Frequency (MHz)	SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	SW 7	SW 8
1321.0	0	1	0	0	0	1	0	1
1321.5	1	1	0	0	0	1	0	1
1322.0	0	0	1	0	0	1	0	1
1322.5	1	0	1	0	0	1	0	1
1323.0	0	1	1	0	0	1	0	1
1323.5	1	1	1	0	0	1	0	1
1324.0	0	0	0	1	0	1	0	1
1324.5	1	0	0	1	0	1	0	1
1325.0	0	1	0	1	0	1	0	1
1325.5	1	1	0	1	0	1	0	1
1326.0	0	0	1	1	0	1	0	1
1326.5	1	0	1	1	0	1	0	1
1327.0	0	1	1	1	0	1	0	1
1327.5	1	1	1	1	0	1	0	1
1328.0	0	0	0	0	1	1	0	1
1328.5	1	0	0	0	1	1	0	1
1329.0	0	1	0	0	1	1	0	1
1329.5	1	1	0	0	1	1	0	1
1330.0	0	0	1	0	1	1	0	1
1330.5	1	0	1	0	1	1	0	1
1331.0	0	1	1	0	1	1	0	1
1331.5	1	1	1	0	1	1	0	1
1332.0	0	0	0	1	1	1	0	1
1332.5	1	0	0	1	1	1	0	1
1333.0	0	1	0	1	1	1	0	1
1333.5	1	1	0	1	1	1	0	1
1334.0	0	0	1	1	1	1	0	1
1334.5	1	0	1	1	1	1	0	1
1335.0	0	1	1	1	1	1	0	1
1335.5	1	1	1	1	1	1	0	1
1336.0	0	0	0	0	0	0	1	1
1336.5	1	0	0	0	0	0	1	1
1337.0	0	1	0	0	0	0	1	1
1337.5	1	1	0	0	0	0	1	1
1338.0	0	0	1	0	0	0	1	1
1338.5	1	0	1	0	0	0	1	1
1339.0	0	1	1	0	0	0	1	1
1339.5	1	1	1	0	0	0	1	1
1340.0	0	0	0	1	0	0	1	1
1340.5	1	0	0	1	0	0	1	1
1341.0	0	1	0	1	0	0	1	1
1341.5	1	1	0	1	0	0	1	1
1342.0	0	0	1	1	0	0	1	1
1342.5	1	0	1	1	0	0	1	1
1343.0	0	1	1	1	0	0	1	1
1343.5	1	1	1	1	0	0	1	1
1344.0	0	0	0	0	1	0	1	1

Frequency (MHz)	SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	SW 7	SW 8
1344.5	1	0	0	0	1	0	1	1
1345.0	0	1	0	0	1	0	1	1
1345.5	1	1	0	0	1	0	1	1
1346.0	0	0	1	0	1	0	1	1
1346.5	1	0	1	0	1	0	1	1
1347.0	0	1	1	0	1	0	1	1
1347.5	1	1	1	0	1	0	1	1
1348.0	0	0	0	1	1	0	1	1
1348.5	1	0	0	1	1	0	1	1
1349.0	0	1	0	1	1	0	1	1
1349.5	1	1	0	1	1	0	1	1
1350.0	0	0	1	1	1	0	1	1
1350.5	1	0	1	1	1	0	1	1
1351.0	0	1	1	1	1	0	1	1
1351.5	1	1	1	1	1	0	1	1
1352.0	0	0	0	0	0	1	1	1
1352.5	1	0	0	0	0	1	1	1
1353.0	0	1	0	0	0	1	1	1
1353.5	1	1	0	0	0	1	1	1
1354.0	0	0	1	0	0	1	1	1
1354.5	1	0	1	0	0	1	1	1
1355.0	0	1	1	0	0	1	1	1
1355.5	1	1	1	0	0	1	1	1
1356.0	0	0	0	1	0	1	1	1
1356.5	1	0	0	1	0	1	1	1
1357.0	0	1	0	1	0	1	1	1
1357.5	1	1	0	1	0	1	1	1
1358.0	0	0	1	1	0	1	1	1
1358.5	1	0	1	1	0	1	1	1
1359.0	0	1	1	1	0	1	1	1
1359.5	1	1	1	1	0	1	1	1
1360.0	0	0	0	0	1	1	1	1
1360.5	1	0	0	0	1	1	1	1
1361.0	0	1	0	0	1	1	1	1
1361.5	1	1	0	0	1	1	1	1
1362.0	0	0	1	0	1	1	1	1
1362.5	1	0	1	0	1	1	1	1
1363.0	0	1	1	0	1	1	1	1
1363.5	1	1	1	0	1	1	1	1
1364.0	0	0	0	1	1	1	1	1
1364.5	1	0	0	1	1	1	1	1
1365.0	0	1	0	1	1	1	1	1
1365.5	1	1	0	1	1	1	1	1
1366.0	0	0	1	1	1	1	1	1
1366.5	1	0	1	1	1	1	1	1
1367.0	0	1	1	1	1	1	1	1
1367.5	1	1	1	1	1	1	1	1

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23/24cm transmitter and receiver technical notes

This document contains technical information to help you use your 23/24cm transmitter and/or receiver. Latest technical information can be found at http://www.G1MFG.com.

Power supply

The transmitter and receiver require a supply of 12 to 18V DC, **tip (centre) positive**. Reverse polarity will cause very serious damage. Do NOT use less than 12V.

- The transmitter gives best output power at 13.8V or more.
- The heatsinks on the receiver get very hot over 15V, and run coolest at 12V.

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

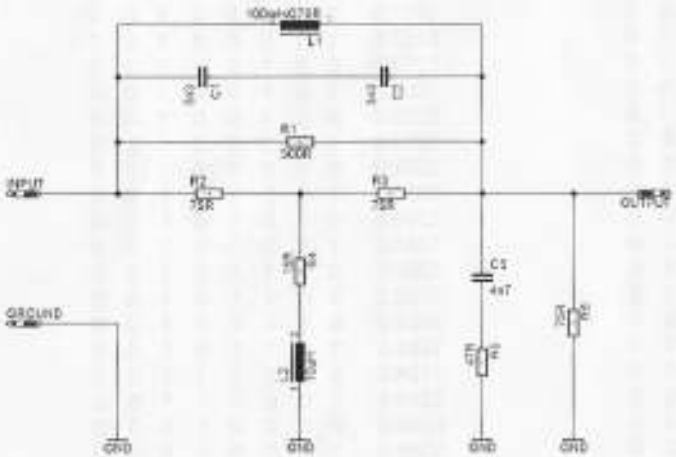
Setting up the 23/24cm transmitter

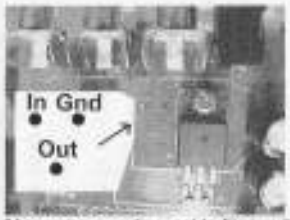
As supplied, the transmitter has an input impedance in the region of 220 ohms, and the video gain (deviation) is set using the pre-set pot on the board.

CCIR pre-emphasis

The following circuit can be used to add CCIR pre-emphasis. Remove the existing deviation preset pot to fit the circuit. Deviation can be set using the pre-set pot inside the RF module.

A full article describing this modification is available at www.G1MFG.com/pcb/





Above: remove dev. pot to fit circuit
Below: deviation pot inside module

Setting up the 23/24cm receiver

The pre-set pot on the receiver is the video gain control. Set it for proper amplitude video output.

Special notes for Gold and Platinum receivers

These receivers are modified to improve the sensitivity and picture performance. On some receivers the receive centre frequencies shift slightly from those in the tuning charts shown here. This is only really noticeable when trying to receive weak signals, and the offset is constant across the band. You may get best results by tuning a little lower or higher than whatever frequency you want to receive. If you're brave, open the RF module and VERY SLIGHTLY adjust the air-spaced coil beside the larger IC. This is the video demodulator coil, and tweaking its length by less than the thickness of a hair will bring the receiver onto frequency. Be warned: the coil is fragile, and you only need to make a SLIGHT adjustment. Tweak it too much and the receiver will go way off frequency.

If you have a Gold receiver, you can add CCIR de-emphasis using details at www.G1MFG.com/pcb/.

23/24cm transmitter and receiver operating frequencies

The following tables show the DIP switch settings for both the transmitter and receiver. Note that 0=off and 1=on, and SW1 is the switch farthest from the metal box.

Caution: some of these frequencies are outside the 23/24cm amateur band allocation.

Frequency (MHz)	SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	SW 7	SW 8
1240.0	0	0	0	0	0	0	0	0
1240.5	1	0	0	0	0	0	0	0
1241.0	0	1	0	0	0	0	0	0
1241.5	1	1	0	0	0	0	0	0
1242.0	0	0	1	0	0	0	0	0
1242.5	1	0	1	0	0	0	0	0
1243.0	0	1	1	0	0	0	0	0
1243.5	1	1	1	0	0	0	0	0
1244.0	0	0	0	1	0	0	0	0
1244.5	1	0	0	1	0	0	0	0
1245.0	0	1	0	1	0	0	0	0
1245.5	1	1	0	1	0	0	0	0
1246.0	0	0	1	1	0	0	0	0
1246.5	1	0	1	1	0	0	0	0
1247.0	0	1	1	1	0	0	0	0
1247.5	1	1	1	1	0	0	0	0
1248.0	0	0	0	0	1	0	0	0
1248.5	1	0	0	0	1	0	0	0
1249.0	0	1	0	0	1	0	0	0
1249.5	1	1	0	0	1	0	0	0
1250.0	0	0	1	0	1	0	0	0
1250.5	1	0	1	0	1	0	0	0
1251.0	0	1	1	0	1	0	0	0
1251.5	1	1	1	0	1	0	0	0
1252.0	0	0	0	1	1	0	0	0
1252.5	1	0	0	1	1	0	0	0
1253.0	0	1	0	1	1	0	0	0
1253.5	1	1	0	1	1	0	0	0
1254.0	0	0	1	1	1	0	0	0
1254.5	1	0	1	1	1	0	0	0
1255.0	0	1	1	1	1	0	0	0
1255.5	1	1	1	1	1	0	0	0
1256.0	0	0	0	0	0	1	0	0
1256.5	1	0	0	0	0	1	0	0
1257.0	0	1	0	0	0	1	0	0
1257.5	1	1	0	0	0	1	0	0
1258.0	0	0	1	0	0	1	0	0
1258.5	1	0	1	0	0	1	0	0
1259.0	0	1	1	0	0	1	0	0
1259.5	1	1	1	0	0	1	0	0
1260.0	0	0	0	1	0	1	0	0
1260.5	1	0	0	1	0	1	0	0
1261.0	0	1	0	1	0	1	0	0
1261.5	1	1	0	1	0	1	0	0
1262.0	0	0	1	1	0	1	0	0
1262.5	1	0	1	1	0	1	0	0
1263.0	0	1	1	1	0	1	0	0
1263.5	1	1	1	1	0	1	0	0
1264.0	0	0	0	0	1	1	0	0
1264.5	1	0	0	0	1	1	0	0
1265.0	0	1	0	0	1	1	0	0
1265.5	1	1	0	0	1	1	0	0
1266.0	0	0	1	0	1	1	0	0
1266.5	1	0	1	0	1	1	0	0
1267.0	0	1	1	0	1	1	0	0
1267.5	1	1	1	0	1	1	0	0
1268.0	0	0	0	1	1	1	0	0
1268.5	1	0	0	1	1	1	0	0

Frequency (MHz)	SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	SW 7	SW 8
1269.0	0	1	0	1	1	1	0	0
1269.5	1	1	0	1	1	1	0	0
1270.0	0	0	1	1	1	1	0	0
1270.5	1	0	1	1	1	1	0	0
1271.0	0	1	1	1	1	1	0	0
1271.5	1	1	1	1	1	1	0	0
1272.0	0	0	0	0	0	0	1	0
1272.5	1	0	0	0	0	0	1	0
1273.0	0	1	0	0	0	0	1	0
1273.5	1	1	0	0	0	0	1	0
1274.0	0	0	1	0	0	0	1	0
1274.5	1	0	1	0	0	0	1	0
1275.0	0	1	1	0	0	0	1	0
1275.5	1	1	1	0	0	0	1	0
1276.0	0	0	0	1	0	0	1	0
1276.5	1	0	0	1	0	0	1	0
1277.0	0	1	0	1	0	0	1	0
1277.5	1	1	0	1	0	0	1	0
1278.0	0	0	1	1	0	0	1	0
1278.5	1	0	1	1	0	0	1	0
1279.0	0	1	1	1	0	0	1	0
1279.5	1	1	1	1	0	0	1	0
1280.0	0	0	0	0	1	0	1	0
1280.5	1	0	0	0	1	0	1	0
1281.0	0	1	0	0	1	0	1	0
1281.5	1	1	0	0	1	0	1	0
1282.0	0	0	1	0	1	0	1	0
1282.5	1	0	1	0	1	0	1	0
1283.0	0	1	1	0	1	0	1	0
1283.5	1	1	1	0	1	0	1	0
1284.0	0	0	0	1	1	0	1	0
1284.5	1	0	0	1	1	0	1	0
1285.0	0	1	0	1	1	0	1	0
1285.5	1	1	0	1	1	0	1	0
1286.0	0	0	1	1	1	0	1	0
1286.5	1	0	1	1	1	0	1	0
1287.0	0	1	1	1	1	0	1	0
1287.5	1	1	1	1	1	0	1	0
1288.0	0	0	0	0	0	1	1	0
1288.5	1	0	0	0	0	1	1	0
1289.0	0	1	0	0	0	1	1	0
1289.5	1	1	0	0	0	1	1	0
1290.0	0	0	1	0	0	1	1	0
1290.5	1	0	1	0	0	1	1	0
1291.0	0	1	1	0	0	1	1	0
1291.5	1	1	1	0	0	1	1	0
1292.0	0	0	0	1	0	1	1	0
1292.5	1	0	0	1	0	1	1	0
1293.0	0	1	0	1	0	1	1	0
1293.5	1	1	0	1	0	1	1	0
1294.0	0	0	1	1	0	1	1	0
1294.5	1	0	1	1	0	1	1	0
1295.0	0	1	1	1	0	1	1	0
1295.5	1	1	1	1	0	1	1	0
1296.0	0	0	0	0	1	1	1	0
1296.5	1	0	0	0	1	1	1	0
1297.0	0	1	0	0	1	1	1	0
1297.5	1	1	0	0	1	1	1	0
1298.0	0	0	1	0	1	1	1	0
1298.5	1	0	1	0	1	1	1	0
1299.0	0	1	1	0	1	1	1	0
1299.5	1	1	1	0	1	1	1	0
1300.0	0	0	0	1	1	1	1	0
1300.5	1	0	0	1	1	1	1	0
1301.0	0	1	0	1	1	1	1	0
1301.5	1	1	0	1	1	1	1	0
1302.0	0	0	1	1	1	1	1	0
1302.5	1	0	1	1	1	1	1	0
1303.0	0	1	1	1	1	1	1	0
1303.5	1	1	1	1	1	1	1	0
1304.0	0	0	0	0	0	0	0	1
1304.5	1	0	0	0	0	0	0	1
1305.0	0	1	0	0	0	0	0	1
1305.5	1	1	0	0	0	0	0	1
1306.0	0	0	1	0	0	0	0	1
1306.5	1	0	1	0	0	0	0	1
1307.0	0	1	1	0	0	0	0	1
1307.5	1	1	1	0	0	0	0	1
1308.0	0	0	0	1	0	0	0	1
1308.5	1	0	0	1	0	0	0	1
1309.0	0	1	0	1	0	0	0	1
1309.5	1	1	0	1	0	0	0	1
1310.0	0	0	1	1	0	0	0	1
1310.5	1	0	1	1	0	0	0	1
1311.0	0	1	1	1	0	0	0	1
1311.5	1	1	1	1	0	0	0	1
1312.0	0	0	0	0	1	0	0	1
1312.5	1	0	0	0	1	0	0	1
1313.0	0	1	0	0	1	0	0	1
1313.5	1	1	0	0	1	0	0	1
1314.0	0	0	1	0	1	0	0	1
1314.5	1	0	1	0	1	0	0	1
1315.0	0	1	1	0	1	0	0	1
1315.5	1	1	1	0	1	0	0	1
1316.0	0	0	0	1	1	0	0	1
1316.5	1	0	0	1	1	0	0	1
1317.0	0	1	0	1	1	0	0	1
1317.5	1	1	0	1	1	0	0	1
1318.0	0	0	1	1	1	0	0	1
1318.5	1	0	1	1	1	0	0	1
1319.0	0	1	1	1	1	0	0	1
1319.5	1	1	1	1	1	0	0	1
1320.0	0	0	0	0	0	1	0	1
1320.5	1	0	0	0	0	1	0	1