

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

LG Precision Co., Ltd.

A P P D.	C H K D.	D S G D.	MODEL NO	T A D C - H 1 0 2 F
99.08.31 Gil Sang PARK		99.08.31 Hyo Sung CHEONG	DOCUMENT NO	B C 4 0 2 0 6

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

I n d e x

Item no	Item	Page
1	Common	3p
1- 1	Application	3p
1- 2	Structure	3p
1- 3	Circuit	3p
2	General specifications	3p
2- 1	Applicable broadcasting system	3p
2- 2	Receiving system	3p
2- 3	Intermediate frequency	3p
2- 4	Receiving channel	3p
2- 5	Output channel of modulator	3p - 4p
2- 6	Input / output condition	4p
2- 7	Operating temperature range	4p
2- 8	Storage temperature range	4p
2- 9	Guarantee voltage for operation	4p
2-10	Maximum ratings	5p
2-11	Current consumption	5p
2-12	PLL data format	5p - 7p
2-13	Test condition	7p
2-14	Measuring instruments	8p

					A P P D.	C H K D.	D S G D.	MODEL NO: TADC-H102F
					/	/	/	TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (1/26)
SYMB	NO	APPD	CHKD	DSGD				

3	Electrical characteristics	9p
3- 1	RF-modulator section	9p - 12p
3- 2	ANT SW section	13p - 14p
3- 3	Tuner section	15p - 17p
3- 4	IF section	17p - 19p
4	Environmental tests	20p
4 -1	Heat load test	20p
4- 2	Humidity load test	20p
4- 3	Cold test	20p
4- 4	Operating life test	20p
4- 5	High voltage test	20p
4- 6	Vibration test	20p
4- 7	Impact test	20p
5	Mechanical characteristics	21p
5- 1	Outline view assembly appearance	21p
5- 2	Appearance structure	22p
6	Others	22p
6- 1	Ant jack load test	22p
7	Test circuit	23p
8	Frequency table	24p - 26p

					A P P D.	C H K D.	D S G D.	MODEL NO: TADC-H102F
					/	/	/	TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (2/26)
SYMB	NO	APPD	CHKD	DSGD				

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

3 / 4 Ch

					A P P D.	C H K D.	D S G D.	MODEL NO: TADC-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (3/26)
SYMB	NO	APPD	CHKD	DSGD				

	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°C ~ +60°C

Humidity : less than 85%RH

2- 8. Storage temperature range

Temperature : -20°C ~ +70°C

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	

					A P P D.	C H K D.	D S G D.	MODEL NO: TADC-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (4/26)
SYMB	NO	APPD	CHKD	DSGD				

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	–	25	32	
TU	–	1.5	5.0	
CONTROL(MD:ON)	–	47.0	173	μ A

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	0	0	0	A
B AND SW byte	0	0	0	0	BS3	BS2	BS1	BS0	A

					A P P D.	C H K D.	D S G D.	MODEL NO: TADC-H102F	
								TITLE: SPECIFICATION	
								DOCUMENT NO: BC40206 (5/26)	
SYMB	NO	APPD	CHKD	DSGD					

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 = 50 μ A, CP = 1 = 200 μ A)
- N14~ N0 : Programmable divider byte

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

$$F_{osc} = F_{ref} \times 8 \times N$$

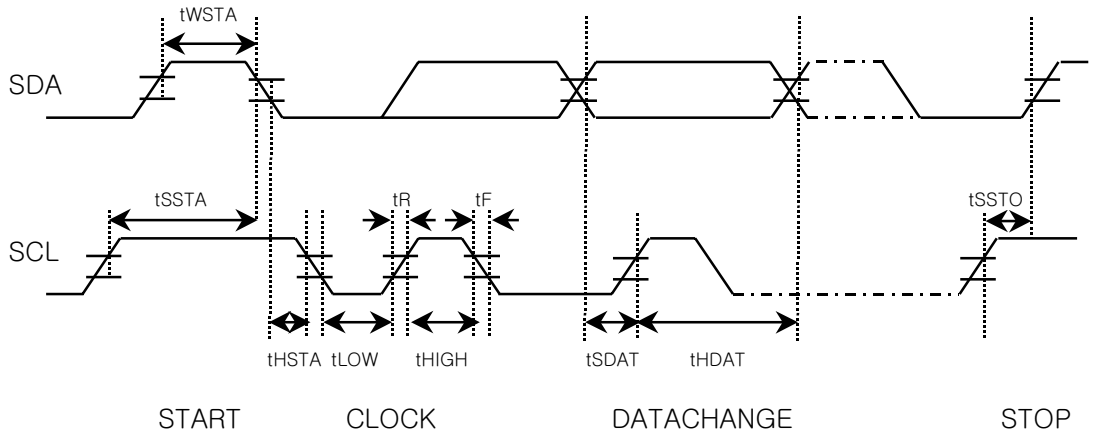
- Fosc : Locked oscillator frequency
- Fref : 4MHz/512 = 7.8125kHz
- N : Oscillator frequency data

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	

					A P P D.	C H K D.	D S G D.	MODEL NO: TADC-H102F
					/	/	/	TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (6/26)
SYMB	NO	APPD	CHKD	DSGD				

2-12-4 I²C BUS Time



		MIN	TYP	MAX	단 위
fSCL	SCL clock frequency	0		400	kHz
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	°C	
Relative humidity	65 ± 10	%RH	

					APPD.	CHKD.	DSGD.	MODEL NO: TADC-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (7/26)
SYMB	NO	APPD	CHKD	DSGD				

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
	3900N	NIHON TSUSHINKI
IF modulator	: RM54A	SHIBASOKU
	146F	EIDEN
RF convertor	: RC51B	SHIBASOKU
	458C-X	EIDEN
Video noise meter	: 925D/1	SHIBASOKU
Audio distortion meter	: 885A	SHIBASOKU
Vectorscope	: 520A	TEKTRONIX
Envelope delay meter	: 201/1	SHIBASOKU

					A P P D.	C H K D.	D S G D.	MODEL NO: TADC-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (8/26)
SYMB	NO	APPD	CHKD	DSGD				

3. Electrical characteristics

The unit stated in $\text{dB}\mu\text{V}$ is defined the value at 75Ω terminal in this specification. ($0 \text{ dBm} = 109 \text{ dB}\mu\text{V}$)

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	+2.0	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)

					APPD.	CHKD.	DSGD.	MODEL NO: TADC-H102F
					/			TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (9/26)
SYMB	NO	APPD	CHKD	DSGD				

Item	Specification				Note
	min.	typ.	max.	unit	
					S/N meter. (SHIBASOKU 925D-1 or 925C or equivalent) HPF : 100kHz, LPF : 4.2MHz SC TRAP : ON, WEIGHT : OFF Input signals : Video : 100% white signal Audio : none Video band : 0.1MHz ~ 4.2MHz
3-1- 8. Chroma beat (920kHz P.C.S. beat)	55	65	-	dB	Input signal : 0.4Vp-p 3.58MHz sine wave Use spectrum analyzer to measure the level of Fp + 0.92MHz The value is relative to the level of Fp without video modulation.
3-1- 9. Audio modulation (deviation)	34 (68)	40 (80)	46 (92)	kHz dev (%)	Input signal : -6.5dBs, (1.04Vp-p) 1kHz sine wave (100 % modulation = ± 25kHz dev.)
3-1-10. Audio maximum modulation	150 (300)	220 (440)	-	kHz dev (%)	Input signal : 1kHz 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 ~ 10kHz Based on 1kHz
3-1-12. Audio distortion	-	0.5	2.0	%	Input signals : Audio : -6.5dBs (1.04Vp-p), 1kHz sine wave Video : 1Vp-p color bar De-emphasis is on.(75μ sec)

					A P P D.	C H K D.	D S G D.	MODEL NO: TADC-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (10/26)
SYMB	NO	APPD	CHKD	DSGD				

Item	Specification				Note
	min.	typ.	max.	unit	
3-1-13. Audio S/N	48	56	-	dB	Input signals : Audio : -6.5dBs (1.04Vp-p), 1kHz 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	63.0	66.0	69.0	dBμV	Video input signal : 1Vp-p 100% white signal.
3-1-16. P/S ratio (sound carrier level)	-13	-16.0	-19	dB	Audio input signal : none Other conditions : same as item 3-1-15.
3-1-17. Video carrier frequency	-100	-	+100	kHz	Video input signal : none
3-1-18. Sound carrier frequency	4493	4500	4507	kHz	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 ~ 1GHz Except the range from Fp-4.6MHz to Fp+7.4MHz. Tuner local OSC leakage.
3-1-20. Inband spurious	60	-	-	dB	Input signals : Video : none Audio : none Measure range : Fp~Fp+4.5MHz.
3-1-21. Terminal leakage	-	-	54	dBμV	Measure range : 0 ~ 1GHz except GND.

					APPD.	CHKD.	DSGD.	MODEL NO: TADC-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (11/26)
SYMB	NO	APPD	CHKD	DSGD				

3-1-22. Stability

- 3-1-22-1. Video carrier frequency rise up time.
The time to approach the set value $\pm 100\text{kHz}$: within 3 seconds
- 3-1-22-2. Audio carrier frequency rise up time.
The time to approach the set value $\pm 4\text{kHz}$: within 10 seconds
- 3-1-22-3. Video carrier frequency shift by supply voltage drift.
Within $\pm 10\text{kHz}$ by $\pm 0.3\text{V}$ shift of the supply voltage.
- 3-1-22-4. Audio carrier frequency shift by supply voltage drift.
Within $\pm 3\text{kHz}$ by $\pm 0.3\text{V}$ shift of the supply voltage.

3-1-23. Thermal Stability

- 3-1-23-1. Thermal stability of video modulation.
Within $\pm 4\%$ based on the temperature of 25°C .

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

Measurement temperature range : $-10^\circ\text{C} \sim 60^\circ\text{C}$

Humidity range : 45%RH ~85%RH

Test measurement order and time :

$25^\circ\text{C} \rightarrow -10^\circ\text{C}(2\text{H}) \rightarrow 10^\circ\text{C}(1\text{H}) \rightarrow 25^\circ\text{C}(1\text{H}) \rightarrow 45^\circ\text{C}(1\text{H}) \rightarrow 60^\circ\text{C}(2\text{H})$

- 3-1-23-2. Thermal stability of video modulation.
Within $\pm 100\text{kHz}$ based on the temperature of 25°C .
- 3-1-23-3. Thermal stability of audio modulation.
Within $\pm 10\text{kHz}$ based on the temperature of 25°C .
- 3-1-23-4. Thermal stability of video modulation.
Within $\pm 2.0 \text{ dB}$ on the temperature of 25°C .
- 3-1-23-5. Thermal stability of P/S ratio
Within $\pm 2.5 \text{ dB}$ based on the temperature of 25°C , but the P/S ratio itself should not be less than 13 dB.

					A P P D.	C H K D.	D S G D.	MODEL NO: TADC-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (12/26)
SYMB	NO	APPD	CHKD	DSGD				

3- 2. ANT SW section

Unless otherwise specified, measurement range shall be 54MHz ~ 810MHz,
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) 54MHz ~ 810MHz				
3-2-3. VSWR II	-	2	4		ANT OUT terminal mode : TV (at MD OFF) 54MHz ~ 810MHz				
	-	2	3		mode : VTR (at MD ON) 61MHz ~ 72MHz				
3-2-4. Isolation	60	65	-	dB	Isolation from ANT OUT to ANT IN mode : VTR (at MD ON) 61MHz ~ 72MHz				
3-2-5. ANT IN leakage - MD - TU OSC	-	-	9.5	dB μ V	mode : VTR (at MD ON) RF-modulator section : none input signal				
	-	-	52	dB μ V	Tuner OSC leakage.				
3-2-6. 2nd Harmonics inter modulation	55	64	-	dB	f1/(f1+f2) ratio mode : TV (at MD OFF)				
					<table border="1"> <thead> <tr> <th>item</th> <th>freq(MHz)</th> <th>level(dB)μV</th> </tr> </thead> <tbody> <tr> <td>f1</td> <td>91.25</td> <td>100</td> </tr> <tr> <td>f2</td> <td>103.25</td> <td>100</td> </tr> </tbody> </table>	item	freq(MHz)	level(dB) μ V	f1
item	freq(MHz)	level(dB) μ V							
f1	91.25	100							
f2	103.25	100							
Both f1 and f2 are not modulated.									

					APPD.	CHKD.	DSGD.	MODEL NO: TADC-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (13/26)
SYMB	NO	APPD	CHKD	DSGD				

Item	Specification				Note									
	min.	typ.	max.	unit										
3-2-7. Cross modulation	55	62	-	dB	<p>Then take the smallest ratio from the sideband to f2 as cross modulation value.</p> <table border="1"> <thead> <tr> <th>item</th> <th>freq(MHz)</th> <th>level(dB)μV</th> </tr> </thead> <tbody> <tr> <td>f1</td> <td>91.25</td> <td>105</td> </tr> <tr> <td>f2</td> <td>193.25</td> <td>80</td> </tr> </tbody> </table> <p>f1 is 40% AM modulated by 15.75KHz sine wave. f2 is not modulated.</p>	item	freq(MHz)	level(dB) μV	f1	91.25	105	f2	193.25	80
item	freq(MHz)	level(dB) μV												
f1	91.25	105												
f2	193.25	80												

					A P P D.	C H K D.	D S G D.	MODEL NO: TADC-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (14/26)
SYMB	NO	APPD	CHKD	DSGD				

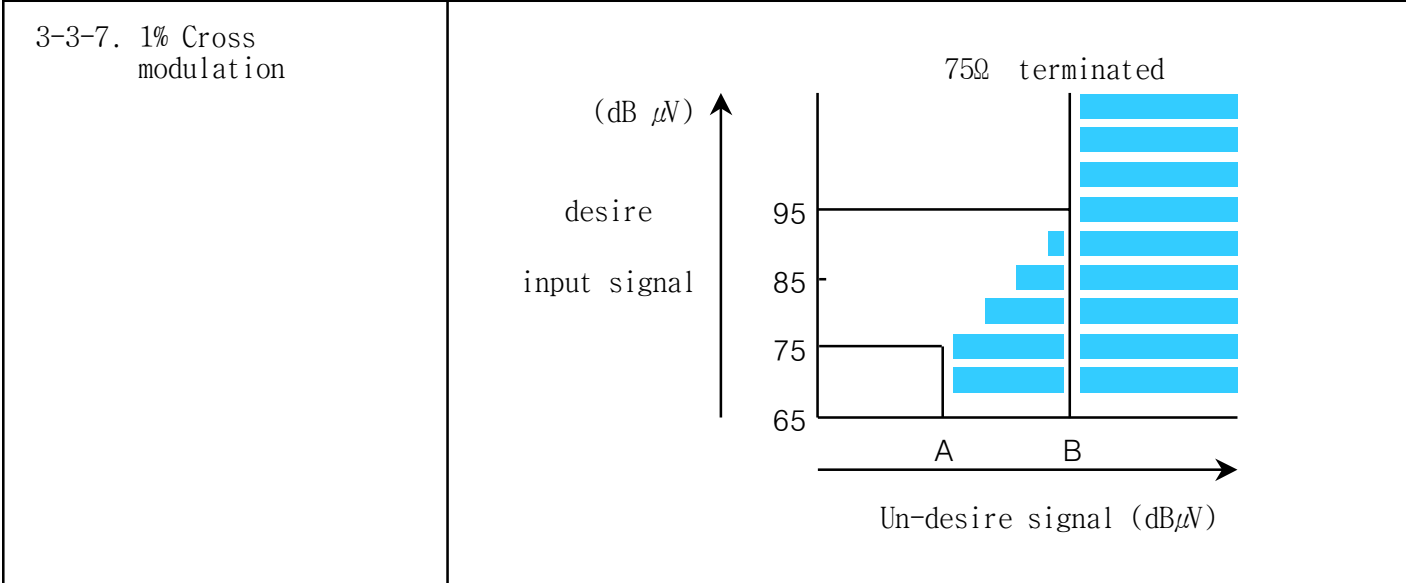
3- 3. Tuner section

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

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

					APPD.	CHKD.	DSGD.	MODEL NO: TADC-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (15/26)
SYMB	NO	APPD	CHKD	DSGD				

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



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

Cross modulation value should be within hatched 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 \pm 1%
	VHF HIGH	-	-	250		

SYMB	NO	APPD	CHKD	DSGD	APPD.	CHKD.	DSGD.	MODEL NO: TADC-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (16/26)

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	25	35	-	dB	
	VHF	25	38	-		

3-3-12. Power gain deviation	UHF	-	6	10	dB	
	VHF HIGH	-	6	12		
	VHF LOW	-	6	12		

3-3-13. Temperature shift	W+12 ~ 69	-	-	3000	kHz	25°C± 25°C
	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 dB μ V 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 LGEC measurement system
	45	47	-		50% white signal. 87.5% modulation. Subcarrier trap : on HPF : 100 kHz, LPF : 4.2 MHz

					APPD.	CHKD.	DSGD.	MODEL NO: TADC-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (17/26)
SYMB	NO	APPD	CHKD	DSGD				

Item	Specification				Note
	min.	typ.	max.	unit	
3-4-2. Noise limiting sensitivity					A figure in parentheses is spec by LGEC measurement system 50% white signal. 87.5% modulation. Subcarrier trap : on HPF : 100kHz, LPF : 4.2MHz Video S/N=30dB
AIR		45	48	dB μ V	
CATV		45	50		
UHF		45	50		
3-4-3. Video output level	0.8	1.0	1.2	V _{p-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					Full sweep : 87.5% mod. based on 0.5 MHz
1.0 MHz	-2	0	+2		
2.0 MHz	-2	0	+2		
3.0 MHz	-2	0	+2		
3.58MHz	-3	-1	+1		
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.

					APPD.	CHKD.	DSGD.	MODEL NO: TADC-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (18/26)
SYMB	NO	APPD	CHKD	DSGD				

Item	Specification				Note
	min.	typ.	max.	unit	
3-4-10. Audio output level	280	370	500	mVrms	1kHz /± 25kHz dev. standard color bar:87.5% mod.
3-4-11. Audio distortion	-	1	2	%	1kHz /± 25kHz dev. standard color bar:87.5% mod.
3-4-12. Audio frequency characteristics 20 Hz 12 kHz	-3 -3	0 0	+3 +3	dB	20Hz ~ 12kHz Based on 1kHz /± 7.5kHz dev. standard color bar:87.5% mod.
3-4-13. Audio S/N	45	50	-	dB	1kHz /± 25kHz dev. standard color bar:87.5% mod. Use IHF filter.
3-4-14. SYNC buzz	-	50	100	mVp-p	standard color bar:87.5% mod. 400Hz/± 25kHz dev. P/S=-17dB
3-4-15. AFT alignment accuracy	-50	0	+50	kHz	Alignment center : 2.5V IF input level : 90dB μ V P/S=-7dB standard color bar:87.5% mod.
3-4-16. SIF Output Level	70	80		dB μ V	Video mod. : Color Bar 87.5% mod. RF INPUT Level = 70 dB μ V P/S = -6dB Measure peak of 4.5MHz carrier Level using Spectrum Analyzer and 1:10 Probe.

					APPD.	CHKD.	DSGD.	MODEL NO: TADC-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (19/26)
SYMB	NO	APPD	CHKD	DSGD				

4. ENVIRONMENTAL TESTS

Item	Specification			Note
	TUNER	MODULATOR	IF	
4-1. Heat load test	OSC frequency UHF : $\pm 2.5\text{MHz}$ VHF : $\pm 2.5\text{MHz}$	Video modulation $\pm 8\% \text{max}$ Video carrier frequency $\pm 100\text{kHz max}$ Video carrier output level $\pm 4\text{dB max}$ Audio modulation $\pm 8\% \text{max}$ Audio carrier frequency $\pm 20\text{kHz max}$ P/S ratio $\pm 3\text{dB max}$	Video S/N $\pm 6\text{dB}$ Video output $\pm 0.2\text{Vp-p max}$ Noise limiting sensitivity $\pm 6\text{dB}$ Audio output $\pm 30\% \text{max}$	test condition 4-1-1
4-2. Humidity load test	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

					APPD.	CHKD.	DSGD.	MODEL NO: TADC-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (20/26)
SYMB	NO	APPD	CHKD	DSGD				

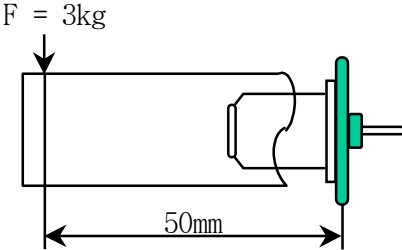
Environmental test condition

Item	Test condition
4-1-1 Heat load test	1. Initial value measure at standard test condition. 2. Leave samples in $70^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 96 ± 5 hours, and in standard test condition for 30 minutes, then take measurements within 1 hour. 3. Supply voltage : standard $\pm 10\%$ 4. Supply voltage cycle : 1.5h on, 0.5h off
4-2-1 Humidity load test	1. Leave samples in $40 \pm 5^{\circ}\text{C}$ for 24 ± 2 hours, and in standard test condition for 30 minutes, then take measurements. 2. Leave samples in $40 \pm 5^{\circ}\text{C}$ 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 $-20^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 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=150 Ω
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/sec ² 2. Impact time : 11msec 3. Impact time & direction : 3 times per each 6 sides

5. Mechanical characteristics

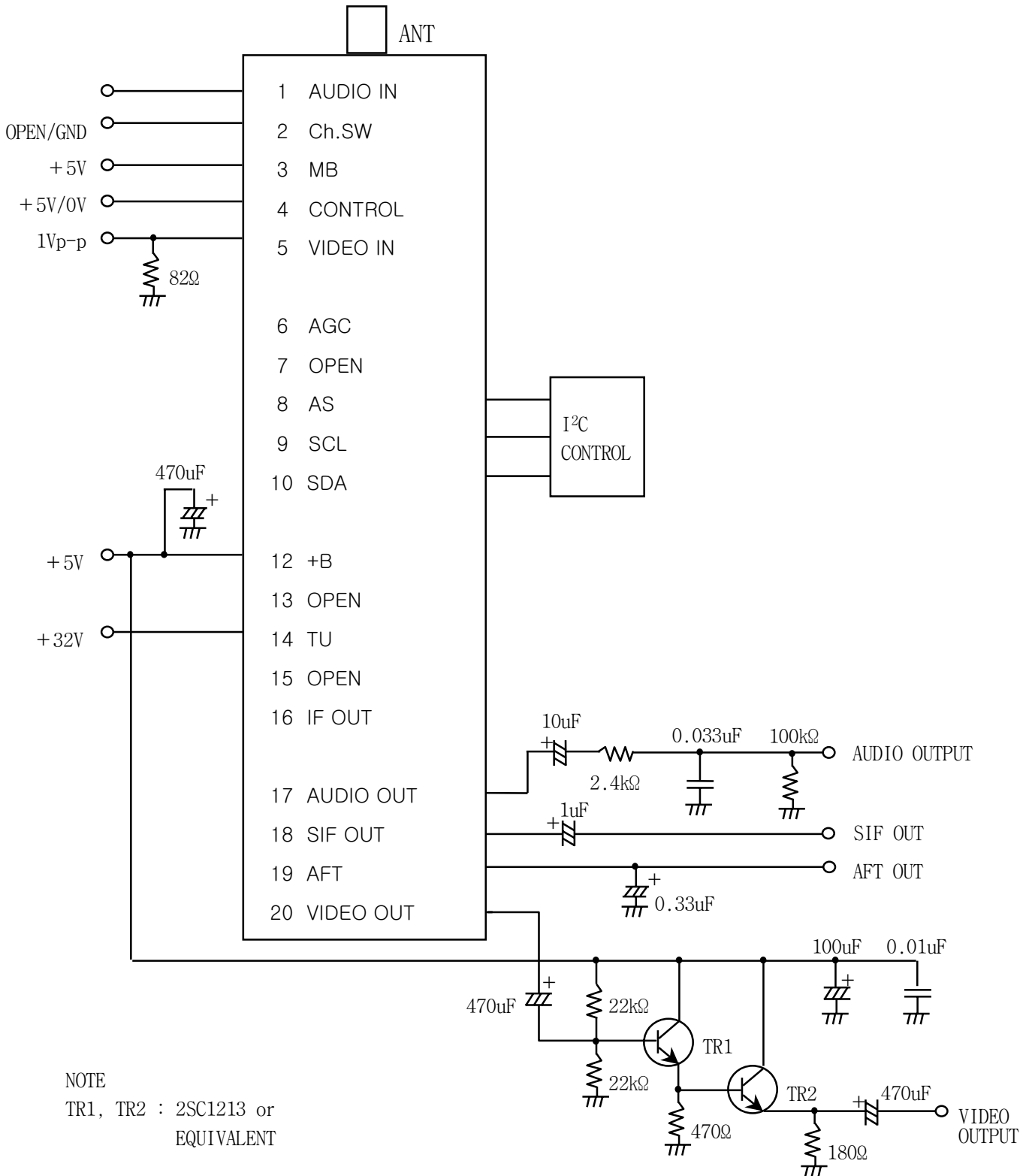
5-1 Outline view assembly appearance	No defects of wiring, soldering and assembling. No dirt, rust, corrosion or foreign material.
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					APPD.	CHKD.	DSGD.	MODEL NO: TADC-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (21/26)
SYMB	NO	APPD	CHKD	DSGD				

Item	Test condition
5-2 Appearance structure Dimension Mounting Weight 6. Others 6-1. Ant jack Load Test	As assembly drawing. As assembly drawing. Approximately 80± 5g. Crack, deflection 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-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40152 (22/26)
SYMB	NO	APPD	CHKD	DSGD				

7. TEST CIRCUIT



					APPD.	CHKD.	DSGD.	MODEL NO: TADC-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (23/26)
SYMB	NO	APPD	CHKD	DSGD				

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-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (24/26)
SYMB	NO	APPD	CHKD	DSGD				

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-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (25/26)
SYMB	NO	APPD	CHKD	DSGD				

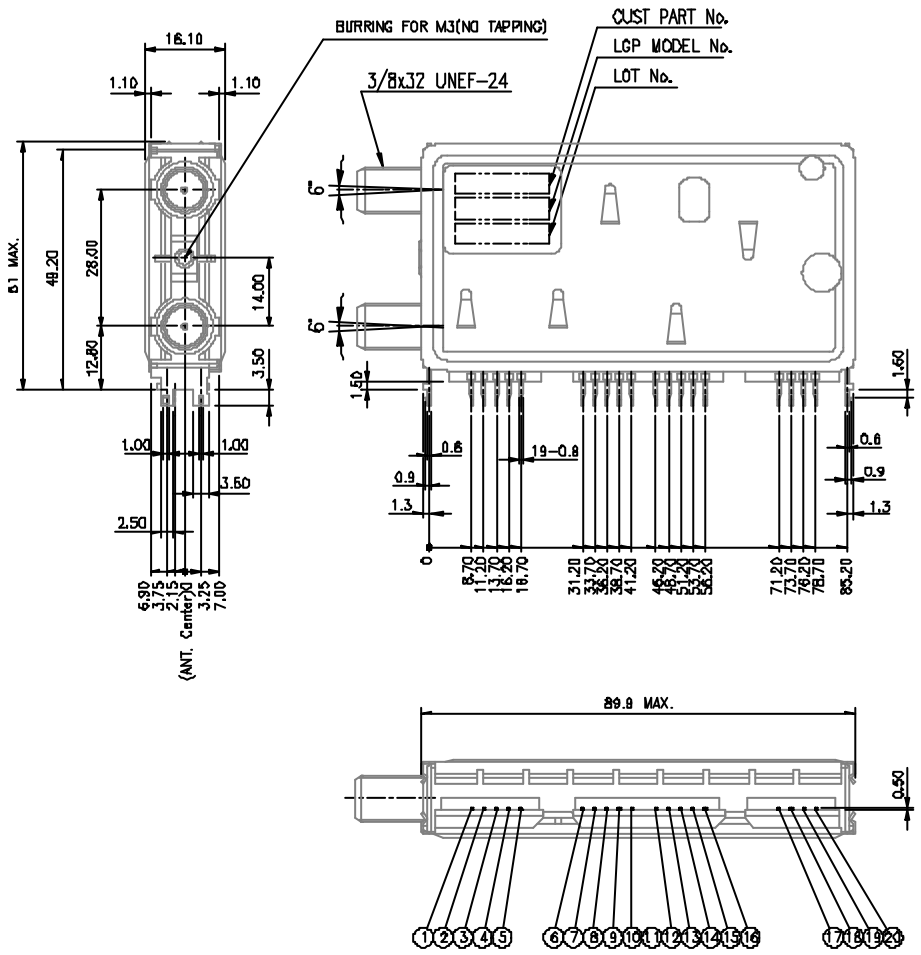
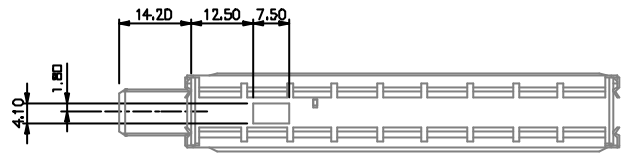
US 126/155/181 CH FREQUENCY LIST

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	603.25	607.75	649	0 0 0 1
37	611.50	609.25	613.75	655	0 0 0 1
38	617.50	615.25	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

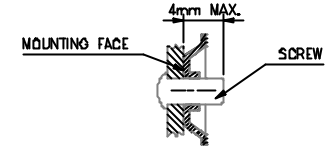
CH	CENTER	P-Freq	S-Freq	OSC	BAND CODE
49	683.50	681.25	685.75	727	0 0 0 1
50	689.50	687.25	691.75	733	0 0 0 1
51	695.50	693.25	697.75	739	0 0 0 1
52	701.50	699.25	703.75	745	0 0 0 1
53	707.50	705.25	709.75	751	0 0 0 1
54	713.50	711.25	715.75	757	0 0 0 1
55	719.50	717.25	721.75	763	0 0 0 1
56	725.50	723.25	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-H102F
								TITLE: SPECIFICATION
								DOCUMENT NO: BC40206 (26/26)
SYMB	NO	APPD	CHKD	DSGD				

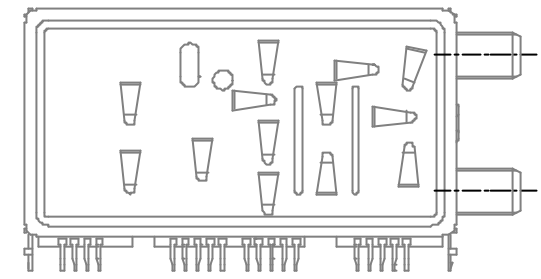
TERMINAL No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
TERMINAL NAME	AUDIO IN	CH SW	MB	CONTROL	VIDEO IN	RF AGC	OPEN	AS	SCL	SDA	OPEN	+B	OPEN	TU	OPEN	IF OUT	AUDIO OUT	SIF	AFT	VIDEO OUT



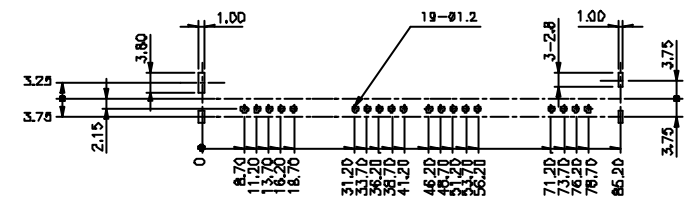
- NOTE
1. TOLERANCES ARE ± 0.5 UNLESS OTHERWISE SPECIFIED.
 2. LOT NO. SHALL BE CONFORMED TO LGP STANDARD SPECIFICATION.
 3. THE PITCH BETWEEN TERMINAL IS SPECIFIED AT THE ROOT.
 4. THE LENGTH OF SCREW FROM MOUNTING FACE IS 4mm MAX.



5. MATERIAL OF CHASSIS AND COVER IS TIN PLATE.
6. AS LONG AS THE OUTER APPEARANCE DOESN'T AFFECT THE PERFORMANCE OF THE PRODUCT, IT CAN BE CHANGED WITHOUT PRIOR NOTICE.



7. DIMENSION OF P.C.B FOR 3 IN 1, MD MOUNTING.(REFERENCE ONLY)
(VIEWED FROM COPPER PATTERN)



PART NO.		NAME		MATERIAL		SPEC.		FINISH	
						UNIT	SCALE	TADC-H102F	
						INCH	1:1		
						USED	DRAT	TITLE	
						'99.06.30		OUTLINE DRAWING	
						Lec		DOCUMENT NO.	
						Kap		TE30564	
						Seul			
ZONE	SYMB	DATE OR NO.	APPD	CHGD	USED				