

## AM Medium-Wave Phased Locked Loop Transmitter 100mW with Tuning Display Meter



### 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 RCA Phono sockets.
- Low Distortion audio, 10kHz bandwidth
- RF output on RCA 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. Tuning 5 LED's scale.
- 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 2 RCA Phono sockets on the front which mono's up a stereo feed of between 100mV and 1V. for stereo input from, say, a CD Player. 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.

The aerial is connected to the rear RCA Phono socket via the plug supplied.

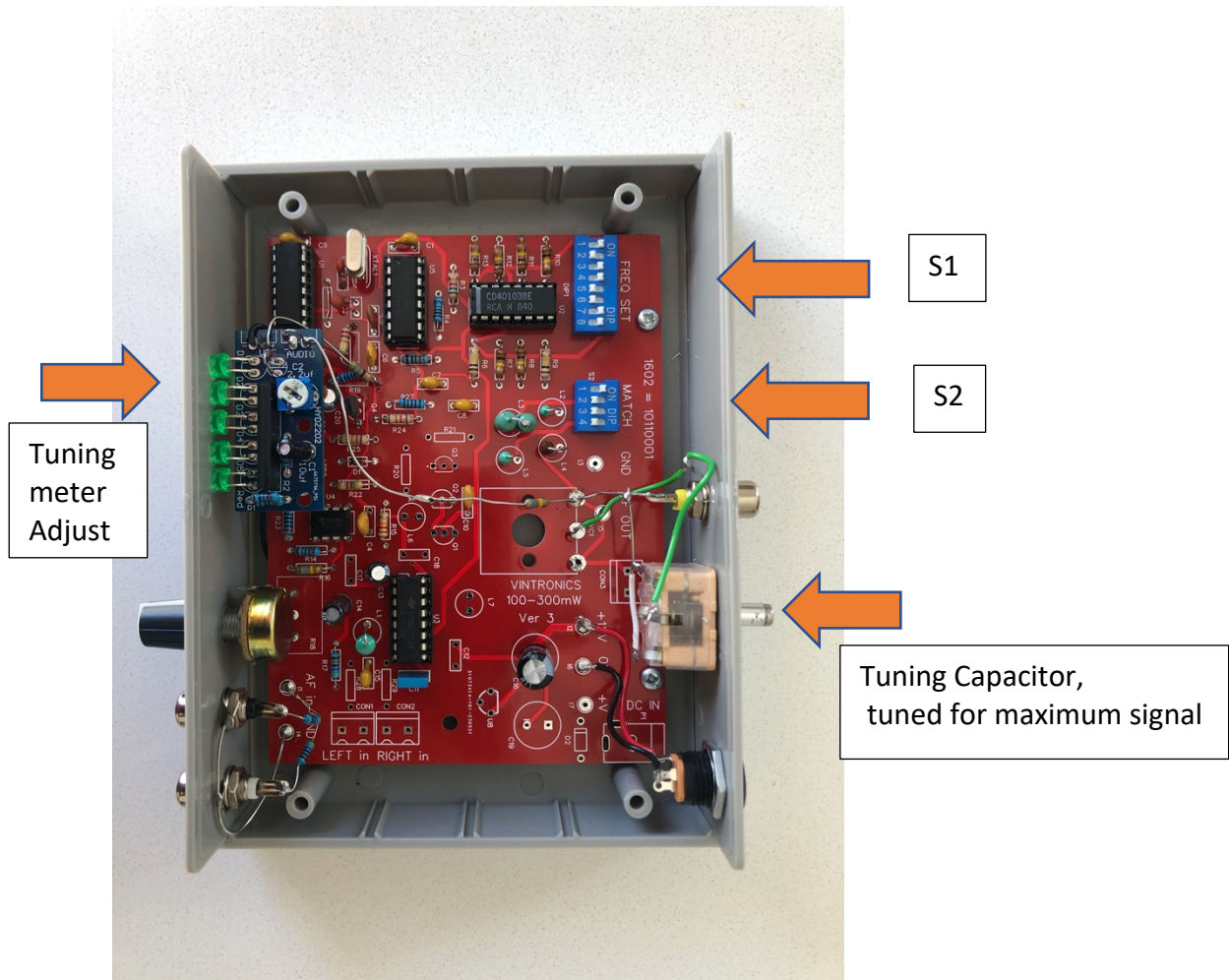
An aerial can take many forms, from a short whip, short run wire, to a full quarter wave end fed dipole. Or you could make up a base loaded vertical with a loading coil of approximately 100 turns on a 2" plastic pipe. The better the aerial the further this little transmitter will radiate!

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.

NOTE: If you observe hum on the audio signal, it's because the output tuning capacitor is not correctly set. Adjust it for minimum hum on audio. Also, the audio input should be tied to Ground. You can also use a 'linear' power supply which stabilises the DC power.

Setting the Frequency 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')

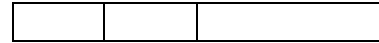
Another example, to set frequency of 1305KHz, switch settings should be 1 0 0 1 0 0 0, so S1.1 is up, S1.2 and S1.3 are down, S1.4 is up and S1.5, 1.6, 1.7 and 1.8 are down.

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.

This is done by turning the control for maximum LED to be lit. Position 1 is to the left, as shown below.

The sensitivity of the LED signal meter can be adjusted if needed by turning the preset on the little display circuit board.

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



The Tuning Capacitor is adjusted for max signal as shown on the front green LEDs

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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