

THEORY OF OPERATION

The VXM-2200/2300 is a portable DVD Player. That can uses your car. FM transmitter model is wireless system.(Figure 1)
Do not need to audio cable for car dvd system. Can uses antenna (Figure 3)

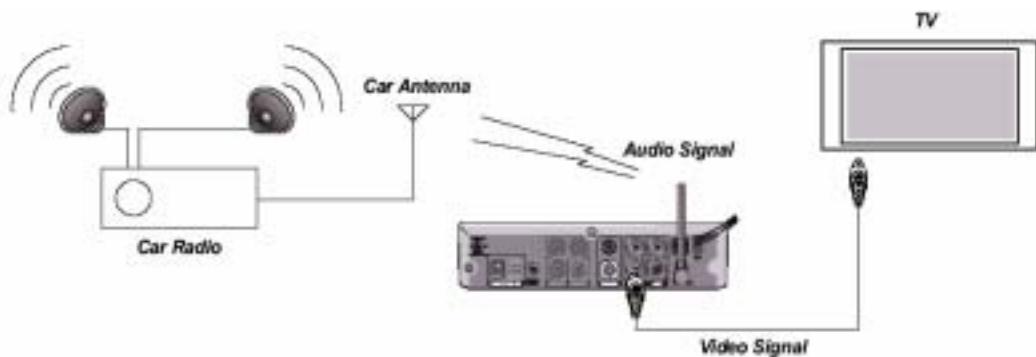


Figure 1. Wireless FM transmitter

FM stereo transmitter IC consists of a stereo modulator for generating stereo composite signals and a FM transmitter for broadcasting a FM signal on the air. The stereo modulator generates a composite signal which consists of the MAIN, SUB, and pilot signal from a 38kHz oscillator. The FM transmitter radiates FM wave on the air by modulating the carrier signal with a composite signal.

Features

- 1) It is possible to improve the timbre because it has the pre-emphasis circuit, limiter circuit, and the low-pass filter circuit.(Figure 4)
- 2) Built-in pilot-tone system FM stereo modulator circuit.
- 3) The transmission frequency is stable because it has a PLL system FM transmitter circuit.
- 4) Electrical specifications(Figure 2)
- 5) FM Broadcast band :88.1Mhz to 88.9MHz

Below we can see a photo of the VXM-2200/2300 PCB(Figure 5)

●Electrical characteristics (Unless otherwise noted, $T_a = 25^\circ\text{C}$, $V_{cc} = 5.0\text{V}$ Signal source : $f_h = 400\text{Hz}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	
Quiescent current	I_q	14	20	28	mA		
Channel separation	Sep	25	40	—	dB	$V_{in} = -20\text{dBV}$ $L = R, R = N$	
Total harmonic distortion	THD	—	0.1	0.3	%	$V_{in} = -20\text{dBV}$ $L = R$	
Channel balance	C.B	-2	0	+2	dB	$V_{in} = -20\text{dBV}$ $L = R$	
Input output gain	G_V	-2	0	+2	dB	$V_{in} = -20\text{dBV}$ $L = R$	
Pilot modulation rate	M_F	12	15	18	%	$V_{in} = -20\text{dBV}, L = R$ Pin5	
Sub carrier rejection ratio	SCR	—	-30	-20	dB	$V_{in} = -20\text{dBV}$ $L = R$	
Pre-emphasis time constant	t_{PE}	40	50	60	μs	$V_{in} = -20\text{dBV}$ $L = R$	
Limiter input level	$V_{in,lim}$	-16	-13	-10	dBV	Output level at 1dB gain compression	
LPF cut off frequency	f_{LPF}	12	15	18	kHz	$V_{in} = -3\text{dB}$ Pin2,21 Open	
Transmission output level	V_{tx}	96	99	102	dBuV	$f_{tx} = 107.0\text{MHz}$	

Figure 2. Electrical specifications

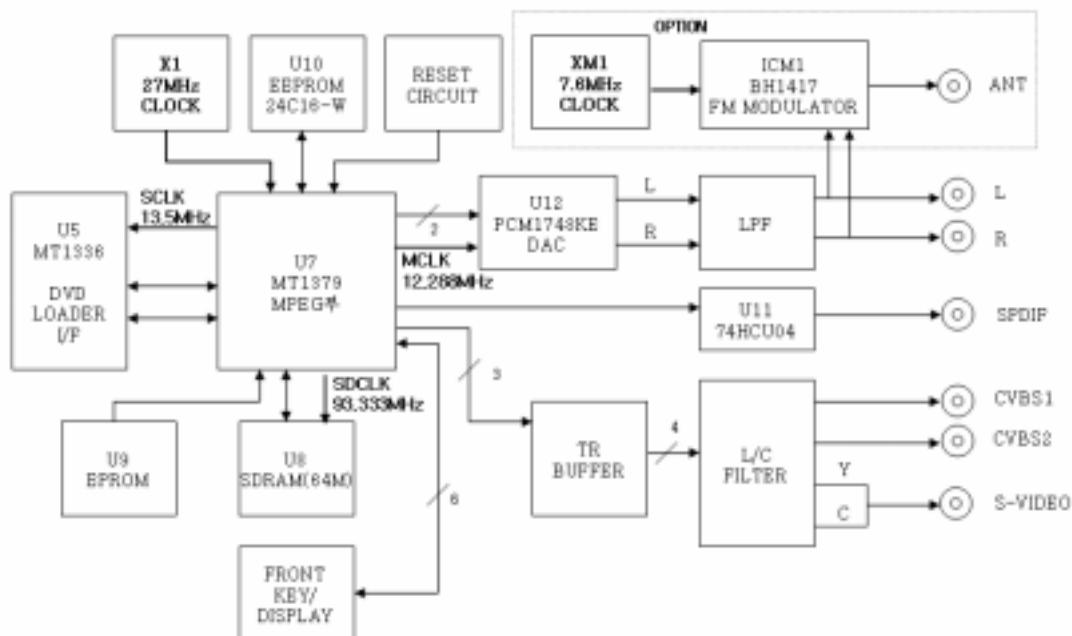


Figure 3. VXM-2200/2300 Block Diagram

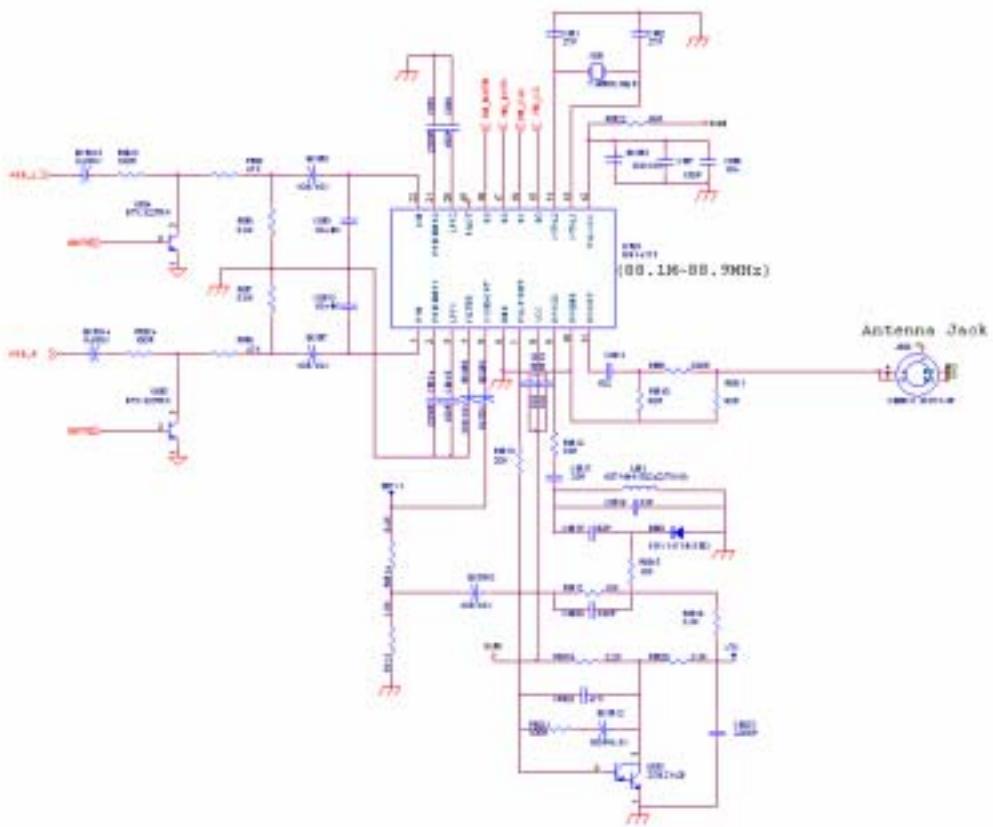


Figure 4. FM modulator circuit



Figure 5. Photo of the VXM-2200/2300 PCB