1. SCOPE

This specification outlines the pertinent electrical requirements of the RF output modulator which converts the FM video and FM audio signal into the RF signal for television standard transmission system.

2.GENERAL SPECIFICATIONS

2-1. Output frequency 1340 ~1450mhz (I^2C PLL controller from outside)
2-2. Supply voltage 12v+/-0.2V
2-3. Consumption current 140+/-20 mA
2-4. Operation and storage temperature 0-50^{o}C
Conditions for guarantee humidity 85% or less

3.Test Conditions

3-1. Testing ambient conditions
Defined as temperature of 25+/-2^{o}C and humidity of 65+/-5% RH.
Note that temperatures of 5-30^{o}C and humidity of 45-85% RH may be regarded as standard.

3-2. Unit setting conditions
(1). Picture --10 step wave signal 1.0Vp-p(82 Ohm load)
(2). Audio -- 1.0Vp-p of sine wave 1KHz

4. Electrical Performance

4-1. Video system characteristics

	parameter	Specification min	typ	max	unit	Remark
4-1-1	Input impedance		1.7k		ohm	Measure at 0.5-mhz
4-1-2	Input signal level		1.0		Vp-p	Load of 82ohm connected negative synchronous
4-1-3	Modulation 1340~1450 sine wave 10khz 1Vp-p	6	8	10	MHz	Superimposed sinuous wave. (3.58mhz)is 20% of the step input level measure under the apl of 10-90% differential gain of demodulator unit is to be compensated
4-1-4	Differential gain	-8		8	%	
4-1-5	Differential phase	-8		8	deg	-ditto-
4-1-6	S/N	45			dB	Measuer mith respeot to standard demodulator output.
4-1-7	Out level taper		4	6	dB	fp 1340~1450mhz

4-2. Audio system characteristics

4-2-1 Input impedance		1.4		Kohm	Measure at 0.1-10 KHz
4-2-2 Modulation	35	40	45	KHz	
4-2-3 Distortion factor			3	%	Audio input signal 1.0Vp-p 1khz modulation 50% (sine wave) video input signal all black (sync.only) use standard demodulator of inter -carrier system. De-emphasis(50 usec) is on.
4-2-4 S/n	40			dB	The same as 4-2-3

4-3. Output system characteristics

	Parameter	Specification. Min	Typ	Max	Unit	Remark
4-3-1	Video carrier frequency	-50	fp	+50	KHz	Test at 25°C temperature and 65% RH of humidity Fs1 6.0 MHz Fs2 6.5 mhz *output channel
4-3-2	Video output level 1340~1450 MHz	14	16	17		
4-3-3	Audio output level difference(p/s ratio) fp:1340~1450mhz	22	27	32	dB	
4-3-4	Audio carrice frequency	-8	fs_1	+8	KHz	Input signal none the measurement is taken after 30 sec. from the power-on.
4-3-5	Audio modulator fs1 fs2	30 30	40 40	50 50	KHz	Measurement difference video of carrier frequency output level for 1340~1450MHz. Except to fp. fp+/-fs against video carrier output level.
4-3-6	Out-band spurious	45	50		dB	
4-3-7	Output impedance		75		Ohm	Unbalanced

5-1. PLL section characteristics

No	Item	Specification	notes
5-2.	IIC Bus (1) SDA, SCL input voltage	Under standard test condition	V
	(2) Address	C2 (on write date format)	
	(3) SDA SCL input impedance	SDA/SCL are in the high impedance and there should be no reliablity problem with 5V continually on the SDA/SCL, if power supply is switched off.	

Condition	Min	Typ	Max
High voltage	3		5
Low voltage	0		1.5

(4) Data format

	Msb							Lsb		
Address	1	1	0	0	0	Ma1	Ma0	0	A	Byte1
Programmable Divider	0	14 2	13 2	12 2	11 2	10 2	9 2	8 2	A	Byte2
Programmable Divider	7 2	6 2	5 2	4 2	3 2	2 2	1 2	0 2	A	Byte3
Charge pump and test bits	1	(0) cp	t1	t0	1	1	1	(0) os	A	Byte4
I/o port control bits	p7	p6	p5	p4	p3	p2	p1	p0	A	Byte5

Table 1 write data format (msb is transmitted first)

Address	1	1	0	0	0	MA1	MA2	1	A	Byte1
Status byte	POR	FL	I2	I1	I0	A2	A1	A0	A	Byte2

Table 2 read date format

A.acknowledge bit.

MA1,MA0.voltage address bits.

Cp,charge pump current select.

T1:test mode selection,T0:charge pump disable

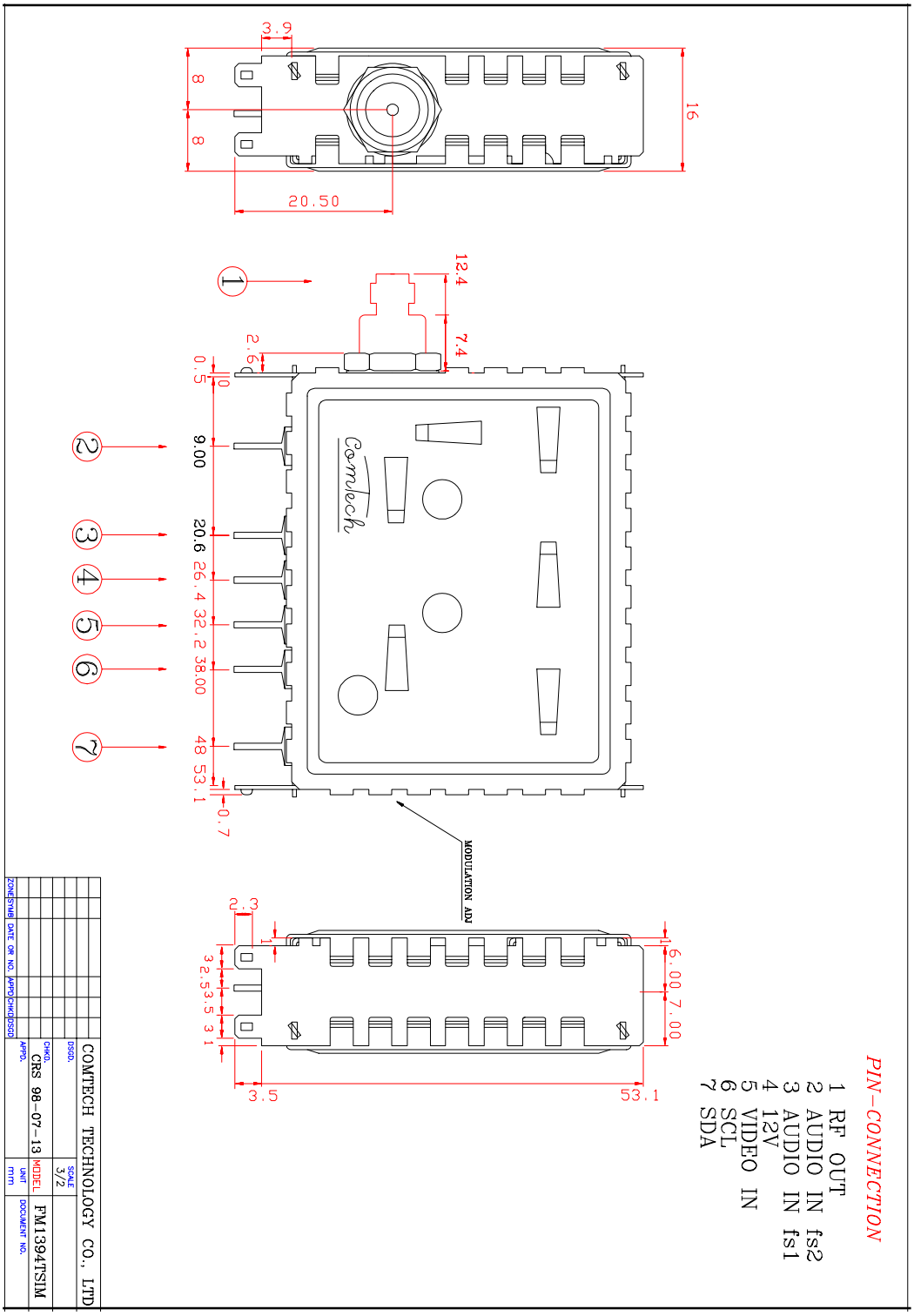
Os,varactor drive output disable switch.

P7,P6,P5,P4,P3,P2,P1,P0;controloutput states.for power on reset indicator

FL:phase lock detect flag

I2,I1,I0:digital information from ports P7,P5,and P4.

A2,A1,A0:5 level adc data from P6


3.9
8
8
16
20.50
12.4
7.4
2.6
0.5
9.00
20.6
26.4
32.2
38.00
48
53.1
0.7
comtech
MODULATION ADJ
2.3
1
3
2.5
3.5
3
1
6.00
7.00
3.5
53.1
PIN-CONNECTION
1 RF OUT
2 AUDIO IN fs2
3 AUDIO IN fs1
4 12V
5 VIDEO IN
6 SCL
7 SDA
COMTECH TECHNOLOGY CO., LTD.
FM1394TSIM
CRS 98-07-13
SCALE 3/2