AFK1000 SERIES

Low power SNMP AGC
FTTB Optical Receiver

Technical parameter

CONTENTS

1.0 PRODUCT OVERVIEW

AFK1000 product series, is a low power consumption, high index, with SNMP network management, AGC, full function FTTB optical receiver. 1000 series' shells are aluminum wall hung (without rain-proof), Nixie tube displaying parameters.

AFK1000 series have many kinds of configurations can be optional:

1. Operation bandwidth: AFK1000-086 operation bandwidth 47~862MHz
   AFK1000-100 operation bandwidth 47~1050MHz
2. RF output ports:AFK1240, two RF output ports, each 100dBμV
   AFK1144, one RF output port, with 104 dBμV
3. SNMP network management can be optional (AKF100/N, and can achieve remote control.
4. Built-in CWDM can be optional, multiplex 1310/1490nm data stream
5. Built-in power supply or external power supply can be optional, external power supply is convenience to repair.

2.0 PRODUCT FEATURE

- Excellent AGC performance: Pin: –7.0dBm~+2dBm ΔVo : ≤±0.5dB
- Low noise (3.8% modulation, -8dBm receive, CNR≥46dB)
- Output level and slope can continuation adjustment
- High level output: one output port 104 dBμV (AGC, PAD=6dBm), max ouput level 110dBμV (PAD=0dBm)
  Two output ports 100 dBμV (AGC, PAD=6dBm), max output level 106 dBμV (PAD=0dBm)
- SNMP network management optional, can achieve remote management and control
- Nixie tube displaying all kinds of technical parameters of the overall unit, convenience to construction a nd adjustment
- Adapts MMIC Amplifier, low power consumption
- The industry's most excellent price performance

3.0 TECHNICAL INDEX

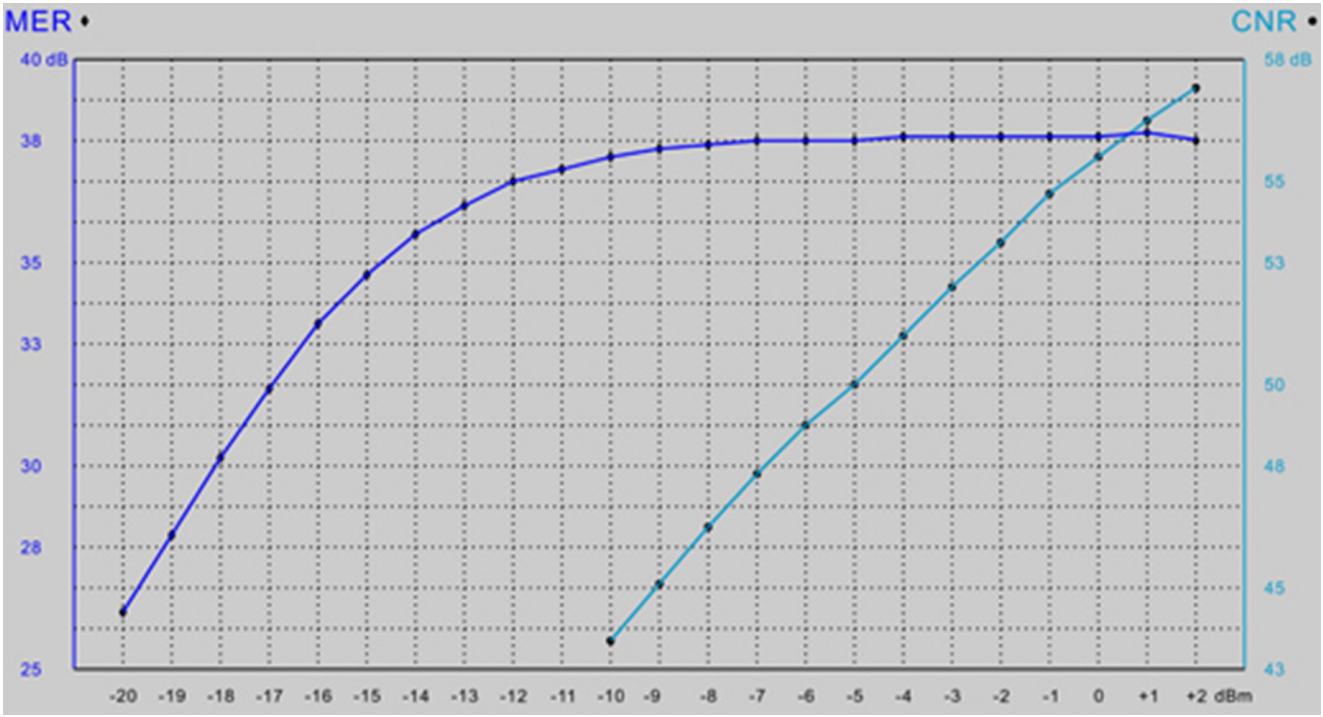
Perfomance			Index	Supplement
Optical Feature	CATV Operation wavelength	(nm)	1260~1620	Without CWDM
			1540~1560	AFK-1000-WD, AFK-1000-WF
	Input wavelenght	(nm)	1310,1490/1550	
	Pass wavelength	(nm)	1310, 1490	
	Channel Isolation	(dB)	>40	
	Responsivity	(A/W)	>0.85	1310nm
			>0.9	1550nm
	Optical AGC control	(dBm)	-7~+2	Δ Vo≤±0.5dB
	Receiving power	(dBm)	-10 ~+2	Analog TV
			-16~+2	Digital TV
	Optical return loss	(dB)	≥50	
	Optical fiber connector		SC/APC	LC/APC, FC/APC Optional
RF Feature	Work bandwidth	(MHz)	47 ~ 862	AFK1000 / x-086
			47~1050	AFK1000 / x-100
	Flatness	(dB)	≤±0.75	AFK1000/x-086 (47~862MHz)
			≤±1.0	AFK1000/x-100 (47~1050MHz)
	RF number of output port	(ps)	1	AFK1144
			2	AFK1240
	Nominal Output level	(dBμV)	100	AFK1240
			104	AFK1144
	Max Output level	(dBμV)	106	AFK1240
			110	AFK1144
	ALC feature	(dB)	≤±0.5	Pin: -7.0~ +2.0dBm
	EQ ADJ	(dB)	0~15	
	Output level adjust	(dB)	-20~0	
	Return loss	(dB)	≥16	47 ~ 862MHz
			≥12	47 ~ 1050MHz
	Output impedance	(Ω)	75	
	RF port		F-Female	
Analog TV Connect Feature	Test channel		59CH(PAL-D)	47-550MHz Analog
			Digital QAM	550-862 MHz
	OMI	(%)	3.8	
	CNR1	(dB)	53.5	Pin = -2.0dBm
	CNR2	(dB)	47.8	Pin = -7.0dBm
	CTB	(dB)	≤-63	Pin = -2.0dBm
	CSO	(dB)	≤-67	Pin = -2.0dBm
	HUM	(dB)	≤-60	
Digital TV Connect Feature	Test channel		<10 CH	Analog
			Digital QAM	47-862MHz
	MER	(dB)	38 (Remark1)	Pin : -7.0~+2.0dBm
			33.5	Pin = -16.0dBm
	PRE	(dB)	<1.0E-9	Pin : -20.0~+2.0dBm

General Feature	Power supply	(V)	AC(130~265)V	Built-in power
			DC:8V, 0.75A	External power
	Power Consume	(W)	≤15	
	Work temp	(°C)	-40~60	
	Storage temp	(°C)	-40~65	
	Relative humidity	(%)	5 ~ 59	
	Size (W)×(D)×(H)		6.8×4.8×1.7(¨) 174×123×42(mm)	Built-in power
			4.8×4.8×1.7(¨) 118×123×42(mm)	External power

Remark: 1. CATV test signal: MER: 38.3dB, BER: <1.0E-9

4.0 TEST DATA

4.1 CNR, MER degradation



Remark: 1. CNR Original signal:59CH PAL-D, OMI=3.8%
2. Digital TV test signal: MER=38.3dB, BER<1.0E-9

4.2 ANALOG TV TEST DATA (Pin=+2.0dBm~10.0dBm)

Pin(dBm)	+2	+1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Vo(dBμV)	100.4	100.2	100.8	100.0	99.7	100.2	100.3	100.2	100.1	100.3	99.1	97.2	95.0
CNR(dB)	57.3	56.5	55.6	54.7	53.5	52.4	51.2	50.0	49.0	47.8	46.5	45.1	43.7
CTB(dB)	62.4	62.8	63.0	63.1	63.1	63.1	64.7	63.5	66.0	66.4	63.7	65.7	66.6
CSO(dB)	62.5	63.1	63.8	67.4	67.0	70.7	69.9	68.5	66.3	69.5	64.7	63.1	67.5

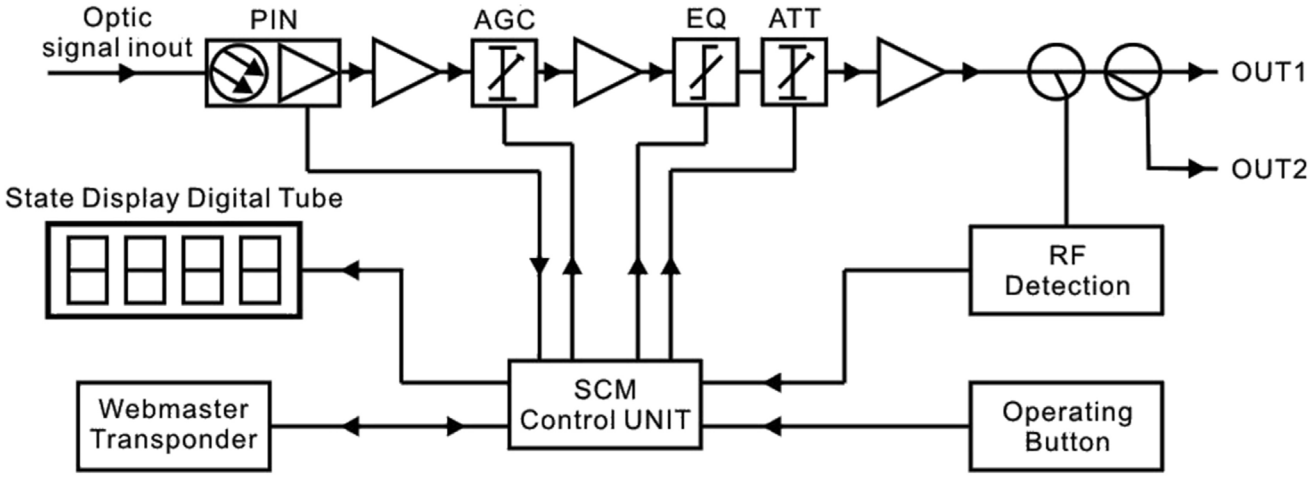
Remark1. Test condition: 1. PAL-D59CH, OMI=3.8%
2. Test type: BGL1240
3. Built-in PAD=6dB

4.3 DIGITAL TV TEST DATA (Pin=+2.0dBm~20.0dBm)

Pin(dBm)	Vo(dBμV)	MER	BER		Pin(dBm)	Vo(dBμV)	MER	BER	
			POST	BRE				POST	BRE
+2.0	101.8	38.0	<1.0E-9	<1.0E-9	-10	96.9	37.5	<1.0E-9	<1.0E-9
+1.0	101.1	38.2	<1.0E-9	<1.0E-9	-11	94.7	37.3	<1.0E-9	<1.0E-9
0	101.7	38.1	<1.0E-9	<1.0E-9	-12	92.8	37.0	<1.0E-9	<1.0E-9
-1.0	101.8	38.1	<1.0E-9	<1.0E-9	-13	91.0	36.4	<1.0E-9	<1.0E-9
-2.0	101.7	38.1	<1.0E-9	<1.0E-9	-14	88.7	35.7	<1.0E-9	6.6E-7
-3.0	101.3	38.1	<1.0E-9	<1.0E-9	-15	87.0	34.7	<1.0E-9	3.7E-5
-4.0	101.1	38.1	<1.0E-9	<1.0E-9	-16	85.1	33.5	<1.0E-9	2.2E-4
-5.0	101.2	38.0	<1.0E-9	<1.0E-9	-17	83.2	31.9	<1.0E-9	4.9E-4
-6.0	101.1	38.0	<1.0E-9	<1.0E-9	-18	81.1	30.2	<1.0E-9	8.0E-4
-7.0	100.8	38.0	<1.0E-9	<1.0E-9	-19	79.0	28.3	<1.0E-9	1.1E-3
-8.0	100.8	37.9	<1.0E-9	<1.0E-9	-20	76.9	26.4	<1.0E-9	1.5E-3
-9.0	98.7	37.8	<1.0E-9	<1.0E-9					

Remark: 1. Test signal: MER: 38.3(dB), BER: <1.0E-9.
2. Channel negative nuclear :<10CH Analog TV , Digital QAM

5.0 FUNCTIONAL BLOCK DIAGRAM



6.0 FUNCTION DISPLAY AND OPERATION

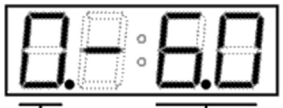
Mode: The control mode choice button , all 1 modes

▼ : UP button, increase the attenuation or equilibrium quanity on ATT or EQ mode.

▲ : Down button, Increase the attenuation or equilibrium quantity on ATT

Following diagram to explain for detailed:

Mode 0:

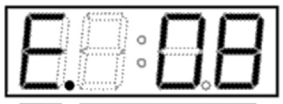


Input power (unit:dBm)

LO Mean optical power lowor without optical power

0 Mean displaying optical power

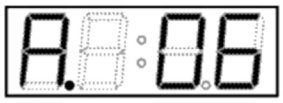
Mode E:



Can with "▲"or "▼"button adjust RF equilibrium quantity

E EQ model: means controlled and displayed is RF channel equilibrium quanity

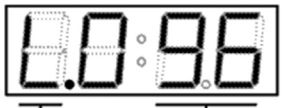
Mode A:



Can with "▲" or "▼" button adjust RF decrement

A ATT model: means controlled and displayed is RF channel decrement quanity

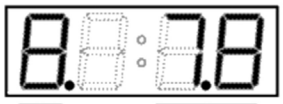
Mode L:



RF output level (Unit: dBμV)

L Show the current system RF output level

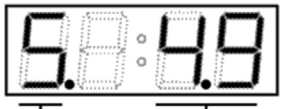
Mode 8:



+8V Actual valut of working voltage

8 Shows +8V practical voltage

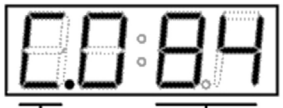
Mode 5:



+5V Actual valut of working voltage

5 Shows +5V practical voltage

Mode C:



Input the actual channels of current network, can adjust by "▲" or "▼" button, the max input channels are 200

C This menu is for inputing the actual channels of current network system, to work out the RF output level precisely of the machine.

7.0 PRODUCT SERIES

Type	Oupout port	Output level	SNMP	Work bandwidth	CWDM
AFK1240 / O-086-NC	Dual ports	100 dBμV	Without	47~862MHz	Without
AFK1144 / O-086-NC	Single port	104 dBμV			
AFK1240 / N-086-NC	Dual ports	100 dBμV	With		
AFK1144 / N-086-NC	Single port	104 dBμV			
AFK1240 / O-086-WD	Dual ports	100 dBμV	Without		With
AFK1144 / O-086-WD	Single port	104 dBμV			
AFK1240 / N-086-WD	Dual ports	100 dBμV	With		
AFK1144 / N-086-WD	Single port	104 dBμV			
AFK1240 / O-100-NC	Dual ports	100 dBμV	Without	47~1050MHz	Without
AFK1144 / O-100-NC	Single port	104 dBμV			
AFK1240 / N-100-NC	Dual ports	100 dBμV	With		
AFK1144 / N-100-NC	Single port	104 dBμV			
AFK1240 / O-100-WD	Dual ports	100 dBμV	Without		With
AFK1144 / O-100-WD	Single port	104 dBμV			
AFK1240 / N-100-WD	Dual ports	100 dBμV	With		
AFK1144 / N-100-WD	Single port	104 dBμV			