



Specification
of
1Ru CATV 1310nm Forward DFB Transmitter
FTX-1U1310xxxxUM Series



Universal Microelectronics
Photonics Division
Catalog 2008~ 2009

**1Ru CATV 1310nm Forward DFB Transmitter****Features**

- (DFB) laser with integrated optical isolator
- 19" standard 1U rack design
- Bandwidth 45~870MHz
- 6/8/10/13/16/20 mW optical output power
- AGC/MGC
- RF input test point
- LCD display/control functions
- LED status indicator lights
- Support NTSC-79 / PAL-64Channels

Applications

- Cable TV

1. Optical Performance

	Item	Spec.	Unit
1.1	Optical Wavelength	1310±20	nm
1.2	Optical Output Power	04 , 06 , 08 , 10 13 , 16 , 20	mW

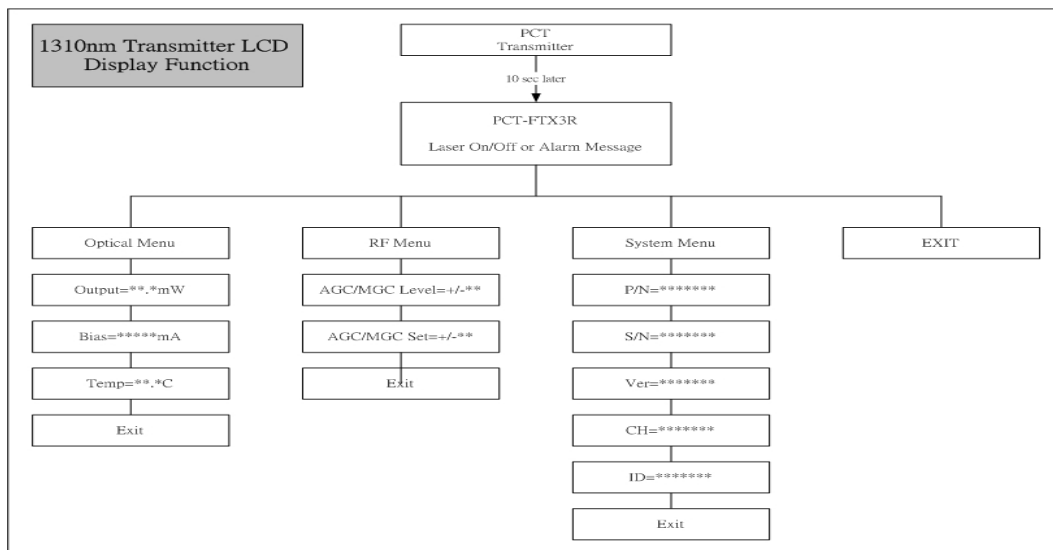
2. RF Performance (45 ~ 870MHz)

	Item	Spec.	Unit
2.1	RF Input Return Loss	≥ 16	dB
2.2	RF Flatness	≤ 1.5	dB
2.3	AGC±5dB RF Variation	≤ 1.0	dB



3. Monitor Port Performance

	Item	Spec.	Unit
3.1	LCD	2x16	characters
3.2	RF Monitor Point Value	-20	dB
3.3	RF Monitor Point Accuracy	± 1	dB



4. RF Link Performance (NTSC – 79 Channels)

	Item	Spec.	Unit
4.1	RF input range	20 \pm 5	dBmV/ch
4.2	CNR	≥ 51.0	dB
4.3	CSO	≥ 63.0	dB
4.4	CTB	≥ 67.0	dB
4.5	XMOD	≥ 65.0	dB

*1. Test Condition: Room temperature: 25°C, Optical link (fiber 10 km + attenuator), Receiver input power: -1dBm



5. C/N Link Budget Table

C/N Typical Value

Output Power	Link Loss (dB)										
	5	6	7	8	9	10	11	12	13	14	15
4mW (6dBm)	53	52	51	50							
6mW (8dBm)			53	52	51	50					
8mW (9dBm)				53	52	51	50				
10mW (10dBm)					53	52	51	50			
13mW (11dBm)						53	52	51	50		
16mW (12dBm)							53	52	51	50	
20mW (13dBm)								53	52	51	50
CSO \leq -63dB	CTB \leq -67dB			XM \leq -65dB							

- Test Condition: Room temperature: 25°C, Optical link (fiber 10 km + attenuator)

6. Electrical/Environmental/Physical

Item	
5.1	AC Power : AC , 90 to 260VAC , 50/60Hz
5.2	Control Interface : RS-232 and RS-485
5.3	Operating Temperature : 0°C to 50°C
5.4	Storage Temperature : -20°C to 70°C
5.5	Humidity : max 85% non-condensing
5.6	Dimensions : 483 W x 44 H x 392 D (mm)
5.7	Weight : 4.8kg



7. RS485/RS232 Command Definition

When using RS-232 or 485 communications, the Commands and Responses protocol are as follows:

Note that “Commands” must be in all capital letters. The letters “xxxx” represent the unit’s ID-CODE. When using RS-232, just key in the ID-CODE directly.

7.1 Command Types

Com. Type	Description	Format	Response
B	Returns Tx status in binary format	Hex 1a	See Table 1: B type command response
C	Returns alarm message in binary format	Hex 1c	See Table 2: C type command response
D	Set Parameter	Hex 1b	See Table 3: D type command response

7.2 RS485 RS232 define pin

RS485		RS232	
Pin 1	NC	Pin 1	NC
Pin 2	TR+	Pin 2	TX
Pin 3	RX+	Pin 3	RX
Pin 4	TR-	Pin 4	NC
Pin 5	RX-	Pin 5	GND
Pin 6	NC	Pin 6	NC
Pin 1	NC	Pin 7	NC
		Pin 8	NC
		Pin 9	NC



7.3 B type command response

Byte #	Content	Translation formula	Remark
0	<C0>		Leading marker (C0 in hexadecimal)
1	Laser power	1=0.2mW	Range : 0-255
2	Laser temperature	1=0.4C	Range : 0-255
3	Laser bias current	1=2 mA	Range : 0-255
4	RF modulation level	Scalar	Range: (nagtive99) to 99
5	reserve		
6	+12V	102=12V	Range : 0-255
7	+5V	102=5V	Range : 0-255
8	-5V	102=-5V	Range : 0-255
9	Gain control mode	Bit 0:0=MGC 1=AGC Bit 1:pilot tone 0=off,1=0n bit 2:alarm buzzer 0=0ff 1=on	
10	AGC setting level	Scalar	Range: (nagtive99) to 99
11	MGC setting level	Scalar	Range: (nagtive99) to 99
12	Firmware version, major	Binary (0-255)	Major revision number (equivalent to the first digit in display format)
13	Firmware version, minor	Binary (0-255)	Minor revision number (equivalent to the last two digits in display format)
14	Laser Status	B0=0 Shutdown B0=1 Normal	
15	(CR)	Hex 0d	End mark

Table: B type command response



Note: when use RS485,make sure enable RS485 function by short RS232 DB9 pin 7 & pin8.

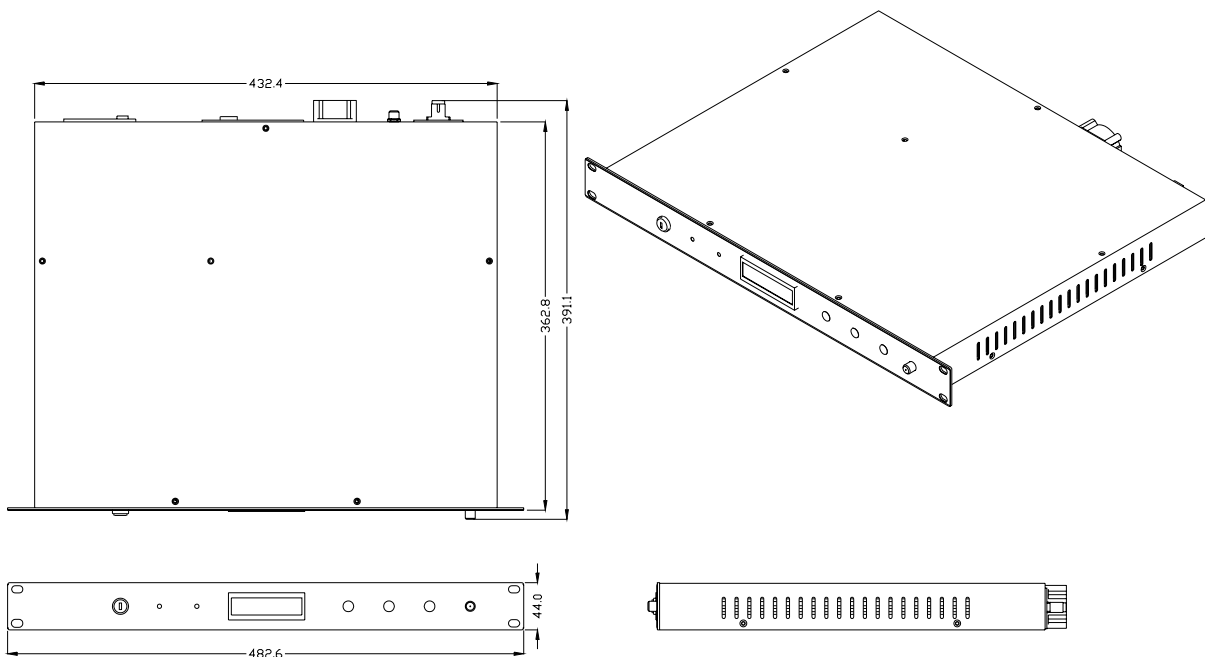
Note: Each command send through Host, should add ID address(4 bytes),Id address is indicate in panel Id no last 4 digits.

EX: panel id code is “030520003”

RS232/RS485 should send following command “0x1a 0x30 0x30 0x30 0x33”.

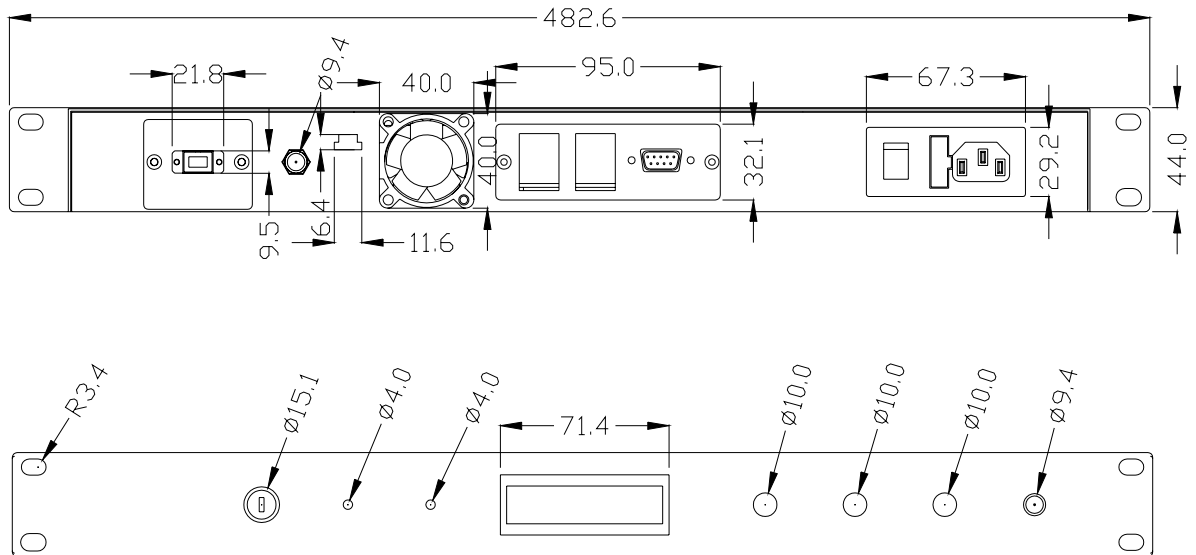
Command or address invalid will neglect.

8. Housing Dimension

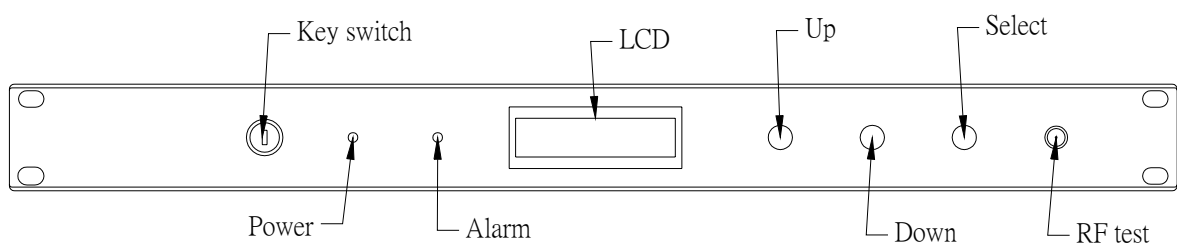




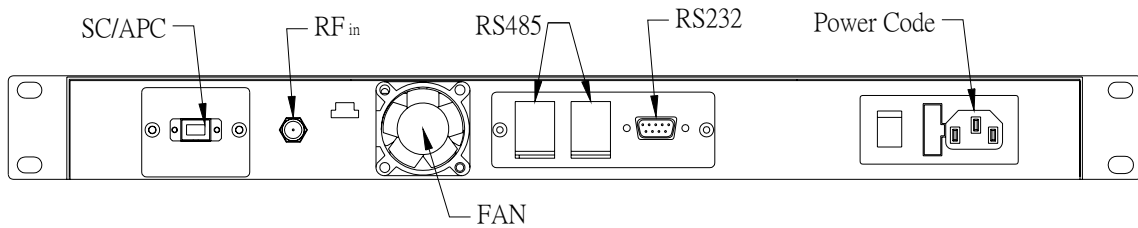
9. External Components Dimension



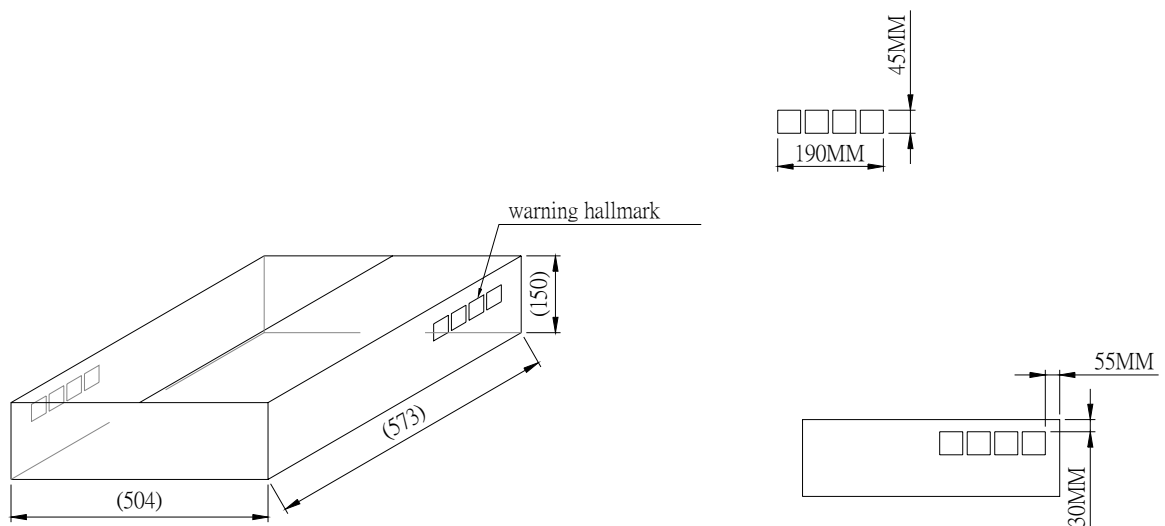
10. Front Panel



11. Rear Panel

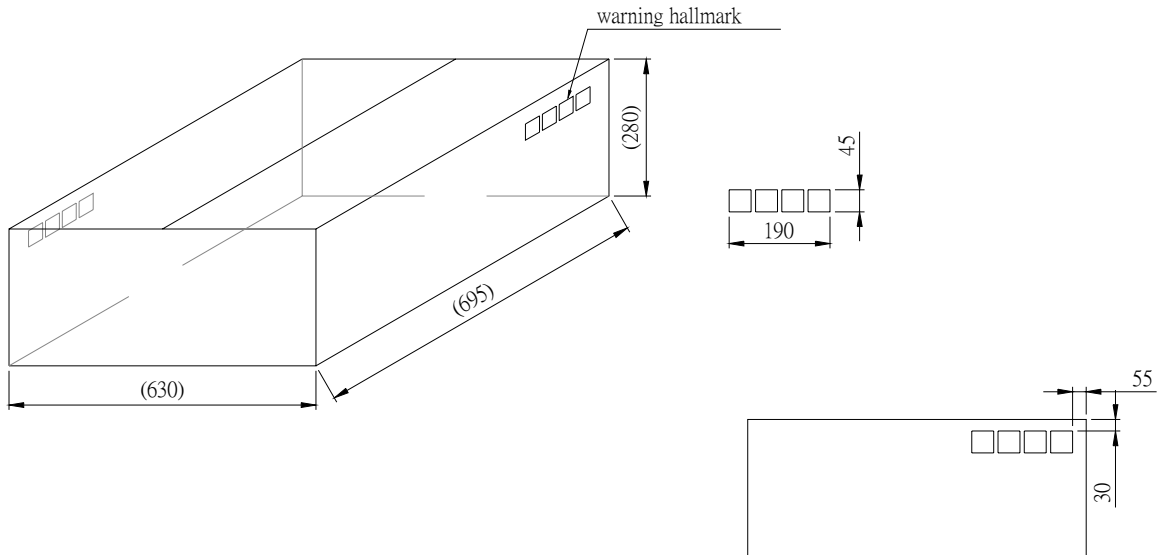


12. Internal Package Carton Dimension

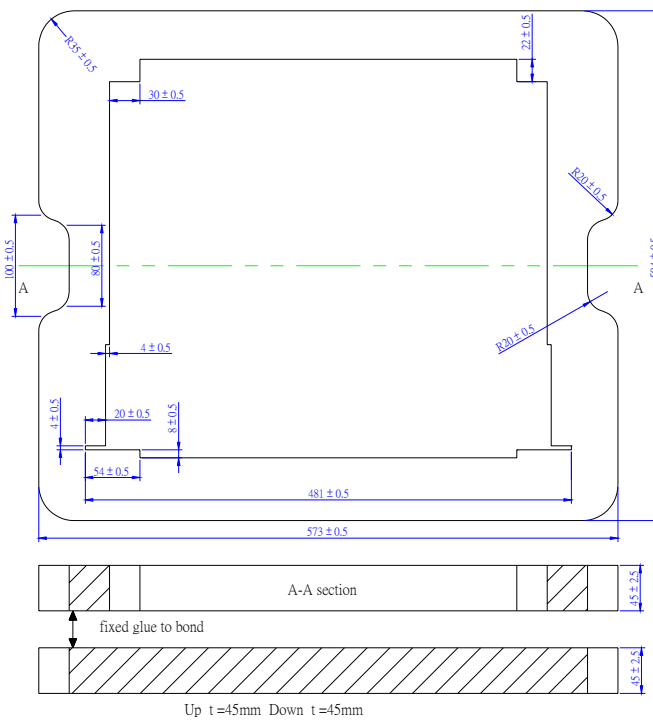




13. External Package Carton Dimension

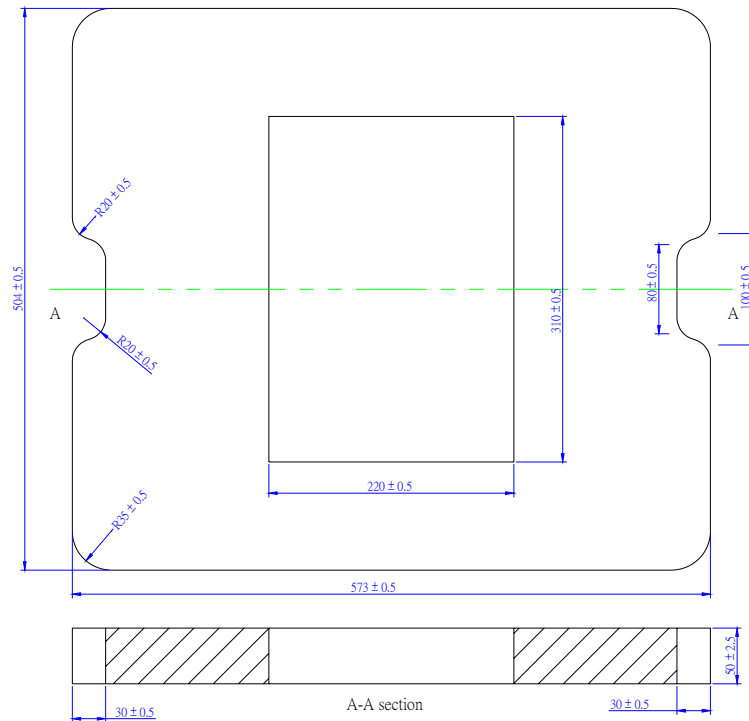


14. Package Buffer Dimension





15. Package Buffer Cover Dimension



16. Package List

No	Item	Amount
1	Transmitter	1
2	Laser Key	2
3	Power cord	1
4	Operating Manual	1
5	Desiccant	2
6	Antistatic Bag	1



Ordering Information

FTX-1U1310-XX-X-X-UM

