

SPECIFICATION	
MODULATOR	
1. SCOPE	
<p>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</p>	
2. GENERAL SPECIFICATIONS	
2-1. OUTPUT FREQUENCY	1100~1300MHZ (1°C PLL CONTROLLER FROM OUTSIDE)
2-2.	
2-3. SUPPLY VOLTAGE	12V+/-0.2V
2-4. CONSUMPTION CURRENT	140+/-20mA
2-5. OPERATION AND STORAGE CONDITIONS FOR GUARANTEE	TEMPERATURE 0-50° C HUMIDITY 85% OR LESS
3. TEST CONDITIONS	
3-1. TESTING AMBIENT CONDITIONS	
<p>DEFINED AS TEMPERATURE OF 25+/-2°C AND HUMIDITY OF 65+/-5% RH. NOTE : THAT TEMPERATURES OF 5-30°C AND HUMIDITY OF 45-85%RH MAY BE REGARDED AS STANDARD.</p>	
3-2.	
3-3. UNIT SETTING CONDITIONS	
(1) PICTURE-- 10 STEP WAVE SIGNAL 1.0VP-P(82ΩLoad).	
(2) AUDIO -- 1.0Vp-p OF SINE WAVE 1KHZ.	
COMTECH TECHNOLOGY CO., LTD	
FM1200TSIM (1/4)	

SPECIFICATION						
MODULATOR						
4. ELECTRICAL PERFORMANCE						
4-1. VIDEO SYSTEM CHARACTERISTICS						
	PARAMETER	SPECIFICATION			UNIT	REMARK
		MIN	TYP	MAX		
4-1-1	INPUT IMPEDANCE		1.7k		$\Omega$	MEASURE AT 0.5-5MHZ
4-1-2	INPUT SIGNAL LEVEL		1.0		V <sub>p-p</sub>	LOAD OF 82 $\Omega$ CONNECTED NEGATIVE SYNCHRONOUS
4-1-3	MODULATION 1100~1300 SINE WAVE 10KHz 1VP-P	5	6	7	MHz	SUPERIMPOSED SINOUS WAVE (3.58MHZ) IS 20% OF THE STEP INPUT LEVEL. MEASURE UNDER THE APL OF 10-90%
4-1-5	DIFFERENTIAL GAIN	-8		8	%	DIFFERENTIAL GAIN OF DEMODULATOR UNIT IS TO BE COMPENSATED.
4-1-6	DIFFERENTIAL PHASE	-8		8	DEG	-DITTO-
4-1-7	S/N	45			dB	MEASURE MITH RESPECT TO STANDARD DEMODULA- TOR OUTPUT.
4-1-8	OUT LEVEL TAPER		4	6	dB	Fp 1100~1300MHZ
4-2. AUDIO SYSTEM CHARACTERISTICS						
4-2-1	INPUT IMPEDANCE		1.4		K $\Omega$	MEASURE AT 0.1-10KHZ
4-2-2	MODULATION	35	40	45	KHZ	
4-2-3	DISTORTION FACTOR			3	%	AUDIO INPUT SIGNAL: 1.0V <sub>p-p</sub> 1KHZ MODULA- TION 50% (SINE WAVE) VIDEO INPUT SIGNAL: ALL BLACK (SYNC.ONLY) USE STANDARD DEMODU- LATOR OF INTER-CARRIER SYSTEM. DE-EMPHASIS(50 usec) IS ON.
4-2-4	S/N	40			dB	THE SAME AS 4-2-3
COMTECH TECHNOLOGY CO., LTD						
FM1200TSIM (2/4)						

SPECIFICATION						
MODULATOR						
4-3. OUTPUT SYSTEM CHARACTERISTICS						
	PARAMETER	SPECIFICATION			UNIT	REMARK
		MIN	TYP	MAX		
4-3-1	VIDEO CARRIER FREQUENCY	-50	f <sub>p</sub>	+50	KHZ	TEST AT 25°C TEMPERATURE AND 65%RH OF HUMIDITY. fs1 6.0MHZ fs2 6.5MHZ *OUTPUT CHANNEL
4-3-2	VIDEO OUTPUT LEVEL 1100~1300MHZ	15	17	19		
4-3-3	AUDIO OUTPUT LEVEL DIFFERENCE(P/S RATIO) Fp:1100~1300MHZ	22	27	32	dB	
4-3-4	AUDIO CARRIER FREQUENCY	-8	f <sub>s1</sub>	+8	KHZ	INPUT SIGNAL : NONE THE MEASUREMENT IS TAKEN AFTER 30 sec. FROM THE POWER-ON.
4-3-5	AUDIO MODULATOR fs1 fs2	60	70	80	KHZ	MEASUREMENT DIFFERENCE VIDEO OF CARRIER
4-3-6	OUT-BAND SPURIOUS	45	50		dB	FREQUENCY OUTPUT LEVEL FOR 0-1GHZ. EXCEPT TO f <sub>p</sub> . f <sub>p</sub> +/-f <sub>s</sub> AGAINST VIDEO CARRIER OUTPUT LEVEL.
4-3-7	OUTPUT IMPEDANCE		75		Ω	UNBALANCED.
5-1 PLL SECTION CHARACTERISTICS						
COMTECH TECHNOLOGY CO., LTD						
FM1200TSIM (3/4)						

SPECIFICATION											
BS TUNER											
NO.	ITEM	SPECIFICATION								NOTES	
5-2.	IIC 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 DATA FORMAT)									
	(3) SDA SCL INPUT IMPEDANCE	SDA/SCL ARE IN THE HIGH IMPEDANCE AND THERE SHOULD BE NO RELIABILITY PROBLEM WITH 5V CONTINUALLY ON THE SDA/SCL, IF POWER SUPPLY IS SWITCHED OFF.									
	(4) DATA FORMAT	MSB				LSB					
		1	1	0	0	0	MA1	MA0	0	A	BYTE1
	PROGRAMMABLE DIVIDER	0	2	2	2	2	2	2	2	A	BYTE2
	PROGRAMMABLE DIVIDER	2	7	6	5	4	3	2	1	0	A
	CHARGE PUMP AND TEST BITS	1	(0) CP	T1	T0	1	1	1	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	MA0	1	A	BYTE1
	STATUS BYTE	POR	FL	I2	I1	I0	A2	A1	A0	A	BYTE2
	TABLE 2 READ DATA 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 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.										
COMTECH TECHNOLOGY CO., LTD						FM1200TSIM (4/4)					

