CATV RF SYSTEM

LH24 series FTTH CATV & SAT-TV Optical Receiver

LH24 series FTTH CATV & SAT-TV Optical Receiver with high-performance and high-index. 47~2400MHz operate bandwidth. Output level Vo=86dBμV (Pin=-2dBm), suitable for FTTH, FTTP fiber access network. It is a low power consumption, high performance and excellent cost performance CATV & DBS network ONU(Optical network unit).It has high sensitivity receiving tube and special low noise matching circuit. Under 3.8% modulation, when transmitting in full channels and with receiving power of −8 dBm, the CNR can still reach high index of 48 dB and low inter modulation index. It is only need very low optical power to reach 48dB CNR.

FEATURES

- Extra low noise (3.8% modulate,-8dBm receiving, CNR≥48dB)
- In high operating wavelength 47-2400MHz, adopting CATV & SAT-IF signal transmitting
- Extra-low inter modulation indicators
- High output level (Pin=-2dBm, Vo=86dBμV)
- In range of 47- 2400MHz, all have good flatness
- Metal shell, supply safeguards to opt electrical sensing device
- Low power consumption, high cost performance

SPECIFICATIONS

Optic Features		Min	Typ.	Max	Supplement
CATV wavelength	nm	1260	-	1620	LH24- NC
		1540	1550	1560	LH24- WF, LH24- WD
Input wavelength	nm		1310, 1490/1550		LH24- WF, LH24- WD
Pass wavelength	nm	1260	1310	1360	LH24- WF, LH24- WD
		1480	1490	1500	LH24- WF, LH24- WD
Insertion loss - Pass CH	dB			0.4 (*1)	LH24- WF, LH24- WD
Insertion loss - Reflection CH	dB			0.3 (*1)	LH24- WF, LH24- WD
Isolation - pass CH	dB	40	45		LH24- WF, LH24- WD
Isolation - Reflection CH	dB	20	25		LH24- WF, LH24- WD
Responsivity	A/W	0.85 / 0.9			*1310nm / 1550 nm*
Receiver power range	dBm	+2		-10	Analog TV
	dBm	+2		-19	Digital TV
	dBm	+2		-15	SAT TV
Optical return loss	dB	55			
Optical connector		SC/APC (LH24- NC , LH24- WF) ; LC/APC (LH24- WD)			
RF feature					
Work bandwidth	MHz	47		2400	
Flatness	dB	-1 / -2		+1 / +2	47~862MHz / 950~2400MHz
Output level (Pin=-2dBm)	dBμV		86 / 84		LH24- NC/ LH24- WD
Return loss	dB	14 / 8			47~862MHz / 950~2400MHz
Output impedance	Ω		75		
Number of RF output port			1		47~2400MHz
RF connectort			F-female		
Analog TV link feature					
Test channel	CH		59CH (PAL-D)		NTSC/80CH
OMI	%		3.8		
CNR1 (Pin=-2dBm)	dB	55 / 54			LH24- NC / LH24- WD
CNR2	dB	48 / 473			LH24- NC / LH24- WD
CTB	dB			-65 / -70	Pin= 0 dBm / Pin= 5 dBm

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CSO	dBdB		-65 / -69	Pin= 0 dBm / Pin= 5 dBm
HUM	dB		-60	
Digital TV link feature				
Test channel	dB	<10 CH		Analog
	dB	Digital QAM		47-862MHz
*MER (*2)*	dB	37		Pin : +2.0~-10dBm
	dB	33		Pin >-14.0dBm
*BER (*2)*	dB		1.0E-9	Pin : +2~-19dBm
General feature				
Power supply	V	+12		
Power current	mA	180	200	
Work temp	℃	-20	+60	
Storage temp	℃	-40	+85	
Work relative humidity	%	5	59	
Size	mm	59 W x 98 D x 23 H		
Status indicator		0~-10dBm: Green ; >0dBm & <-10dBm : Red		

Remark 1: Without optical fiber connector
2: digital TV test signal ： MER ： 38.6dB 、BER ： <1.0E-9

TEST DATA

- ANALOG TV TEST DATA (PIN: +2DBM ~ -10DBM)

Pin(dBm)	*+2*	*+1*	*0*	*-1*	*-2*	*-3*	*-4*	*-5*	*-6*	*-7*	*-8*	*-9*	*-10*
Vo(dBμV)	*94.2*	*92.2*	*90.4*	*88.2*	*86.2*	*84.5*	*82.5*	*80.4*	*78.3*	*76.2*	*74.5*	*72.4*	*70.2*
CNR(dB)	*59.5*	*58.3*	*57.3*	*56.4*	*55.5*	*54.4*	*53.3*	*52.2*	*51*	*49.6*	*48.1*	*46.6*	*44.9*
CTB (dB)	*58.1*	*65.2*	*68.1*	*70.2*	*69.7*	*71.3*	*72.2*	*71.7*	*71.1*	*72*	*71.6*	*69*	*66.6*
CSO(dB)	*60*	*62*	*65*	*66.9*	*67.7*	*68.3*	*68.6*	*69.4*	*68*	*71.4*	*69.9*	*68.9*	*66.9*

Remark: 1. testing signal： PAL-D 59CH, OMI = 3.8%

- DIGITAL TV TEST DATA (PIN: +2DBM ~ -19DBM)

Pin(dBm)	*Vo(dBμV)*	*MER*	*BER - POST*	*BER - PRE*	*Pin(dBm)*	*Vo(dBμV)*	*MER*	*BER - POST*	*BER - PRE*
+2	*94.1*	*38.5*	*<1.0E-9*	*<1.0E-9*	*-10*	*70.4*	*37.1*	*<1.0E-9*	*<1.0E-9*
+1	*92.5*	*38.4*	*<1.0E-9*	*<1.0E-9*	*-11*	*68.3*	*36.5*	*<1.0E-9*	*<1.0E-9*
+0	*90.1*	*38.4*	*<1.0E-9*	*<1.0E-9*	*-12*	*66.5*	*35.8*	*<1.0E-9*	*<1.0E-9*
-1	*88.4*	*38.4*	*<1.0E-9*	*<1.0E-9*	*-13*	*64.4*	*34.8*	*<1.0E-9*	*<1.0E-9*
-2	*86.5*	*38.4*	*<1.0E-9*	*<1.0E-9*	*-14*	*62.2*	*33.4*	*<1.0E-9*	*<1.0E-9*
-3	*84.3*	*38.4*	*<1.0E-9*	*<1.0E-9*	*-15*	*60.1*	*31.8*	*<1.0E-9*	*<1.0E-9*
-4	*82.4*	*38.3*	*<1.0E-9*	*<1.0E-9*	*-16*	*58.6*	*30.2*	*<1.0E-9*	*<1.0E-9*
-5	*80.5*	*38.3*	*<1.0E-9*	*<1.0E-9*	*-17*	*56.5*	*28.5*	*<1.0E-9*	*1.7E-7*
-6	*78.5*	*38.2*	*<1.0E-9*	*<1.0E-9*	*-18*	*54.3*	*36.3*	*<1.0E-9*	*1.1E-5*
-7	*76.2*	*38.1*	*<1.0E-9*	*<1.0E-9*	*-19*	*52.2*	*24.4*	*<1.0E-9*	*2.9E-4*
-8	*74.6*	*38.0*	*<1.0E-9*	*<1.0E-9*					
-9	*72.7*	*37.6*	*<1.0E-9*	*<1.0E-9*					

Remark: 1. testing signal：MER：38.6(dB)、BER：<1.0E-9
2. Channel load：<10CH Analog TV , Digital QAM
3. Test model: LH24-NC

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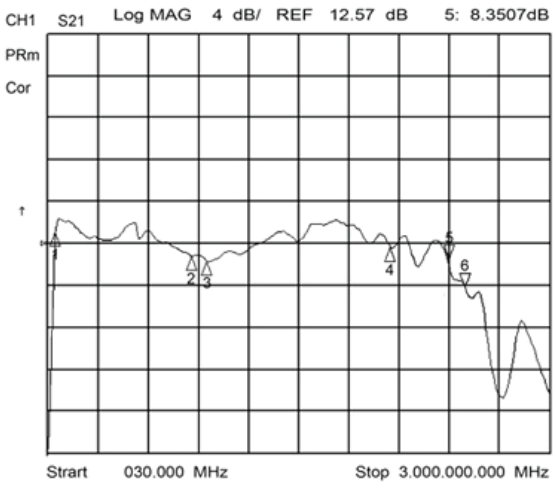
ANALOG TV, DIGITAL TV, SAT-TV, ALL HAVE EXCELLENT FEATURES

- Analog TV: (59CH PAL-D, 3.8% modulation)
  Pin=-10dBm,CNR≥44dB
  Pin=0dBm, CTB ≤ -65dB, CSO ≤ -65dB
  Digital TV: (The original signal MER=38.6dBm, BER<1.0E-9)
  Pin=-14dBm, MER≥33dB (MER deterioration5dB)
  Pin=-19dBm, BER<1.0E-9
  SAT-TV: (The original signal =64%)
  Pin=-15dBm, signal quality>38%

- Large dynamic range of received optical power, high receiving sensitivity :
  Analog TV: +2dBm~ -10dBm
  Digital TV: +2dBm~ -19dBm
  SAT-TV: +2dBm~ -15dBm

STATUS INDICATOR



1: Mkr	(MHz)	dB
1:	47.00	13.642
2:	862.00	11.325
3:	950.00	10.881
4:	2050.00	12.235
5:	2400.00	10.864
6:	2500.00	8.3507

Remark: 1. CNR Original signal: 59CH PAL-D, OMI=3.8%
2. Digital TV test signal: MER=38.6dB、BER<1.0E-9
3. SAT-IF test signal: 64%

ORDERING INFORMATION

PN	
LH24-NC	LH24 series FTTH CATV & SAT-TV Optical Receiver - RFTV operating wavelength 1260～1620nm.
LH24-WF	LH24 series FTTH CATV & SAT-TV Optical Receiver - Build-in channel filter, RFTV operating wavelength 1550nm.
LH24-WD	LH24 series FTTH CATV & SAT-TV Optical Receiver - Build-in CWDM, RFTV operating wavelength 1550nm, pass wavelength 1310/1490nm, (Link EPON 、GPON ONU)

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