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13cm transmitter technical notes

This document contains important technical information to help you use your 13cm transmitter. This document is provided as-is, without any warranty.

Power supply

The transmitter requires a supply of supply of 12 to 18V DC, **tip positive**. Reverse polarity will cause very serious damage. The transmitter gives best output power at 13.8V or more. Do NOT use less than 12V.

Setting up the 13cm transmitter

The transmitter is normally supplied set for wide deviation. The pre-set pot on the board provides video gain control (=deviation).

Transmit frequency is set using the DIP switches in accordance with the tables in this document.

Video and audio connections

Video and audio connections (inputs on the Tx and outputs on the Rx) are as follows:

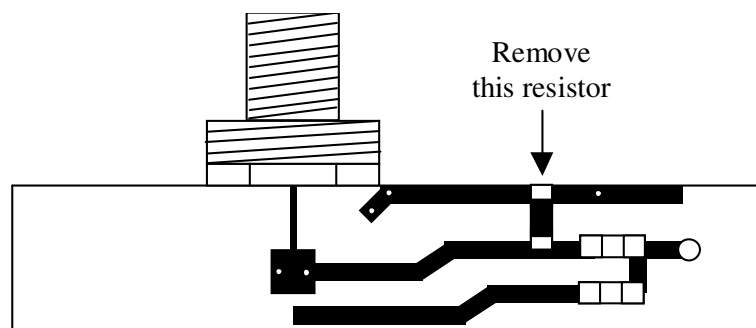
- Yellow phono socket - composite video
- White phono socket - audio for/from 6.0MHz subcarrier
- Red phono socket - audio for/from 6.5MHz subcarrier

Pre-emphasis/de-emphasis

The transmitter does not include video pre-emphasis. A pre-emphasis circuit is shown at www.G1MFG.com/pcb/ or you can get the details by sending a large stamped self-addressed envelope marked "pre-emphasis" to the address at the end of this document.

Increasing the power output

The power output of the 13cm transmitter can be increased from the standard 20mW or so to typically around 30mW-35mW by removing the surface mount resistor beside the two capacitors in the output socket compartment within the metal transmitter module. Be careful - there is no room to make a mistake. *This modification will void your guarantee.*



The following adjustment should ONLY be carried out if you have access to a suitable power meter. You may also be able to increase the power output by adjusting the two air-spaced coils within the transmitter module. Be careful, because the coils are fragile and will not withstand repeated adjustments.

Operating frequencies

The following table shows the DIP switch settings for the transmitter. Notes: 0=off, 1=on (toward the voltage regulator), and SW1 is the switch nearest the IC.

Cautions: This transmitter is capable of going outside the 13cm amateur band allocation.
This transmitter is not authorised for "license-free" operation. An appropriate transmitting license is required to operate the transmitter.

Frequency (MHz)	SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	SW 7	SW 8	Frequency (MHz)	SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	SW 7	SW 8
2304	0	0	0	0	0	0	0	0	2345	1	0	0	1	0	1	0	0
2305	1	0	0	0	0	0	0	0	2346	0	1	0	1	0	1	0	0
2306	0	1	0	0	0	0	0	0	2347	1	1	0	1	0	1	0	0
2307	1	1	0	0	0	0	0	0	2348	0	0	1	1	0	1	0	0
2308	0	0	1	0	0	0	0	0	2349	1	0	1	1	0	1	0	0
2309	1	0	1	0	0	0	0	0	2350	0	1	1	1	0	1	0	0
2310	0	1	1	0	0	0	0	0	2351	1	1	1	1	0	1	0	0
2311	1	1	1	0	0	0	0	0	2352	0	0	0	0	1	1	0	0
2312	0	0	0	1	0	0	0	0	2353	1	0	0	0	1	1	0	0
2313	1	0	0	1	0	0	0	0	2354	0	1	0	0	1	1	0	0
2314	0	1	0	1	0	0	0	0	2355	1	1	0	0	1	1	0	0
2315	1	1	0	1	0	0	0	0	2356	0	0	1	0	1	1	0	0
2316	0	0	1	1	0	0	0	0	2357	1	0	1	0	1	1	0	0
2317	1	0	1	1	0	0	0	0	2358	0	1	1	0	1	1	0	0
2318	0	1	1	1	0	0	0	0	2359	1	1	1	0	1	1	0	0
2319	1	1	1	1	0	0	0	0	2360	0	0	0	1	1	1	0	0
2320	0	0	0	0	1	0	0	0	2361	1	0	0	1	1	1	0	0
2321	1	0	0	0	1	0	0	0	2362	0	1	0	1	1	1	0	0
2322	0	1	0	0	1	0	0	0	2363	1	1	0	1	1	1	0	0
2323	1	1	0	0	1	0	0	0	2364	0	0	1	1	1	1	0	0
2324	0	0	1	0	1	0	0	0	2365	1	0	1	1	1	1	0	0
2325	1	0	1	0	1	0	0	0	2366	0	1	1	1	1	1	0	0
2326	0	1	1	0	1	0	0	0	2367	1	1	1	1	1	1	0	0
2327	1	1	1	0	1	0	0	0	2368	0	0	0	0	0	0	1	0
2328	0	0	0	1	1	0	0	0	2369	1	0	0	0	0	0	1	0
2329	1	0	0	1	1	0	0	0	2370	0	1	0	0	0	0	1	0
2330	0	1	0	1	1	0	0	0	2371	1	1	0	0	0	0	1	0
2331	1	1	0	1	1	0	0	0	2372	0	0	1	0	0	0	1	0
2332	0	0	1	1	1	0	0	0	2373	1	0	1	0	0	0	1	0
2333	1	0	1	1	1	0	0	0	2374	0	1	1	0	0	0	1	0
2334	0	1	1	1	1	0	0	0	2375	1	1	1	0	0	0	1	0
2335	1	1	1	1	1	0	0	0	2376	0	0	0	1	0	0	1	0
2336	0	0	0	0	0	1	0	0	2377	1	0	0	1	0	0	1	0
2337	1	0	0	0	0	1	0	0	2378	0	1	0	1	0	0	1	0
2338	0	1	0	0	0	1	0	0	2379	1	1	0	1	0	0	1	0
2339	1	1	0	0	0	1	0	0	2380	0	0	1	1	0	0	1	0
2340	0	0	1	0	0	1	0	0	2381	1	0	1	1	0	0	1	0
2341	1	0	1	0	0	1	0	0	2382	0	1	1	1	0	0	1	0
2342	0	1	1	0	0	1	0	0	2383	1	1	1	1	0	0	1	0
2343	1	1	1	0	0	1	0	0	2384	0	0	0	0	1	0	1	0
2344	0	0	0	1	0	1	0	0	2385	1	0	0	0	1	0	1	0

Frequency (MHz)	SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	SW 7	SW 8
2386	0	1	0	0	1	0	1	0
2387	1	1	0	0	1	0	1	0
2388	0	0	1	0	1	0	1	0
2389	1	0	1	0	1	0	1	0
2390	0	1	1	0	1	0	1	0
2391	1	1	1	0	1	0	1	0
2392	0	0	0	1	1	0	1	0
2393	1	0	0	1	1	0	1	0
2394	0	1	0	1	1	0	1	0
2395	1	1	0	1	1	0	1	0
2396	0	0	1	1	1	0	1	0
2397	1	0	1	1	1	0	1	0
2398	0	1	1	1	1	0	1	0
2399	1	1	1	1	1	0	1	0
2400	0	0	0	0	0	1	1	0
2401	1	0	0	0	0	1	1	0
2402	0	1	0	0	0	1	1	0
2403	1	1	0	0	0	1	1	0
2404	0	0	1	0	0	1	1	0
2405	1	0	1	0	0	1	1	0
2406	0	1	1	0	0	1	1	0
2407	1	1	1	0	0	1	1	0
2408	0	0	0	1	0	1	1	0
2409	1	0	0	1	0	1	1	0
2410	0	1	0	1	0	1	1	0
2411	1	1	0	1	0	1	1	0
2412	0	0	1	1	0	1	1	0
2413	1	0	1	1	0	1	1	0
2414	0	1	1	1	0	1	1	0
2415	1	1	1	1	0	1	1	0
2416	0	0	0	0	1	1	1	0
2417	1	0	0	0	1	1	1	0
2418	0	1	0	0	1	1	1	0
2419	1	1	0	0	1	1	1	0
2420	0	0	1	0	1	1	1	0
2421	1	0	1	0	1	1	1	0
2422	0	1	1	0	1	1	1	0
2423	1	1	1	0	1	1	1	0
2424	0	0	0	1	1	1	1	0
2425	1	0	0	1	1	1	1	0
2426	0	1	0	1	1	1	1	0
2427	1	1	0	1	1	1	1	0
2428	0	0	1	1	1	1	1	0
2429	1	0	1	1	1	1	1	0
2430	0	1	1	1	1	1	1	0
2431	1	1	1	1	1	1	1	0
2432	0	0	0	0	0	0	0	1

Frequency (MHz)	SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	SW 7	SW 8
2433	1	0	0	0	0	0	0	1
2434	0	1	0	0	0	0	0	1
2435	1	1	0	0	0	0	0	1
2436	0	0	1	0	0	0	0	1
2437	1	0	1	0	0	0	0	1
2438	0	1	1	0	0	0	0	1
2439	1	1	1	0	0	0	0	1
2440	0	0	0	1	0	0	0	1
2441	1	0	0	1	0	0	0	1
2442	0	1	0	1	0	0	0	1
2443	1	1	0	1	0	0	0	1
2444	0	0	1	1	0	0	0	1
2445	1	0	1	1	0	0	0	1
2446	0	1	1	1	0	0	0	1
2447	1	1	1	1	0	0	0	1
2448	0	0	0	0	1	0	0	1
2449	1	0	0	0	1	0	0	1
2450	0	1	0	0	1	0	0	1
2451	1	1	0	0	1	0	0	1
2452	0	0	1	0	1	0	0	1
2453	1	0	1	0	1	0	0	1
2454	0	1	1	0	1	0	0	1
2455	1	1	1	0	1	0	0	1
2456	0	0	0	1	1	0	0	1
2457	1	0	0	1	1	0	0	1
2458	0	1	0	1	1	0	0	1
2459	1	1	0	1	1	0	0	1
2460	0	0	1	1	1	0	0	1
2461	1	0	1	1	1	0	0	1
2462	0	1	1	1	1	0	0	1
2463	1	1	1	1	1	0	0	1
2464	0	0	0	0	0	1	0	1
2465	1	0	0	0	0	1	0	1
2466	0	1	0	0	0	1	0	1
2467	1	1	0	0	0	1	0	1
2468	0	0	1	0	0	1	0	1
2469	1	0	1	0	0	1	0	1
2470	0	1	1	0	0	1	0	1
2471	1	1	1	0	0	1	0	1
2472	0	0	0	1	0	1	0	1
2473	1	0	0	1	0	1	0	1
2474	0	1	0	1	0	1	0	1
2475	1	1	0	1	0	1	0	1
2476	0	0	1	1	0	1	0	1
2477	1	0	1	1	0	1	0	1
2478	0	1	1	1	0	1	0	1
2479	1	1	1	1	0	1	0	1

