AM Medium-Wave Phased Locked Loop Transmitter 100mW

Features:

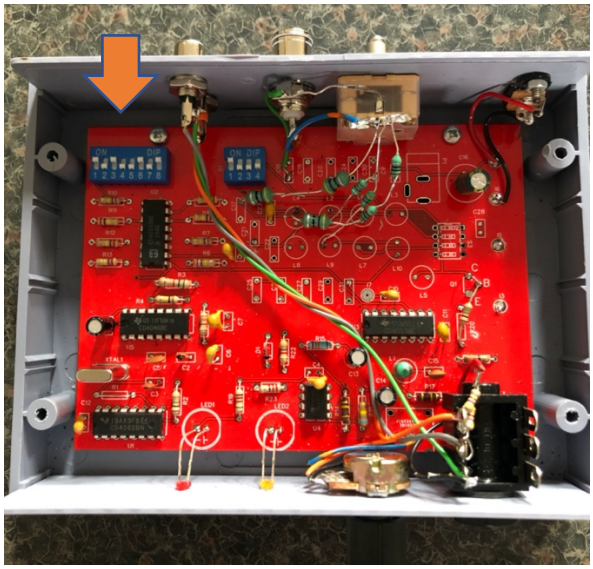
- Digital IC design
- 12 Volt DC powered (UK adapter included)
- 9KHz channel spacing for EU or 10KHz for USA (state when ordering)
- Inherently stable
- Audio input with Modulation depth (volume) via ¼" Jack socket on Front, RCA Phono sockets on rear.
- Low Distortion audio, 10kHz bandwidth
- TV Coaxial Aerial Socket on rear of unit
- up to 100mW RF output
- 531 to 1629KHz selectable internally
- Left LED indicates Power, Right LED indicates audio input overload.
- Ready-made, ready to go!

This AM Transmitter is a self-contained unit housed in an ABS box of dimensions 150mm by 130mm by 40mm. Covers frequencies 531Khz to 1629 KHz. Powered by an external power adapter providing 12V DC, it is plugged into the rear socket. Audio input via a ¼ inch jack socket is on the front which mono's up a stereo feed of between 100mV and 1V. So, a Mono or stereo feed is suitable for use. An overload LED is fitted to show too much input signal. Avoid the LED illuminating to stop a distorted signal. Added modification is the addition of RCA phono sockets on rear, for stereo input from, say, a CD Player.

The aerial is connected to the rear TV Coaxial style socket via the plug supplied.
An aerial can take many forms, from a short whip, short run wire, to a full quarter wave end fed dipole. Or you could make up a base loaded vertical with a loading coil of approximately 100 turns on a 2" plastic pipe. The better the aerial the further this little transmitter will radiate!
Expect about 20 to 200 feet range, depending on local conditions, with the standard wire antenna supplied. The signal should be very strong everywhere within your home. If you want to maximize your range, check out our instructions for building a Part 15 compliant outdoor base-loaded vertical antenna. Expect ½ to ¾ mile strong-signal range as received on car radio. ANTENNA CONSIDERATIONS For many applications, a 5 – 20-foot wire antenna connected to the centre pin of the "RF OUT" connector will produce satisfactory results. Another simple but effective hint is to connect the chassis "ground" to a good earth ground like a cold-water pipe, etc. A long wire of around 12 - 20 feet will give very good results!

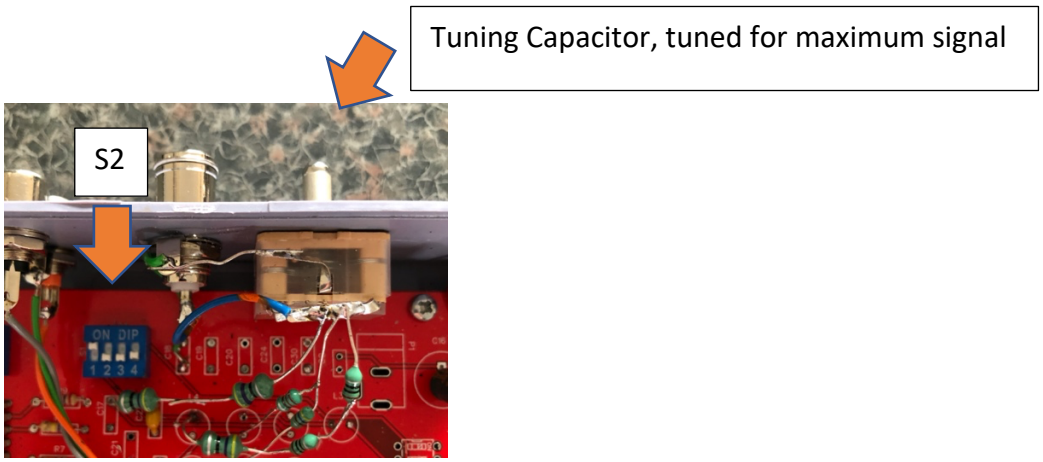
The transmitter is supplied tuned to the frequency specified at the point of order. You can however quite easily change frequency yourself. Unscrew the 4 screws on the underside and carefully remove the top lid. Follow the instructions below using the frequency table attached.

Setting S1 equency of the Transmitter



To set the frequency, alter the switch settings on the 8-way DIP switch.
S1 is left and S8 is right as labelled. (see table shown further below)
For example, to set frequency of 1611KHz as seen above, switch settings should be 1 0 1 1 0 0 1 0, which on the switch means that S1.1 (the left-most switch) is up, S1.2 is down, S1.3 is up, S1.4 is up, S1.5 is down, S1.6 is down, S1.7 is up, and 1.8 is down. (up is 'on', down is 'off')
Another example, to set frequency of 1305KHz, switch settings should be 1 0 0 1 0 0 0, so S1.1 is up, S1.2 and S1.3 are down, S1.4 is up and S1.5, 1.6, 1.7 and 1.8 are down.

The RF output needs to be adjusted to maximise the RF signal. This is done by setting the internal switch S2 to the appropriate frequency range setting and then adjusting the output tuning capacitor for maximum signal. Position 1 is to the left, as shown below.



The Tuning Capacitor is best set mid-way to start, then adjust slowly either way and test the distance of the signal. Using this method, the signal can be 'peaked' for maximum range. Alternatively, use an Oscilloscope or a 'Field Strength Meter' to make this adjustment. Its easy once you get the hang of it!

S2		Frequency
4		530-801
3		801-1089
2		1089-1449
1		1339-1638

Frequency Setting on S1 (kHz)(Metres)

Preset	S1	S2 S3 S4 S5 S6 S7 S8						
531	565	00111010	621	483	01000100	711	422	01001110
540	555	00111011	630	476	01000101	720	416	01001111
549	546	00111100	639	469	01000110	729	411	01010000
558	537	00111101	648	463	01000111	738	406	01010001
567	529	00111110	657	456	01001000	747	441	01010010
576	520	00111111	666	450	01001001	756	397	01010011
585	512	01000000	675	444	01001010	765	392	01011100
594	505	01000001	684	438	01001011	774	387	01010101
603	497	01000010	693	433	01001100	783	383	01010110
612	480	01000011	702	427	01001101	792	378	01010111
801	374	01011000	1062	282	01110101	1314	228	10010001
810	370	01011001	1071	280	01110110	1323	227	10010010
819	366	01011010	1080	278	01110111	1332	225	10010011
828	362	01011011	1089	275	01111000	1341	224	10010100
837	358	01011100	1098	273	01111001	1350	222	10010101
846	354	01011101	1107	271	01111010	1359	221	10010110
855	351	01011110	1116	269	01111011	1368	219	10010111
873	343	01100000	1125	266	01111100	1377	218	10011000
882	340	01100001	1134	264	01111101	1386	216	10011001
891	336	01100010	1143	252	01111110	1395	215	10011010
900	333	01100011	1152	260	01111111	1404	214	10011011
909	330	01100100	1161	258	10000000	1413	212	10011100
918	327	01100101	1170	256	10000001	1422	211	10011101
927	323	01100110	1179	254	10000010	1431	209	10011110
936	320	01100111	1188	252	10000011	1440	208	11001111
945	317	01101000	1197	250	10000100	1449	207	10100000
954	314	01101001	1206	249	10000101	1458	206	10100001

963	311	01101010	1215	247	10000110	1467	204	10100010
972	308	01101011	1224	245	10000111	1476	203	10100011
981	306	01101100	1233	243	10001000	1485	202	10100100
990	303	01101101	1242	241	10001001	1494	201	10100101
999	300	01101110	1251	240	10001010	1503	199	10100110
1008	297	01101111	1260	238	10001011	1512	198	10100111
1017	295	01110000	1269	236	10001100	1521	197	10101000
1026	292	01110001	1278	235	10001101	1530	196	10101001
1035	290	01110010	1287	233	10001110	1539	195	10101010
1044	287	01110011	1296	231	10011111	1548	194	10101011
1053	285	01110100	1305	230	10010000	1557	193	10101100
1566	191	10101101	1593	188	10110000	1620	185	10110011
1575	190	10101110	1602	187	10110001	1629	184	10110100
1584	189	10111111	1611	186	10110010	1638	183	10110101

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