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.Ceneral Specifications

2-1. Output frequency 2400~2483MHz (I^2C PLL controller from outside)
2-2. Supply voltage 12v+/-0.2V
2-3. Consumption current 100+/-20mA
2-4. Operation and storage temperature 0-50°C
Conditions for guarantee humidity 85% or less

3.Test Conditions

3-1. Testing ambient conditions
defined as temperature of 25+/-2°C and humidity of 65+/-5% RH.
Note: That temperature of 5~30°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(82OHm 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		1.3		K	Measure at 0.5-5MHz
4-1-2	Input signal level		1.0		Vp-p	Load of 82ohm connected negative synchronous
4-1-3	Modulation FP2480MHz sine wave 300KHz 1Vp-p	2	3	4	MHz	Superimposed sinuous wave. (3.58MHz)is 20% of the step input
4-1-4	Differential gain	8		8	%	level measure under the APL of 10-90% differential gain of demodulator unit is to be compensated
4-1-5	Differential phase	-8		8	deg	-ditto-
4-1-6	S/N	45			dB	Measure with respect to standard demodulator output.
4-1-7	Out level taper		4	6	dB	Fp 2400~2483MHz

4-2. Audio system characteristics

4-2-1 Input impedance		1.4		Kohm	Measure at 0.1-10KHz
4-2-2 Modulation	35	40	45	KHz	
4-2-3 Distortion factor			3	%	Audoi 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
4-3-2	Video output level					
	SW=9V	8	10	13	dBm	Fp 2400 ~ 2483 MHz
	SW=0V	-2	0	2		Fs1: 6.0 MHz
4-3-3	Audio Output Level Difference (P/S ratio)	22	27	32	dB	Fs2: 6.5 MHz *Output Channel
4-3-4	Audio carrier frequency	-8	fs	+8	KHz	Input signal: none the measurement is taken after 30 sec. from the power-on.
4-3-5	Audio modulator fs1	35	50	65	KHz	measurement difference video of carrier frequency output level for
	fs2	35	50	65		
4-3-6	Out-band spurious	50			dB	2400~2483MHz except to fp.
4-3-7	In-band spurious within bandwidth	60			dB	fp+/-fs against video carrier output level.
4-3-8	Output impedance		75		OHm	Unbalanced.

5-1. Pll section characteristics U6239B (TEMIC)

No	Item	Specification	notes
5-2.	I^2C Bus (1) SDA.SCL input voltage	Under standard test condition	V

Condition	min	typ	max
High voltage	3		5
Low voltage	0		1.5

(2) Address	C2 (on write date format)
(3) SDA SCL input impedance	SDA/SCLI 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.

(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;control output states.POR power on reset indicator

PL:phase lock detect flag

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

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