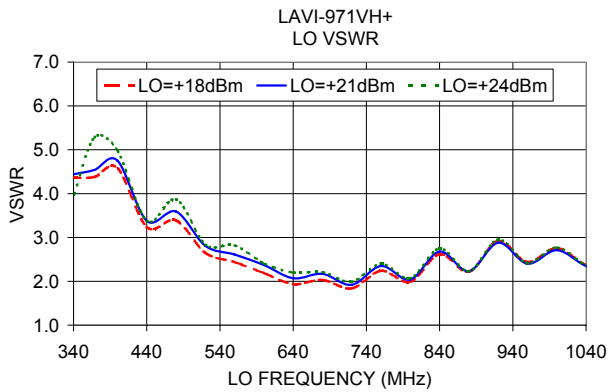
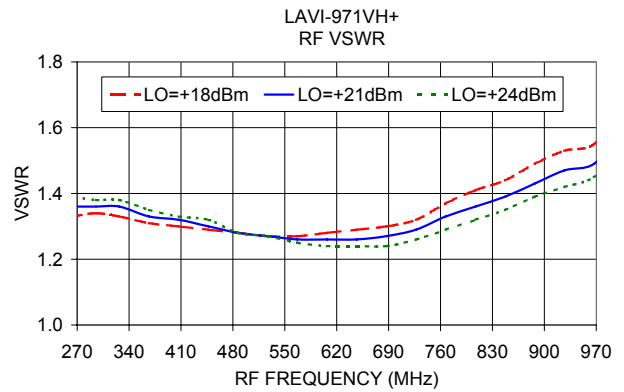
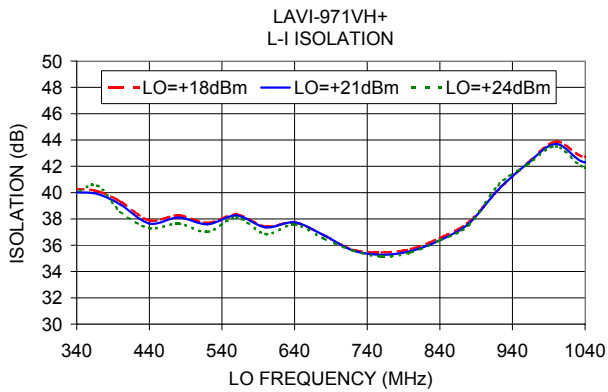
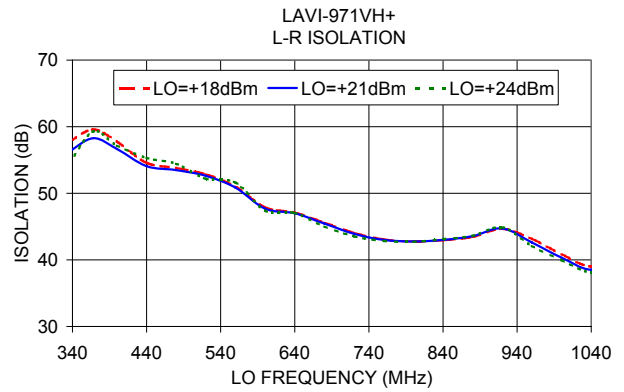
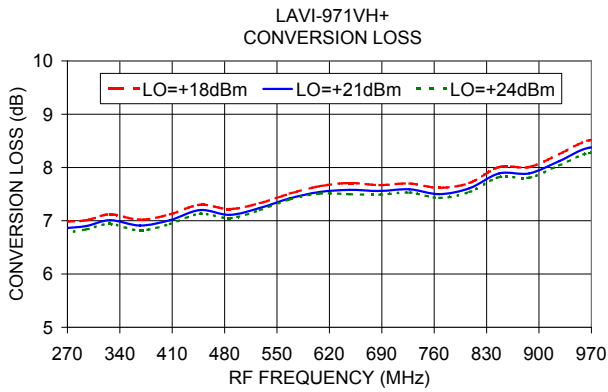
### Electrical Schematic



### Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.  
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.  
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