S P E C I F I C A T I O N

LG Innotek Co., Ltd.

A P P D.	C H K D.	D S G D.	MODEL NO	T A D C - H 2 0 7 F
			DOCUMENT NO	B C 4 0 3 1 0

S P E C I F I C A T I O N

I n d e x

					A P P D.	C H K D.	D S G D.	MODEL NO: TADC-H207F
								TITLE: SPECIFICATION
SYMB	NO	APPD	CHKD	DSGD				DOCUMENT NO: BC40310 (1/26)

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SYMB	NO	APPD	CHKD	DSGD				DOCUMENT NO: BC40310 (2/26)

1. Common

1- 1. Application

This specification applies to TMI type (RF Front-End system) for TV, VTR

1- 2. Structure

Refer to the attached assembly drawing.

1- 3. Circuit

Refer to the attached circuit diagram.

2. General specifications.

2- 1. Applicable broadcasting system

M NTSC / US CH

2- 2. Receiving system

Upper Heterodyne

2- 3. Intermediate frequency

Picture intermediate frequency : 45.75 MHz
Sound intermediate frequency : 41.25 MHz

2- 4. Receiving channel

VHF LOW : 2 ~ B Ch
VHF HIGH : C ~ W+11 Ch
UHF : W+12 ~ 69 Ch

2- 5. Output channel of modulator

US 3 / 4 Ch

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	Terminal NO. 2
3 Ch	OPEN
4 Ch	GND

2- 6. Input / Output condition

ANT nominal impedance
ANT IN : 75Ω unbalance
ANT OUT : 75Ω unbalance
Video in impedance : 0.7kΩ ~ 1.3kΩ (typ. 1kΩ)
Audio in impedance : 10kΩ min.
Control impedance : 30kΩ min. (typ. 100kΩ)
Video out load : 10kΩ
Audio out load : 100kΩ

2- 7. Operating temperature range

Temperature : -10℃ ~ +60℃
Humidity : less than 85%RH

2- 8. Storage temperature range

Temperature : -20℃ ~ +70℃
Humidity : less than 90%RH

2-9. Guarantee voltage for operation

Terminal	Supply voltage			
	min.	typ.	max.	unit
+B	4.8	5.0	5.2	Vdc
MB	4.8	5.0	5.2	
TU	29.0	32.0	34.0	
CONTROL(MD:ON)	4.8	5.0	5.2	

2-10. Maximum ratings

Terminal	Supply voltage	Unit
+B	6.0	Vdc
MB	6.0	
TU	35.0	
CONTROL(MD:ON)	6.0	

(note) Within "PB" supply voltage at SCL,SDA,terminal.

2-11. Current consumption

Terminal	Current consumption			
	min.	typ.	max.	unit
+B	-	150	180	mA
MB	-	50	56	
TU	-	1.5	5.0	
CONTROL(MD:ON)	-	47.0	173	μA

2-12. PLL characteristics of tuner section

2-12-1. I2C data format

	MSB							LSB	
Address byte	1	1	0	0	0	MA1	MA0	0	A
Divider byte 1	0	N14	N13	N12	N11	N10	N9	N8	A
Divider byte 2	N7	N6	N5	N4	N3	N2	N1	N0	A
Control byte	1	CP	0	0	0	R1	R0	0	A
B AND SW byte	0	0	0	0	BS3	BS2	BS1	BS0	A

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Where:

- A : Acknowledge bit
- Address Selection

"ADSW" 단자전압	MA1	MA0
0~0.1× PB	0	0
OPEN	0	1
0.4× PB ~ 0.6× PB	1	0
0.9× PB ~PB	1	1

- CP : Charge pump current (CP = 0 = 50μA, CP = 1 = 200μA)
- N14~ N0 : Programmable divider byte

$$N = N14 \times 2^{14} + N13 \times 2^{13} + --- + N1 \times 2^{1} + N0$$

- Band switching byte

	BS3	BS2	BS1	BS0
UHF	1	0	0	0
VHF HIGH	0	0	1	0
VHF LOW	0	0	0	1

2-12-2. Oscillator frequency calculation

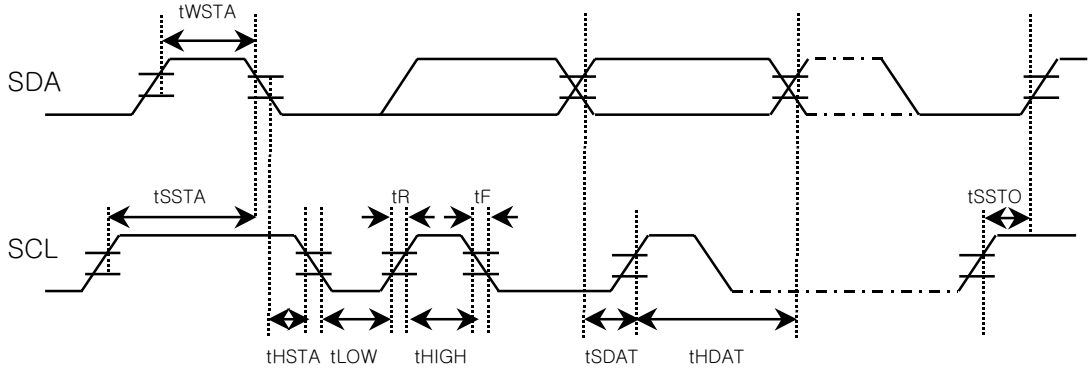
$Fosc = Fref \times 8 \times N$

- Fosc : Locked oscillator frequency
- Fref : 4㎒/512 = 7.8125㎑
- N : Oscillator frequency data

2-12-3. Input Signal Level (SCL, SDA)

INPUT Signal level	MIN	MAX	Unit
High level	3.0	5.5	V
Low level	-	1.5	

2-12-4 I²C BUS Time



		MIN	TYP	MAX	단 위
fSCL	SCL clock frequency	0		400	㎑
tWSTA	Start waiting time	1300			nsec
tHSTA	Start hold time	600			〃
tLOW	Low clock pulse width	1300			〃
tHIGH	High clock pulse width	600			〃
tSSTA	Start set-up time	600			〃
tHDAT	Data hold time	1300			〃
tSDAT	Data set-up time	600			〃
tR	Rise time			300	〃
tF	Fall time			300	〃
tSSTO	Stop set-up time	600			〃

2-13. Test condition

Terminal	Supply voltage	Unit	Remarks
+B	5 ± 0.1	Vdc	Ripple:10mVp-p max.
MB	5 ± 0.1	Vdc	
TU	32 ± 2	Vdc	
CONTROL	5 ± 0.1	Vdc	
Ambient temperature	25 ± 5	℃	
Relative humidity	65 ± 10	%RH	

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2-14. Measuring instruments

2-14-1. RF-modulator section

Audio analyzer	: 8903B	HP
Television demodulator	: 1450-1	TEKTRONIX
Spectrum analyzer	: 8568B	HP
Network analyzer	: 8752A	HP
TV pattern generator	: TG-7/1	SHIBASOKU
	3900N	NIHON TSUSHINKI
Video noise meter	: 925D/1	SHIBASOKU

2-14-2. IF section

TV pattern generator	: TG-7/1	SHIBASOKU
	TG2000	TEKTRONIX
IF modulator	: RM54A	SHIBASOKU
	146F	EIDEN
RF converter	: RC51B	SHIBASOKU
	458C-X	EIDEN
Video Measurement	: VM700A	TEKTRONIX
Audio Analyzer	: 8903B	HP

3. Electrical characteristics

The unit stated in dBμV is defined the value at 75Ω terminal in this specification. (0 dBm = 109 dBμV)

3- 1. RF-modulator section

Item	Specification				Note
	min.	typ.	max.	unit	
3-1- 1. Video modulation	75	80	85	%	Input signal : 1.0Vp-p white Measure at the output of the standard demodulator.
3-1- 2. Video limit modulation	87	93	99	%	Input signal : 1.5Vp-p stair-steps or ramp. Measure at the output of the standard demodulator.
3-1- 3. V/S ratio	10:3.8	10:4.0	10:4.1	-	Input signal :1.0Vp-p white V : S = 10 : 4 Measure at the output of the standard demodulator.
3-1- 4. Video amplitude frequency characteristics	-2.5	-0.5	+2.5	dB	Measure range : 0.1MHz ~ 4.2MHz Based on 1MHz
3-1- 5. Differential Gain (DG)	-	2	7	%	Input signal : 1.0Vp-p stair-steps Chrominance : 20 IRE Luminance : 0 ~ 90 %
3-1- 6. Differential Phase (DP)	-	2	7	deg	Input signal : 1.0Vp-p stair-steps Chrominance : 20 IRE Luminance : 0 ~ 90 %
3-1- 7. Video S/N	45	48	-	dB	Compensation of spectral luminance efficacy. RF output should be amped 12dB. (LGEC control method Measurement conditions. Measure at the out of the Standard demodulator. (TEKTRONIX 1450-1)

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Item	Specification				Note
	min.	typ.	max.	unit	
					S/N meter. (SHIBASOKU 925D-1 or 925C or equivalent) HPF : 100㎑, LPF : 4.2㎒ SC TRAP : ON, WEIGHT : OFF Input signals : Video : 100% white signal Audio : none Video band : 0.1㎒ ~ 4.2㎒
3-1- 8. Chroma beat (920㎑ P.C.S. beat)	55	65	-	dB	Input signal : 0.4Vp-p 3.58㎒ sine wave Use spectrum analyzer to measure the level of Fp + 0.92㎒ The value is relative to the level of Fp without video modulation.
3-1- 9. Audio modulation (deviation)	32 (64)	40 (80)	48 (96)	㎑ dev (%)	Input signal : -6.5dBs, (1.04Vp-p) 1㎑ sine wave (100 % modulation = ± 25㎑ dev.)
3-1-10. Audio maximum modulation	150 (300)	220 (440)	-	㎑ dev (%)	Input signal : 1㎑ sine wave The input should be adjusted to the level just before the saturation of the modulation.
3-1-11. Audio amplitude frequency characteristics	-3	+0.2 -0.6	+3	dB	Input signal : -6.5dBs, (1.04Vp-p) Measure range : 50Hz ~ 10㎑ Based on 1㎑
3-1-12. Audio distortion	-	0.5	2.0	%	Input signals : Audio : -6.5dBs (1.04Vp-p), 1㎑ sine wave Video : 1Vp-p color bar De-emphasis is on.(75μ sec)

					APPD.	CHKD.	DSGD.	MODEL NO: TADC-H207F
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Item	Specification				Note
	min.	typ.	max.	unit	
3-1-13. Audio S/N	48	54	-	dB	Input signals : Audio : -6.5dBs (1.04Vp-p), 1㎑ sine wave Video : All black (sync. only) Use standard demodulator of inter-carrier system. De-emphasis is on. (75μ sec)
3-1-14. Audio buzz	45	55	-	dB	Video input signal : 1Vp-p color bar Other conditions : same as item 3-1-13.
3-1-15. Video carrier output level	63.5	66.0	68.5	dBμV	Video input signal : 1Vp-p 100% white signal.
3-1-16. P/S ratio (sound carrier level)	-12.5	-14.5	-17	dB	Audio input signal : none Other conditions : same as item 3-1-15.
3-1-17. Video carrier frequency	-150	-	+150	㎑	Video input signal : none
3-1-18. Sound carrier frequency	4495	4500	4505	㎑	Audio input signal : none The measurements are taken after 1 min. from the power on.
3-1-19. Outband spurious	-	-	39.5	dBμV	Video input signal : 1Vp-p color bar Measure range : 0 ~ 1㎓ Except the range from Fp-4.6㎒ to Fp+7.4㎒.
	-	-	39.5	dBμV	Tuner local OSC leakage.
3-1-20. Inband spurious	60	-	-	dB	Input signals : Video : none Audio : none Measure range : Fp~Fp+4.5㎒.
3-1-21. Terminal leakage	-	-	54	dBμV	Measure range : 0 ~ 1㎓ except GND.

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3-1-22. Stability

3-1-22-1. Video carrier frequency rise up time.
The time to approach the set value ± 100㎑ : within 3 seconds

3-1-22-2. Audio carrier frequency rise up time.
The time to approach the set value ± 5㎑ : within 10 seconds

3-1-22-3. Video carrier frequency shift by supply voltage drift.
Within ± 10㎑ by ± 0.3V shift of the supply voltage.

3-1-22-4. Audio carrier frequency shift by supply voltage drift.
Within ± 3㎑ by ± 0.3V shift of the supply voltage.

3-1-23. Thermal Stability

3-1-23-1. Thermal stability of video modulation.
Within ± 4% based on the temperature of 25℃.

※ Unless otherwise specified, thermal stability tests shell be performed under the following conditions.

Measurement temperature range : -10℃ ~ 60℃

Humidity range : 45%RH ~85%RH

Test measurement order and time :
25℃ → -10℃(2H) → 10℃(1H) → 25℃(1H) → 45℃(1H) → 60℃(2H)

3-1-23-2. Thermal stability of video modulation.
Within ± 150㎑ based on the temperature of 25℃.

3-1-23-3. Thermal stability of audio modulation.
Within ± 20% based on the temperature of 25℃.

3-1-23-4. Thermal stability of video modulation.
Within ± 10% on the temperature of 25℃.

3-1-23-5. Thermal stability of P/S ratio
Within ± 3.0 dB based on the temperature of 25℃, but the P/S ratio itself should not be less than 13 dB.

3- 2. ANT SW section

Unless otherwise specified, measurement range shall be 54㎒ ~ 810㎒, and unused RF terminals shall be terminated by rated impedance Terminator.

Item	Specification				Note
	min.	typ.	max.	unit	
3-2-1. Insertion loss	-	5	6	dB	ANT IN to ANT OUT mode : TV (at MD OFF)
3-2-2. VSWR I	-	3.5	4.5		ANT IN Terminal mode : TV (at MD OFF) 54㎒ ~ 810㎒
3-2-3. VSWR II	- -	2 2	4 3		ANT OUT terminal mode : TV (at MD OFF) 54㎒ ~ 810㎒ mode : VTR (at MD ON) 61㎒ ~ 72㎒
3-2-4. Isolation	60	65	-	dB	Isolation from ANT OUT to ANT IN mode : VTR (at MD ON) 61㎒ ~ 72㎒
3-2-5. ANT IN leakage - MD - TU OSC	- -	- -	9.5 52	dB㎶ dB㎶	mode : VTR (at MD ON) RF-modulator section : none input signal Tuner OSC leakage.
3-2-6. 2nd Harmonics inter modulation	55	64	-	dB	f1/(f1+f2) ratio mode : TV (at MD OFF) item / freq(㎒) / level(dB)㎶: f1 / 91.25 / 100; f2 / 103.25 / 100 Both f1 and f2 are not modulated.

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Item	Specification				Note
	min.	typ.	max.	unit	
3-2-7. Cross modulation	55	62	-	dB	Then take the smallest ratio from the sideband to f2 as cross modulation value.

item	freq(㎒)	level(dB)㎶
f1	91.25	105
f2	193.25	80

f1 is 40% AM modulated by 15.75KHz sine wave.
f2 is not modulated.

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SYMB	NO	APPD	CHKD	DSGD				

3- 3. Tuner section

When the test characteristics, test point is pin no.16/if output terminal.

Item			Specification min.	typ.	max.	unit	Note
3-3-1. IF Rejection							
	UHF		60	90	-	dB	ANT INPUT level 65dBμV, 75Ω terminated
	VHF	HIGH	60	90	-		
		LOW	50	80	-		
	UHF		40	60	-	dB	ANT INPUT level 95dBμV, 75Ω terminated
	VHF	HIGH	40	65	-		
		LOW	40	60	-		
3-3-2. Image Rejection							
	UHF		45	60	-	dB	ANT INPUT level 65dBμV, 75Ω terminated
	VHF	CATV	45	70	-		
		13 ~ 7	60	75	-		
		6 ~ 2	60	75	-		
	UHF		40	55	-	dB	ANT INPUT level 95dBμV, 75Ω terminated
	VHF	CATV	40	60	-		
		13 ~ 7	40	60	-		
		6 ~ 2	40	60	-		
3-3-3. 920㎑ Color Beat Rejection							ANT INPUT level p:60dBμV (75Ω terminated) c:44dBμV (75Ω terminated) s:54dBμV (75Ω terminated)
	UHF		50	80	-	dB	
	VHF		50	80	-		

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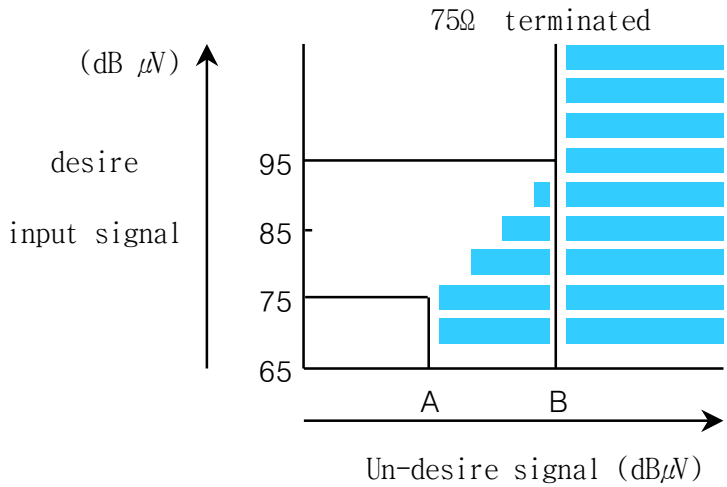
Item	Specification				Note
	min.	typ.	max.	unit	
3-3-4. CH 6 beat	45	60	-	dB	ANT INPUT level desire : 60dBμV (75Ω terminated) undesire : 54dBμV (75Ω terminated)
3-3-5. CH A-5 beat	45	60	-	dB	ANT INPUT level desire : 60dBμV (75Ω terminated)
3-3-6. CB rejection.	0.535 MHz ~ 30 MHz -7dBm min				desire : 55.25MHz ~ 83.25MHz (Ch.2 ~ Ch.6) -66dBm

3-3-7. 1% Cross modulation



CH		A(dBμV)	B(dBμV)
UHF		67	84
VHF	W+11 ~ J	67	89
	13 ~ 2	67	89

Cross modulation value should be within hantched area.
※ Tuner should be measured for 1% cross modulation with ± 2 channel undesired signal.

3-3-8. +B shift

CH	min.	typ.	max.	unit.	note
UHF	-	-	250	kHz	B± 1%
VHF HIGH	-	-	250		

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3-3-9. Over range	CH	Vtu	min.	typ.	max.	unit.
	UHF	28.0 V	2.0	-	-	MHz
		0.5 V	2.0	-	-	
	VHF	28.0 V	2.0	-	-	
		0.5 V	2.0	-	-	

3-3-10. Noise Figure	CH	min.	typ.	max.	unit.	note
	UHF	-	9.0	14.0	dB	
	VHF HIGH	-	8.0	14.0		
	VHF LOW	-	8.0	13.0		
3-3-11. Power gain	UHF	23	33	-	dB	
	VHF	23	33	-		
3-3-12. Power gain deviation	UHF	-	6	12	dB	
	VHF HIGH	-	6	12		
	VHF LOW	-	6	12		
3-3-13. Temperature shift	W+12 ~ 69	-	-	3000	kHz	25℃± 25℃
	W+11 ~ J	-	-	3000		
	13 ~ 2	-	-	2000		

3-4. IF section
When the test electrical characteristics when there are no instruction.
fp input level is 70 dBμV and p/s ratio is -7 dB.

Item	Specification				Note
	min.	typ.	max.	unit	
3-4-1. Video S/N	45	47	-	dB	A figure in parentheses is spec by LGIT measurement system
	45	47	-		50% white signal. 87.5% modulation. Subcarrier trap : on HPF : 100 kHz, LPF : 4.2 MHz

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Item	Specification				Note
	min.	typ.	max.	unit	
3-4-2. Noise limiting sensitivity					A figure in parentheses is spec by LGIT measurement system
AIR		45	48	dBμV	
CATV		45	50		50% white signal. 87.5% modulation. Subcarrier trap : on HPF : 100kHz, LPF : 4.2MHz Video S/N=30dB
UHF		45	50		
3-4-3. Video output level	0.8	1.0	1.2	Vp-p	standard color bar:87.5% mod.
3-4-4. SYNC ratio	25	28.6	30	%	standard color bar:87.5% mod.
Burst ratio	17	25	37		
3-4-5. Video amplitude frequency characteristics					
1.0 MHz	-3	-1	+1	dB	Full sweep : 87.5% mod. based on 0.5 MHz
2.0 MHz	-3	-1	+1		
3.0 MHz	-3	-1	+1		
3.58MHz	-6	-3	+0		
3-4-6. $Sin^2$2T pulse response	70	90	-	%	$Sin^2$2T pulse & bar:87.5% mod.
3-4-7. Differential Gain	-	5	10	%	5 stair-steps : 87.5% mod. Set modulation at the peak of 5'th chroma signal
3-4-8. Differential Phase	-	5	10	deg	5 stair-steps : 87.5% mod. Set modulation at the peak of 5'th chroma signal
3-4-9. Y/C delay time	-100	0	+100	nsec	0.25 MHz standard Envelope delay meter.

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Item	Specification				Note
	min.	typ.	max.	unit	
3-4-10. Audio output level	280	370	500	mVrms	1㎑ /± 25㎑ dev. standard color bar:87.5% mod.
3-4-11. AFT alignment accuracy	1.7	2.5	3.1	Vdc	Alignment center : 2.5V IF input level : 90dB μV P/S=-7dB standard color bar:87.5% mod.
3-4-16. SIF Output Level	60	65	-	dBμV	Video mod. : Color Bar 87.5% mod. RF INPUT Level = 70 dBμV P/S = -6dB Measure peak of 4.5㎒ carrier Level using Spectrum Analyzer and 1:10 Probe.

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4. ENVIRONMENTAL TESTS
(規格□는 □期□에 대하여 □□ □□를 □□한다)

Item	Specification			Note
	TUNER	MODULATOR	IF	
4-1. Heat load teat	OSC frequency UHF : ± 2.5㎒ VHF : ± 2.5㎒	Video modulation ± 8%max Video carrier frequency ± 150㎑ max Video carrier output level ± 4dB max Audio modulation ± 2% max Audio carrier frequency ± 20㎑ max P/S ratio ± 3dB max	Video S/N ± 6dB Video output ± 0.2Vp-p max Noise limiting sensitivity ± 6dB Audio output ± 30% max	test condition 4-1-1
4-2. Humidity load teat	same as in item 4-1			test condition 4-2-1
4-3. Cold test	same as in item 4-1			test condition 4-3-1
4-4. Operating life test	same as in item 4-1			test condition 4-4-1
4-5. High voltage test	same as in item 4-1			test condition 4-5-1
4-6. Vibration test	same as in item 4-1			test condition 4-6-1
4-7. Impact test	same as in item 4-1			test condition 4-7-1

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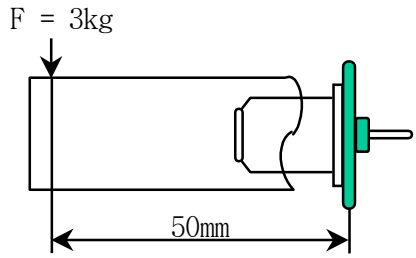
Environmental test condition

Item	Test condition
4-1-1 Heat load teat	1. Initial value measure at standard test condition. 2. Leave samples in 70℃± 2℃ for 96± 5 hours, and in standard test condition for 30 minutes, then take measurements within 1 hour. 3. Supply voltage : standard ± 10% 4. Supply voltage cycle : 1.5h on, 0.5h off
4-2-1 Humidity load test	1. Leave samples in 40± 5℃ for 24± 2 hours, and in standard test condition for 30 minutes, then take measurements. 2. Leave samples in 40± 5℃ 90 ~ 95% rh, for 96± 5 hours, and in standard test condition for 30 minutes, then take measurements within 1 hour. 3. Supply voltage : standard +10% 4. Supply voltage cycle : 1.5h on, 0.5h off
4-3-1 Cold test	1. Initial value measure at standard test condition. 2. Leave samples in -20℃± 2℃ for 96± 5 hours, and in standard test condition for 2 hours, then take measurements within 1 hour.
4-4-1 Operating life test	1. Take measurements in standard test condition. 2. Leave samples for 1000 hours, then take measurements. 3. Supply voltage : standard
4-5-1 High voltage test	15kV, 10 times (150pF charged) series R=150Ω
4-6-1 Vibration test	Vibration test fixture in used to vibrate the tuner with a total amplitude of 1mm and frequency ranging from 10 to 55hz, once per minute consecutively, for 40 minutes in each of three directions, x,y and z.
4-7-1 Impact test	1. Impact acceleration : 50m/sec² 2. Impact time : 11msec 3. Impact time & direction : 3 times per each 6 sides
5. Mechanical characteristics	
5-1 Outline view assembly appearance	No defects of wiring, soldering and assembling. No dirt, rust, corrosion or foreign material.

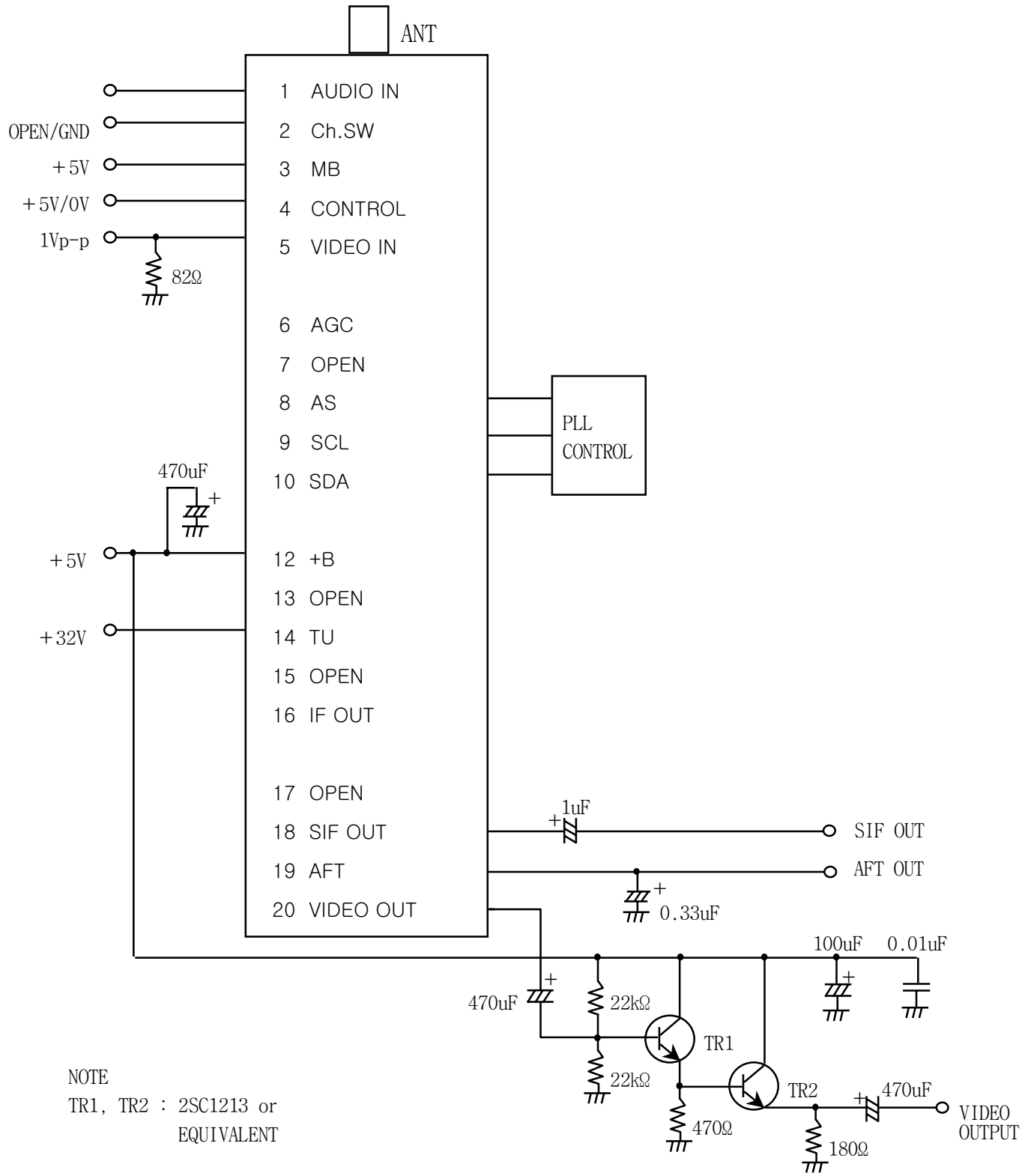
					A P P D.	C H K D.	D S G D.	MODEL NO: TADC-H207F
								TITLE: SPECIFICATION
SYMB	NO	APPD	CHKD	DSGD				DOCUMENT NO: BC40310 (21/26)

Item	Test condition
5-2 Appearance structure	
Dimension	As assembly drawing.
Mounting	As assembly drawing.
Weight	Approximately 80± 5g.
6. Others	
6-1. Ant jack Load Test	Crack, defection and shaking should not be existed with 15kg.cm banding moment after caulking.



					A P P D.	C H K D.	D S G D.	MODEL NO: TADC-H207F
								TITLE: SPECIFICATION
SYMB	NO	APPD	CHKD	DSGD				DOCUMENT NO: BC40310 (22/26)

7. TEST CIRCUIT



NOTE
TR1, TR2 : 2SC1213 or
EQUIVALENT

					A P P D.	C H K D.	D S G D.	MODEL NO: TADC-H207F
								TITLE: SPECIFICATION
SYMB	NO	APPD	CHKD	DSGD				DOCUMENT NO: BC40310 (23/26)

US 126/155/181 CH FREQUENCY LIST

CH	CENTER	P-Freq	S-Freq	OSC	BAND CODE
2	57.50	55.25	59.75	101	1 0 0 0
3	63.50	61.25	65.75	107	1 0 0 0
4	69.50	67.25	71.75	113	1 0 0 0
4A	75.50	73.25	77.75	119	1 0 0 0
5	79.50	77.25	81.75	123	1 0 0 0
6	85.50	83.25	87.75	129	1 0 0 0
A-5	93.50	91.25	95.75	137	1 0 0 0
A-4	99.50	97.25	101.75	143	1 0 0 0
A-3	105.50	103.25	107.75	149	1 0 0 0
A-2	111.50	109.25	113.75	155	1 0 0 0
A-1	117.50	115.25	119.75	161	1 0 0 0
A	123.50	121.25	125.75	167	1 0 0 0
B	129.50	127.25	131.75	173	1 0 0 0
C	135.50	133.25	137.75	179	0 1 0 0
D	141.50	139.25	143.75	185	0 1 0 0
E	147.50	145.25	149.75	191	0 1 0 0
F	153.50	151.25	155.75	197	0 1 0 0
G	159.50	157.25	161.75	203	0 1 0 0
H	165.50	163.25	167.75	209	0 1 0 0
I	171.50	169.25	173.75	215	0 1 0 0
7	177.50	175.25	179.75	221	0 1 0 0
8	183.50	181.25	185.75	227	0 1 0 0
9	189.50	187.25	191.75	233	0 1 0 0
10	195.50	193.25	197.75	239	0 1 0 0
11	201.50	199.25	203.75	245	0 1 0 0
12	207.50	205.25	209.75	251	0 1 0 0
13	213.50	211.25	215.75	257	0 1 0 0
J	219.50	217.25	221.75	263	0 1 0 0
K	225.50	223.25	227.75	269	0 1 0 0
L	231.50	229.25	233.75	275	0 1 0 0
M	237.50	235.25	239.75	281	0 1 0 0
N	243.50	241.25	245.75	287	0 1 0 0
O	249.50	247.25	251.75	293	0 1 0 0
P	255.50	253.25	257.75	299	0 1 0 0
Q	261.50	259.25	263.75	305	0 1 0 0

CH	CENTER	P-Freq	S-Freq	OSC	BAND CODE
R	267.50	265.25	269.75	311	0 1 0 0
S	273.50	271.25	275.75	317	0 1 0 0
T	279.50	277.25	281.75	323	0 1 0 0
U	285.50	283.25	287.75	329	0 1 0 0
V	291.50	289.25	293.75	335	0 1 0 0
W	297.50	295.25	299.75	341	0 1 0 0
W+1	303.50	301.25	305.75	347	0 1 0 0
W+2	309.50	307.25	311.75	353	0 1 0 0
W+3	315.50	313.25	317.75	359	0 1 0 0
W+4	321.50	319.25	323.75	365	0 1 0 0
W+5	327.50	325.25	329.75	371	0 1 0 0
W+6	333.50	331.25	335.75	377	0 1 0 0
W+7	339.50	337.25	341.75	383	0 1 0 0
W+8	345.50	343.25	347.75	389	0 1 0 0
W+9	351.50	349.25	353.75	395	0 1 0 0
W+10	357.50	355.25	359.75	401	0 1 0 0
W+11	363.50	361.25	365.75	407	0 1 0 0
W+12	369.50	367.25	371.75	413	0 0 0 1
W+13	375.50	373.25	377.75	419	0 0 0 1
W+14	381.50	379.25	383.75	425	0 0 0 1
W+15	387.50	385.25	389.75	431	0 0 0 1
W+16	393.50	391.25	395.75	437	0 0 0 1
W+17	399.50	397.25	401.75	443	0 0 0 1
W+18	405.50	403.25	407.75	449	0 0 0 1
W+19	411.50	409.25	413.75	455	0 0 0 1
W+20	417.50	415.25	419.75	461	0 0 0 1
W+21	423.50	421.25	425.75	467	0 0 0 1
W+22	429.50	427.25	431.75	473	0 0 0 1
W+23	435.50	433.25	437.75	479	0 0 0 1
W+24	441.50	439.25	443.75	485	0 0 0 1
W+25	447.50	445.25	449.75	491	0 0 0 1
W+26	453.50	451.25	455.75	497	0 0 0 1
W+27	459.50	457.25	461.75	503	0 0 0 1
W+28	465.50	463.25	467.75	509	0 0 0 1
W+29	471.50	469.25	473.75	515	0 0 0 1

---------- END OF US 126 CH ----------

					APPD.	CHKD.	DSGD.	MODEL NO: TADC-H207F
								TITLE: SPECIFICATION
SYMB	NO	APPD	CHKD	DSGD				DOCUMENT NO: BC40310 (24/26)

US 126/155/181 CH FREQUENCY LIST

CH	CENTER	P-Freq	S-Freq	OSC	BAND CODE
W+30	477.50	475.25	479.75	521	0 0 0 1
W+31	483.50	481.25	485.75	527	0 0 0 1
W+32	489.50	487.25	491.75	533	0 0 0 1
W+33	495.50	493.25	497.75	539	0 0 0 1
W+34	501.50	499.25	503.75	545	0 0 0 1
W+35	507.50	495.25	509.75	551	0 0 0 1
W+36	513.50	511.25	515.75	557	0 0 0 1
W+37	519.50	517.25	621.75	563	0 0 0 1
W+38	525.50	523.25	527.75	569	0 0 0 1
W+39	531.50	529.25	533.75	575	0 0 0 1
W+40	537.50	535.25	539.75	581	0 0 0 1
W+41	543.50	541.25	545.75	587	0 0 0 1
W+42	549.50	547.25	551.75	593	0 0 0 1
W+43	555.50	553.25	557.75	599	0 0 0 1
W+44	561.50	559.25	563.75	605	0 0 0 1
W+45	567.50	565.25	569.75	611	0 0 0 1
W+46	573.50	571.25	575.75	617	0 0 0 1
W+47	579.50	577.25	581.75	623	0 0 0 1
W+48	585.50	583.25	587.75	629	0 0 0 1
W+49	591.50	589.25	593.75	635	0 0 0 1
W+50	597.50	595.25	599.75	641	0 0 0 1
W+51	603.50	601.25	605.75	647	0 0 0 1
W+52	609.50	607.25	611.75	653	0 0 0 1
W+53	615.50	613.25	617.75	659	0 0 0 1
W+54	621.50	619.25	623.75	665	0 0 0 1
W+55	627.50	625.25	629.75	671	0 0 0 1
W+56	633.50	631.25	635.75	667	0 0 0 1
W+57	639.50	637.25	641.75	683	0 0 0 1
W+58	645.50	643.25	647.75	689	0 0 0 1

---------- END OF US 155 CH ----------

W+59	651.50	649.25	653.75	695	0 0 0 1
W+60	657.50	655.25	659.75	701	0 0 0 1
W+61	663.50	661.25	665.75	707	0 0 0 1
W+62	669.50	667.25	671.75	713	0 0 0 1
W+63	675.50	673.25	677.75	719	0 0 0 1

CH	CENTER	P-Freq	S-Freq	OSC	BAND CODE
W+64	681.50	679.25	683.75	725	0 0 0 1
W+65	687.50	685.25	689.75	731	0 0 0 1
W+66	693.50	691.25	695.75	737	0 0 0 1
W+67	699.50	697.25	701.75	743	0 0 0 1
W+68	705.50	703.25	707.75	749	0 0 0 1
W+69	711.50	709.25	713.75	755	0 0 0 1
W+70	717.50	715.25	719.75	761	0 0 0 1
W+71	723.50	721.25	725.75	767	0 0 0 1
W+72	729.50	727.25	731.75	773	0 0 0 1
W+73	735.50	733.25	737.75	779	0 0 0 1
W+74	741.50	739.25	743.75	785	0 0 0 1
W+75	747.50	745.25	749.75	791	0 0 0 1
W+76	753.50	751.25	755.75	797	0 0 0 1
W+77	759.50	757.25	761.75	803	0 0 0 1
W+78	765.50	763.25	767.75	809	0 0 0 1
W+79	771.50	769.25	773.75	815	0 0 0 1
W+80	777.50	775.25	779.75	821	0 0 0 1
W+81	783.50	781.25	785.75	827	0 0 0 1
W+82	789.50	787.25	791.75	833	0 0 0 1
W+83	795.50	793.25	797.75	839	0 0 0 1
W+84	801.50	799.25	803.75	845	0 0 0 1

---------- END OF US 181 CH ----------

					APPD.	CHKD.	DSGD.	MODEL NO: TADC-H207F
								TITLE: SPECIFICATION
SYMB	NO	APPD	CHKD	DSGD				DOCUMENT NO: BC40310 (25/26)

US 126/155/181 CH FREQUENCY LIST

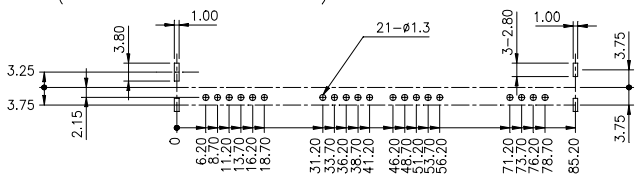
CH	CENTER	P-Freq	S-Freq	OSC	BAND CODE
14	473.50	471.25	475.75	517	0 0 0 1
15	479.50	477.25	481.75	523	0 0 0 1
16	485.50	483.25	487.75	529	0 0 0 1
17	491.50	489.25	493.75	535	0 0 0 1
18	497.50	495.25	499.75	541	0 0 0 1
19	503.50	501.25	505.75	547	0 0 0 1
20	509.50	507.25	511.75	553	0 0 0 1
21	515.50	513.25	517.75	559	0 0 0 1
22	521.50	519.25	523.75	565	0 0 0 1
23	527.50	525.25	529.75	571	0 0 0 1
24	533.50	531.25	535.75	577	0 0 0 1
25	539.50	537.25	541.75	583	0 0 0 1
26	545.50	543.25	547.75	589	0 0 0 1
27	551.50	549.25	553.75	595	0 0 0 1
28	557.50	555.25	559.75	601	0 0 0 1
29	563.50	561.25	565.75	607	0 0 0 1
30	569.50	567.25	571.75	613	0 0 0 1
31	575.50	573.25	577.75	619	0 0 0 1
32	581.50	579.25	583.75	625	0 0 0 1
33	587.50	585.25	589.75	631	0 0 0 1
34	593.50	591.25	595.75	637	0 0 0 1
35	599.50	597.25	601.75	643	0 0 0 1
36	605.50	503.25	607.75	649	0 0 0 1
37	611.50	509.25	613.75	655	0 0 0 1
38	617.50	515.25	619.75	661	0 0 0 1
39	623.50	621.25	625.75	667	0 0 0 1
40	629.50	627.25	631.75	673	0 0 0 1
41	635.50	633.25	637.75	679	0 0 0 1
42	641.50	639.25	643.75	685	0 0 0 1
43	647.50	645.25	649.75	691	0 0 0 1
44	653.50	651.25	655.75	697	0 0 0 1
45	659.50	657.25	661.75	703	0 0 0 1
46	665.50	663.25	667.75	709	0 0 0 1
47	671.50	669.25	673.75	715	0 0 0 1
48	677.50	675.25	679.75	721	0 0 0 1

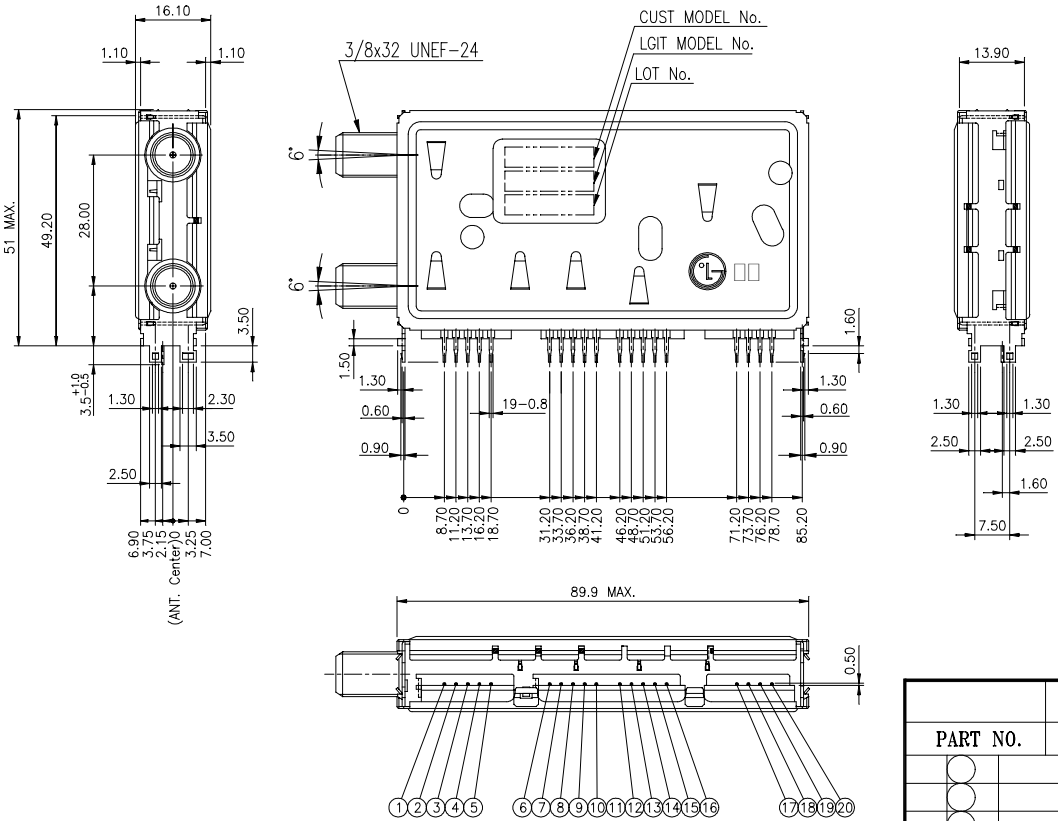
CH	CENTER	P-Freq	S-Freq	OSC	BAND CODE
49	683.50	681.25	685.75	727	0 0 0 1
50	689.50	687.25	691.75	733	0 0 0 1
51	695.50	693.25	697.75	739	0 0 0 1
52	701.50	699.25	703.75	745	0 0 0 1
53	707.50	705.25	709.75	751	0 0 0 1
54	713.50	711.25	715.75	757	0 0 0 1
55	719.50	717.25	721.75	763	0 0 0 1
56	725.50	723.25	727.75	769	0 0 0 1
57	731.50	729.25	733.75	775	0 0 0 1
58	737.50	735.25	739.75	781	0 0 0 1
59	743.50	741.25	745.75	787	0 0 0 1
60	749.50	747.25	751.75	793	0 0 0 1
62	755.50	753.25	757.75	799	0 0 0 1
62	761.50	759.25	763.75	805	0 0 0 1
63	767.50	765.25	769.75	811	0 0 0 1
64	773.50	771.25	775.75	817	0 0 0 1
65	779.50	777.25	781.75	823	0 0 0 1
66	785.50	783.25	787.75	829	0 0 0 1
67	791.50	789.25	793.75	835	0 0 0 1
68	797.50	795.25	799.75	841	0 0 0 1
69	803.50	801.25	805.75	847	0 0 0 1

					APPD.	CHKD.	DSGD.	MODEL NO: TADC-H207F
								TITLE: SPECIFICATION
SYMB	NO	APPD	CHKD	DSGD				DOCUMENT NO: BC40310 (26/26)

TERMINAL No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
TERMINAL NAME	AUDIO IN	CH SW	MB	CONTROL	VIDEO IN	RF AGC	OPEN	AS	SCL	SDA	OPEN	+B	OPEN	TU	OPEN	IF OUT	OPEN	SIF	AFT	VIDEO OUT

NOTE
1. TOLERANCES ARE ±0.5 UNLESS OTHERWISE SPECIFIED.
2. LOT NO. SHALL BE CONFORMED TO LGIT STANDARD SPECIFICATION.
3. THE PITCH BETWEEN TERMINAL IS SPECIFIED AT THE ROOT.
4. MATERIAL OF CHASSIS AND COVER IS TIN PLATE.
5. AS LONG AS THE OUTER APPEARANCE DOESN'T AFFECT THE PERFORMANCE OF THE PRODUCT, IT CAN BE CHANGED WITHOUT PRIOR NOTICE.
6. DIMENSION OF P.C.B FOR 3 IN 1, MD MOUNTING.(REFERENCE ONLY) (VIEWED FROM COPPER PATTERN)





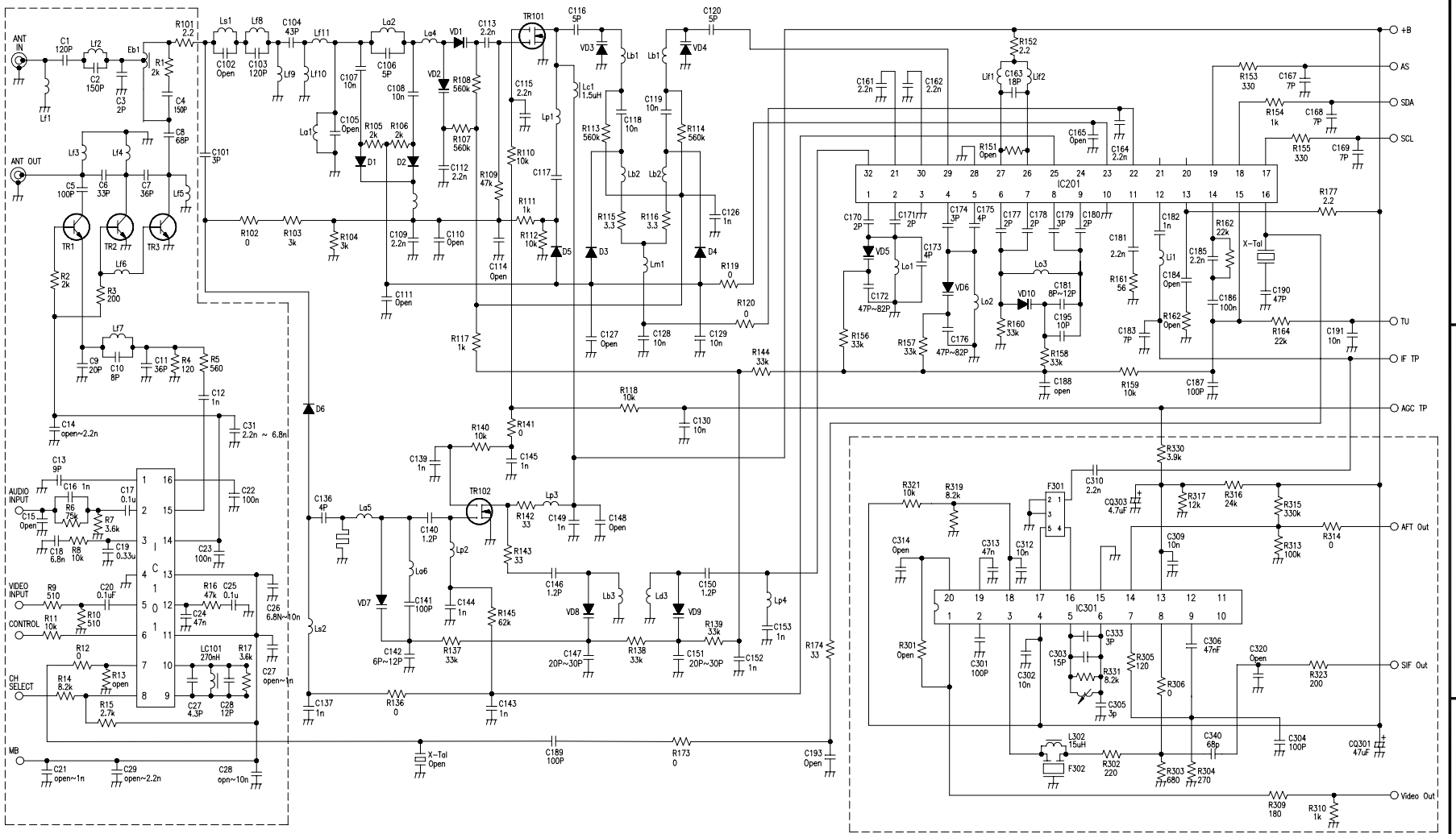
PART NO.	NAME	MATERIAL	SPEC.	FINISH
			UNIT mm	SCALE 1 : 1
				TADC-H207F

ZONE	SYMB	DATE OR NO.	APPD	CHKD	DSGD
			APPD. '01.10.13 Kim Byoung Yong	CHKD.	DSGD.

DRAW. '01.10.13 Cheong Hyo Sung

TITLE: OUTLINE DRAWING

DOCUMENT NO. TE30730



NOTES

1. Unless otherwise specified. All resistors are in ohm. Capacitors are in FARAD. Inductors are in HENRY.
2. Semiconductors are as follows.
   TR1.2.3 : 2SC2735, 2SC4713K, KTC3882
   TR101 : BF203OW, BB305C, BB504
   TR102 : BF203OW, BF1105R, BB502, BB501
   VD1~10 : HVC200A, 1T403, 1SV283, BB659
   D1~D6 : BA892, HSC277, 1SS381, KDS114
   IC101 : LA7161N
   IC201 : SN761672A
   IC301 : M52768FP
   F301 : M1865D, M1865M
   F302 : TPS4.5MC, TPS4.5MB,X4.5B,X4.5C

	SUPPLY VOLTAGE
+B	5V
TU	33V
MB	5V

PART NO.	NAME	MATERIAL	SPEC.	FINISH	SIZE
					A3

ZONE	SYMB	DATE OR NO.	APPD	CHKD	DSGD
			'01.10.13 Park Gil Sang		'01.10.13 Hyo Sung Cheong

UNIT	SCALE
mm	

APPD.	CHKD.	DSGD.	DRAW.
'01.10.13 Park Gil Sang		'01.10.13 Hyo Sung Cheong	'01.10.13 Hyon Suk Lee

TADC-H207F

TITLE: CIRCUIT DIAGRAM

DOCUMENT NO.: BD30272