Modification Alan "95plus", "78plus" and "48plus"

Modification instructions of the devices "ALAN 48plus", "78plus" and "95plus":

General:
For the conversion of the mentioned Alan devices you do not need any gauges. If you act exactly as it is drinsteht in the instructions, synonymous comes out exactly what should come out. There is no need to adjust the device as it is already designed for a wide frequency range. For example, the RX input circuit before the 1st mixer is automatically switched by switchable capacitors into several pre-adjusted ranges, with the VCO it is the same.

The possible frequency range is set by applying
different (digital) levels, ie + 5-8V or zero (ground) to 4 pins of
the processor (lc7232n). These 4 pins can be recognized by 4 adjacent resistors, which are connected to the processor on one side and interconnected on the other side (to + 5V).
For some resistors, the connection to the processor is connected to ground through a solder point (zero), the others are open (+ 5V).
Depending on the combination of solder points you get different numbers of channels or frequencies.

The frequency range modification is done by opening or re-soldering the corresponding solder points and works the same for the ALAN 78plus, 48plus and 95plus, but these resistors have different part numbers for the devices. For the ALAN 78plus these resistors are called R461 to R464, for the other devices it should be R230 to 233.

Disconnect electricity before modification! (is
important because of a necessary processor reset, as long as the processor gets voltage, container its programming)

In the following instructions, I refer to the designations of the
resistors in the ALAN 78plus, but because of the identical circuit and position of the components in the other two devices, their resistance designations are quite easy to find.

Modification of the frequency ranges:

Original (approved) 80 channel version (80K FM 12K AM):
!! Ground soldering point at the resistors R461 and R463 !!

ch	frequency	ch	frequency	ch	frequency	ch	frequency
1	26965	2	26975	3	26985	4	27005
5	27015	6	27025	7	27035	8th	27055
9	27065	10	27075	11	27,085	12	27105
13	27115	14	27125	15	27135	16	27155
17	27165	18	27175	19	27185	20	27205
21	27215	22	27225	23	27255	24	27235

25	27245	26	27265	27	27275	28	27285
29	27295	30	27305	31	27315	32	27,325
33	27335	34	27345	35	27355	36	27365
37	27375	38	27385	39	27395	40	27405
41	26.565	42	26.575	43	26.585	44	26.595
45	26.605	46	26.615	47	26.625	48	26.635
49	26.645	50	26.655	51	26,665	52	26.675
53	26.685	54	26.695	55	26.705	56	26.715
57	26.725	58	26.735	59	26.745	60	26.755
61	26.765	62	26.775	63	26.785	64	26.795
65	26.805	66	26.815	67	26.825	68	26.835
69	26.845	70	26.855	71	26.865	72	26.875
73	26.885	74	26.895	75	26.905	76	26.915
77	26.925	78	26.935	79	26.945	80	26.955

Modification 1: (10 x 40 channels AM + FM, "5" at the kHz location, "CB execution")

!! No ground soldering points at the resistors R461 to R464 !!

Volume
Ch A B C D E F G H I L
1 25,615 26,065 26,515 26,965 29,215 29,665
2 25,625 26,075 26,525 26,975 27,225 26,075 26,525 26,975 27,225 27,875 28,325 28,775 29,225 29,675
3 25,635 26,085 26,535 26,985 27,435 27,885 28,335 28,785 29,235 29,685
4 25,655 26,105 26,555 27,005 27,455 27,905 28,355 28,805 29,255 29,705
5 25,665 26,115 26,565 27,015 27,465 27,915 28,365 28,815 29,265 29,715
6 25,675 26,125 26,575 27,025 27,475 27,925 28,375 28,825 29,275 29,725
7 25,685 26,135 26,585 27,035 27,485 27,935 28,385 28,835 29,285 29,735
8 25,705 26,155 26,605 27,055 27,505 27,955 28,405 28,855 29,305 29.755
9,277,526,165 26,615 27,065 27,515 27,765
10 25,725 26,175 26,625 27,075 27,525 27,975 28,425 28,875 27,525 27,975 28,425 28,875 29,325 29,775
11 25,735 26,185 26,635 27,085 27,535 27,985 28,435 28,885 29,335 29,785
12 25,755 26,205 26,655 27,105 27,555 28,005 28,455 28,905 29,355 29,805
13 25,765 26,215 26,665 27,115 27,565 28,015 28,465 28,915 29,365 29,815
14 25,775 26,225 26,675 27,125 27,575 28,025 28,475 28,925 29,375 29,825
15 25,785 26,235 26,685 27,135 27,585 28,035 28,485 28,935 29,385 29,835
16 25,805 26,255 26,705 27,155 27,605 28,055 28,505 28,955 29,405 29,855
17 25,815 26,265 26,715 27,165 27,615 28,065 28,515 28,965 29,415 29,865
18 25,825 26,275 26,725 27,175 27,625 28,075 28,525 28,975 29,425 29,875
19 25,835 26,285 26,735 27,185 27,635 28,085 28,535 28,985 29,435 29,885 28,535 28,985 29,435 29,885
20 25,855 26,305 26,755 27,205 27,655 28,105 28,555 29,005 29,455 29,905
21 25,865 26,315 26,765 27,215 27,665 28,115 28,565 29,015 29,465 29,915
22 25,875 26,325 26,775 27,225 27,675 28,125 28,575 29,025 29,475 29,925
23 25,905 26,355 26,805 27,255 27,705 28,155 28,605 29,055 29,505 29,155
28,258,836,235 26,785 27,235 27,285 27,685 28,135 28,585 29,035 29,485 29,935
25 25,895 26,345 26,795 27,245 27,695 28,145 28,595 29,045 29,495 29,945
26 25,915 26,365 26,815 27,265 27,715 28,165 28,615 29,065 29,515 29,965
27,225 27,275 27,375 28,175 28,625 29,075 29,525 29,975
28 25,935 26,385 26,835 27,285 27,735 28,185 28,635 29,085 29,535 29,985
29 25,945 26,395 26,845 27,295 27,745 28,195 28,645 29,095 29,545 29,995
30 25,955 26,405 26,855 27,305 27,755 28,205 28,655 29,105 29,555 30,005
31 25,965 26,415 26,865 27,315 27,765 28,215 28,665 29,115 29,565 30,015
32 25,975 26,425 28,875 27,325 29,775 30,225 28,675 29,125 29,575 30,025

33 25,985 26,435 26,885 27,335 27,785 28,235 28,685 29,135 29,585 30,035
34 26,995 26,445 26,895 27,345 27,795 28,245 28,695 29,145 29,595 30,045
35 26,005 26,455 26,955 27,355 27,805 28,255 28,705 29,155 29,605 30,055
36 26,015 26,465 26,915 27,365 27,815 28,265 37,265 26,175 29,925 27,375 27,825
28,275 28,725 29,175 29,625 30,275 28,275 29,175 29,625 30,075
38 26,035 26,485 26,935 27,385 27,835 28,285 28,735 29,185 29,635 30,085
39 26,045 26,495 26,945 27,395 27,845 28,295 28,745 29,195 29,645 30,095
40 26,055 26,505 26,955 27,405 27,855 28,305 28,755 29,205 29,655 30,105

Modification 2: (10 x 40 channels AM + FM, "0" at the kHz location, "HAM execution")

!! Ground solder points at the resistors R461 and R462 !!

tape

CH A B C D E F G H I L
1 25.610 26.060 26.510 26.960 27.410 27.860 28.310 28.760 29.210 29.660
2 25.620 26.070 26.520 26.970 27.420 27.870 28.520 26.970 27.220 29.670 3.930 29.220 29.670
3 25.630 26.080 26.530 26.980 27.430 27.880 28.330 28.780 29.230 29.680
4 25.650 26.100 26.550 27.000 27.450 27.900 28.350 28.800
29.250 29.700 5 25.660 26.110 26.560 27,010 27,460 27,910 28,360 28,810 29,260 29,710
6 25,670 26,120 26,570 27,020 27,470 27,920 28,370 28,820 29,270 29,720
7 25,680 26,130 26,580 27,030 27,480 27,930 28,380 28,830 29,280 29,730
8 25,700 26,150 26,600 27,050 27,500 27,950 28,400 28,850 29,300 29.750
9,15,710 26,160 26,610 27,060 27,510 27,960
10 25,720 26,170 26,620 27,070 27,520 27,970 28,420 27,070 27,520 27,970 28,420 28,870 29,320 29,770
11 25,730 26,180 26,630 27,080 27,530 27,980 28,430 28,880 29,330 29,780
12 25,750 26,200 26,650 27,100 27,550 28,000 28,450 28,900 29,350 29,800
13 25,760 26,210 26,660 27,110 27,560 28,010 28,460 28,910 29,360 29,810
14 25,770 26,220 26,470 27,120 27,570 28,020 28,470 28,920 29,370 29,820
15 25,780 26,230 26,680 27,130 27,580 28,030 28,480 28,930 29,380 29,830
16 25,800 26,250 26,700 27,150 27,600 28,050 28,500 28,950 29,400 29,850
17 25,810 26,260 26,710 27,160 27,610 28,060 28,510 28,960 29,410 29.860
18 25,820 26,270 26,720 27,170 27,620 28,070 28,520 28,970 29,420 29,870
19 25,830 26,280 26,730 27,180 27,630 28,080 28,530 28,980 29,430 29,880
20 25,850 26,300 26,750 27,200 27,650 28,100 28,550 29,000 29,450 29,900
21 25,860 26,310 26,760 27,210 27,660 28,110 28,560 29,010 29,460 29.910
22 25.870 26.320 26.770 27.220 27.670 28,120 28,570 29,020 29,470 29,920
23 25,900 26,350 26,800 27,250 27,700 28,150 28,600 29,050 29,500 29,950
24 25,880 26,330 26,780 27,230 27,680 28,130 28,580 29,030 29,480 29,930
25 25,890 26,340 26,790 27,240 27,690 28,140 28,590 29,040 29,490 29,940
26 25,910 26,360 26,810 27,260 27,710 28,160 28,610 29,060 29,510 29,960
27 25,920 26,370 26,820 27,270 27,720 28,170 28,620 29,070 29,520 29,970
28 25,930 26,380 26,830 27,280 27,730 28,180 28,630 29,080 29,530 29,980
29 25,940 26,390 26,840 27,290 27,740 28,190 28,640 29,090 29,540 29,990
30 25,950 26,400 26,850 27,300 27,750 28,200 28,650 29,100 29,550 30,000
31 25,960 26,410 26,860 27,310 27.760 28,210 28,660 29,110 29,560 30,010
32 25,970 26,740 28,220 28,670 29,120 29,570 30,020
33 25,980 26,130 29,570 30,020 33 25,980 26,430 26,880 27,330 27,780 28,230 28,680 29,130 29,580
30,030
34 26,990 26,440 26,890 27,340 27,790 28,240 28,690 29,140 29,590 30,040
35 26,000 26,450 26,900 27,350 27,800 28,250 28,700 29,150 29,600 30,050
36 26,010 26,460 26,910 27,360 27,810 28,260 28,710 29,160 29,610 30,060
37 26,020 26,470 26,920 27,370 27,820 28,270 28,720 29,170 29,620 30,070
38 26,030 26,480 26,930 27,380 27,830 28,280 28,730 29,180 29,630 30,080
39 26,040 26,490 26,940 27,390 27,840 28,290 28,740 29,190 29,640 30,090

40 26,050 26,500 26,950 27,400 27.850 28,300 28,750 29,200 29,650 30,100
In the original version, the units only show the channel (1 - 40 or 1 - 80)
. After modification, the channel (1 - 40) and then a letter
indicating the "band" (A - L) will be displayed. "J" and "K" are omitted.

Other modifications:

Alan 48 Plus

Squelch: Q203 base 10µ mass. R159 10k> 330k Q107 Base 10µ Ground
Q203 to BC635 replace (blocks better)
R203 remove. Q203 Koll. 100µ - C155 / C153
necessarily R135> 47 Ohm, squelch can not
be adjusted properly if too large . Do not worry about S9 then.
Mod: AM / FM R434 820k> 2.2M C447 82p> 22p
AM: (At 1st verse, if not changed from factory, 39k to pin 1
IC104 - with C225, C225 one side soldered to connection C225 / R450 and
with Then connect 3.9k of Verb. C225 / 39k to
ground.)
R214 2.2k> 22k C226 10n> 22n
Empf NF-Endst. R204 100 ohms> 47 ohms. Betriebsspg. Block ZF IC with 100µ
plus side C129 and side R121. (For larger signals,
turn back the RF Gain a bit, tends to overload in the IF).

Alan 78 Plus

Modulation (FM): R434> 1M; C447> 47p; C457> 390..470p;
Remove C456; C455 at 47n left
Squelch: There are various modifications, such as bridges of R203, zoom
of C222 etc ... but brings everything not a resounding success.

Yesterday, I continued to "research" the squelch circuit and found a
(in my opinion good) modification, but then you have to
accept the loss of the squelch effect at AM (AM is
almost never used in the AFu anyway) :

- C222 10µ> 1µ (faster opening and closing of the squelch)
- Removal of the R203 (real removal!)
- Connecting the collector of Q203 to the collector of Q112
- R116 1k> 33k

Effect: The squelch switching transistor Q203, after this modification, pulls the collector potential of the driver transistor to ground after the FM demodulation, thereby preventing amplification and propagation of the NF.
In the original, the Q203 pulled down one of the operating points of the NF power amplifier IC103 (pin 7), which on the one hand to a perfect noise reduction but also to unpleasant "Wupp" and "Plopp" sounds when opening or closing and, above all, to a mighty Switching delay (caused by C204 / C205 and C222). These phenomena are passé after this modification.
Other issues were also tried out where the RX-NF could be grounded with the squelch closed, but it either had an unpleasant click or a more or less loud residual noise (with the squelch closed).
The enlargement of R116 optimizes the threshold and the setting range of the squelch at low input voltages (previously the squelch opened at about 0.6 µV, but did not close after that, then turned the squelch control a tiny bit more, the squeak only opened from 2 to 3µV).
Nochwas: I have found that despite pure DC supply to the device and stable DC network may easily catch a

more or less humming through net ground loops.
This happens due to a relatively weak conductor track which leads from the connection point of the black (minus) 12V connection cable on the board (near the choke CH501) to earth (housing).
A thicker wire or stranded wire between the soldering point of the black connecting cable and earth (eg the wide soldered connection zw. Ground on the board and the housing) ensures a safe remedy.

My radio has very good reception characteristics, but the
acoustic output - especially for DXes with a lot of QRM - is not very easy to
understand. In contrast, you can
achieve very good results with a cheap headphones . For PR, the box provides very good reception characteristics,
whereby the mod should be removed directly at the microphone socket and the headphone
output should be wired with a short-circuit cable. The Hardwaresquelch
needs about an additional TX delay (the other station) of 150ms!

The transmitter stage showed me the following characteristics:
The harmonic filtering is very good on the upper channels (1-40). On the
new lower channels, on the other hand, it does not meet my expectations: you are
disturbed on the radio and on television, as long as the box is in the same room.
The mod is clear and clean, but usually a bit quiet (see conversion tips). For
PR, the mod is a bit too dull. The box needs with me a TX delay of
about 110-120 ms.

Conversion tips:
* Expand FM hub:
The potentiometer RV401 can be adjusted. This allows the lift to be raised slightly
.
If that is not enough, the resistor R414 of 33k should be reduced to
about half!
If the mod is too dull, the capacitor C457 must be reduced!
*
Adjust AM modulation: This is done with the potentiometer RV201
* Modify transmission power:
Rotate RV203 (blue potentiometer) - important: with high output power
the SWR should be good, otherwise the tranistor will become too hot!
That goes to about 6-8 watts - Important: from 4 to 8 watts is not even
an S-stage at the other end!
* Receive mod too dull:
Reduce C217 and C221 by approx. 10-40% each.
*
Switch off backlight for LCD display: Simply simply remove R237 (the big one behind the display) on one side.

Microphone: foam in front of the capsule. Expand sound slots.
Mike - Occupancy:
1 Mike
2 Lautsp.
3 PTT
4 acc. UP / DN
5 mass
6 + 13,8V

General data of the devices:
* TX-Power 4W / FM and 1W / AM (more is possible, but not recommended)
* very clean powerful modulation
* Double Super RX (1.ZF 10.695 MHz and 2.ZF 455 kHz)
* high sensitivity (about 0.6µV at 20dB S / N !!!)
* over switched C's self tuning output (no adjustment required)

* "" "" "" "VCO (wide tuning range)
* Microphone with Up / Dwn buttons
* 10-Step Quick-Up / Dwn (100kHz Steps)
* LCD-S Meter (and External S-Meter Output)

Hi guys!

After watching Peter's homepage, it should be
clear to everyone in principle how the Midland devices of the series
Alan XX Plus will be rebuilt.
Since I have now also rebuilt such a device (78PLUS), I took
the trouble to
list all 16 programming options and some special features.
In addition, I once
scanned the circuit board of my Alan 78Plus and
created a small circuit diagram for a better understanding .
For me, the conversion was done by DIP switch, so that
I can now switch all 16 options from the outside.
For the DIP switch, I've
milled a small housing recess on the bottom of the case next to the speaker.

The following list for the Alan 78 Plus is
analogous to the same for all Alan devices that use the same
processor (to my knowledge, 78, 48 and 95 plus
and possibly even 42 Plus ???).
Only one must
pay attention here to another name of the resistors .

Explanation:
From left to right, the individual zeros and ones stand
for R461, R462, R463 and R464, where
1 = solder bridge and 0 = no solder bridge.

R461 is at processor
pin 17 R462 is at processor
pin 16 R463 is at processor
pin 15 R464 is at processor pin 14

1234 CH LOAD MODES

0000: 400CH-5kHz-all AM / FM
0001: 34CH-5kHz-all AM / FM
0010: 11CH-5kHz-all AM / FM
0011: 40CH-5kHz-all AM / FM
0100: 40CH-5kHz- FM only
0101: 40CH-0kHz-all AM / FM
0110: 40CH-0kHz- FM only
0111: 34CH-5kHz-all AM / FM
1000: 40CH-5kHz- FM only
1001: * 40CH-0kHz-see chart
1010: 80CH-5kHz-80FM / 12AM
1011: 40CH-5kHz- FM only
1100: 400CH-0kHz-all AM / FM
1101: * 40CH-5kHz all AM / FM
1110: 22CH-5kHz all AM / FM
1111: 40CH-5kHz AM only

Unfortunately, this table is without guarantee!

Special features ALAN XX PLUS:

0001, 0111 34 channels AM / FM

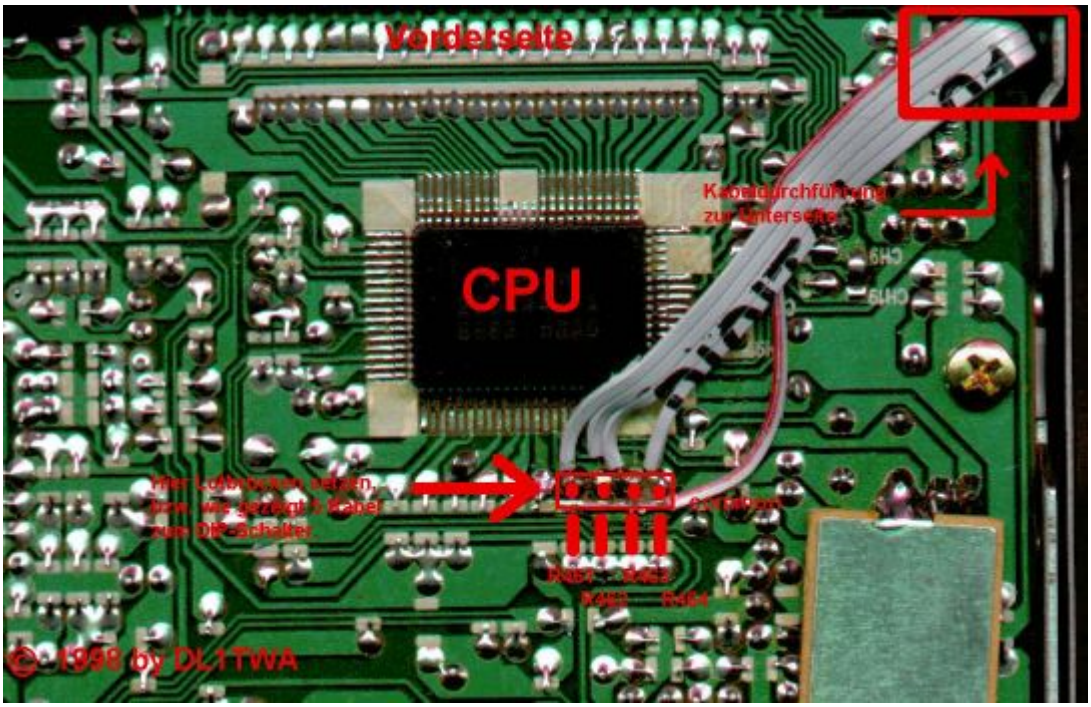
Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	26.965	10	27.075
2	26.975	11	27.085
3	26.985	12	27.105
4	27.005	13	27.115
5	27.015	14	27.125
6	27.025	15	27.135
7	27.035	16	27.155
8	27.055	17	27.165
9	27.065	18	27.175

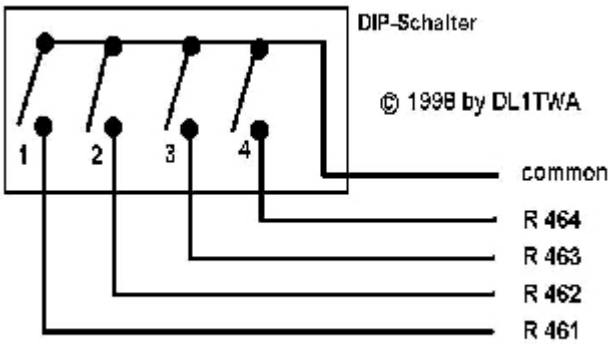
Channel	Frequency (MHz)	Channel	Frequency (MHz)
19	27.185	28	26.895
20	27.205	29	26.905
21	27.215	30	26.915
22	27.225	31	26.925
23	27.255	32	26.935
24	27.245	33	26.945
25	27.265	34	26.955
26	26.875		
27	26.885		

1001 40 channels FM (United Kingdom)

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	27,600 to 40	27,990	

in 10 kHz raster





0000 400 channels AM / FM

Volume
Ch A B C D E F G H I L
1 25,615 26,065 26,515 26,965 27,415 27,865 28,315 28,765 29,215 29,665
2 25,625 26,075 26,525 26,975 27,425 27,875 28,325 28,775 29,225 29,675
3 25,635 26,085 26,535 26,985 27,435 27,885 28,335 28,785 29,235 29,685
3A * ------ * ----- - * ------ * ------ * ------ * ------ * ------ * ------ * ------ * ------ **
4 25,655 26,105 26,555 27,005 27,455 27,905 28,355 28,805 29,255 29,705
5 25,665 26,115 26,565 27,015 27,465 27,915 28,365 28,815 29,265 29,715
6 25,675 26,125 26,575 27,025 27,475 27,925 28,375 28,825 29,275 29,725
7 25,685 26,135 26,585 27,035 27,485 27,935 28,385 28,835 29,285 29,735
7A * ------ * ------ * ------ * ------ * ------ * ------ * ------ * ------ * ------ * ------ **
8 25,705 26,155 26,605 27,055 27,505 27,955 28,405 28,855 29,305 29,755
9 25,715 26,165 26,615 27,065 27,515 27,965 28,415 28,865 29,315 29,765
10 25,725 26,175 26,625 27,075 27,525 27,975 28,425 28,875 29,325 29,775
11 25,735 26,185 26,635 27,085 27,535 27,985 28,435 28,885 29,335 29,785
11A * ------ * ------ * ------ * ------ * --- --- * ------ * ------ * ------ * ------ * ------ **
12 25.755 26.205 26.655 27.105 27.555 28.005 28.455 28.905 29.355 29,805
13 25,765 26,215 26,665 27,115 27,565 28,015 28,465 28,915 29,365 29,815
14 25,775 26,225 26,675 27,125 27,575 28,025 28,475 28,925 29,375 29,825
15 25,785 26,235 26,685 27,135 27,585 28,035 28,485 28,935 29,385 29,835
15A * ------ * ------ * ------ * ------ * ------ * - ---- * ------ * ------ * ------ * ------ **
16 25.805 26.255 26.705 27.155 27.605 28.055 28.505 28.955 29.405 29.855
17 25.815 26.265 26.715 27.165 27,615 28,065 28,515 28,965 29,415 29,865
18 25,825 26,275 26,725 27,175 27,625 28,075 28,525 28,975 29,425 29,875
19 25,835 26,285 26,735 27,185 27,635 28,085 28,535 28,985 29,435 29,885
19A * ------ * ------ * ------ * ------ * ------ * ------ * ------ * ------ * ------ * ------ * *
20 25,855 26,305 26,755 27,205 27,655 28,105 28,555 29,005 29,455 29,905
21 25,865 26,315 26,765 27,215 27,665 28,115 28,565 29,015 29,465 29,915
22 25,875 26,325 26,775 27,225 27,675 28,125 28,575 29,055 29,475 29,925
23 25,905 26,355 26,805 27,255 27,705 28,155 28,605 29,055 29,505 29,555
24 25,885 26,335 26,785 27,235 27,685 28,135 28,585 29,035 29,485 29,935
25 25,895 26,345 26,795 27,245 27,695 28,145 28,595 29,045 29,495 29,945
26 25,915 26,365 26,815 27,265 27,715 28,165 28,615 29,065 29,515 29,965
27 25,925 26,375 26,825 27,275 27,725 28,175 28,935 26,085 29,525 29,975
28 25,935 26,385 26,835 27,285 27,735 28,185 28,635 29,085 29,535 29,985
29 25,945 26,395 26,845 27,295 27,745 28,195 28,645 29,095 29,545 29,995
30 25,955 26,405 26,855 27,305 27,755 28,205 28,655 29,105 29,555 30,005
31 25,965 26,415 26,865 27,315 27,765 28,215
32 25,975 26,425 26,875 27,325 27,775 28,225 28,675 29,125 29,575 30,225 28,675 29,125 29,575 30,025
33 25,985 26,435 26,885 27,335 27,785 28,235 28,685 29,135 29,585 30,035
34 26,995 26,445 26,895 27,345 27,795 28,245 28,695 29,145 29,595 30,045
35 26,005 26,455 26,905 27,355 27.805 28,255 28,705 29,155 29,605 30,055
36 26,015 26,465 26,915 27,365 29,815 28,265 28,715 29,165 29,615 30,065
37 26,025 26,475 26,925 27,375 27,825 28,275 28,725 29,175 29,625 30,075

38 26,035 26,485 26,935 27,385 27,835 28,285 28,735 29,185 29,635 30,085
39 26,045 26,495 26,945 27,395 27,845 28,295 28,745 29,195 29,645 30,095
40 26,055 26,505 26,955 27,405 27,855 28,305 28,755 29,205 29,655 30,105

1100 400 channels AM / FM 0kHz

Band
Ch A B C D E F G H I L
1 25.610 26.060 26.510 26.960 27.410 27.860 28.310 28.760 29.210 29.660
2 25.620 26.070 26.520 26.970 27.420 27.870 28.320 28.770 29.220 29.670
3 25.630 26.080 26.530 26.980 27.430 27.880 28.330 28.780 29.230 29.680
3A * ------ * ----- - * ------ * ------ * ------ * ------ * ------ * ------ * ------ * ------ **
4 25,650 26,100 26,550 27,000 27,450 27,900 28,350 28,800 29,250 29,700
5 25,660 26,110 26,560 27,010 27,460 27,910 28,360 28,810 29,260 29,710
6 25,670 26,120 26,570 27,020 27,470 27,920 28,370 28,820 29,270 29,720
7 25,680 26,130 26,580 27,030 27,480 27,930 28,380 28,830 29,280 29,730
7A * ------ * ------ * ------ * ------ * ------ * ------ * ------ * ------ * ------ * ------ **
8 25,700 26,150 26,600 27,050 27,500 27,950 28,400 28,850 29,300 29,750
9 25,710 26,160 26,610 27,060 27,510 27,960 28,410 28,860 29,310 29,760
10 25,720 26,170 26,620 27,070 27,520 27,970 28,420 28,870 29,320 29,770
11 25,730 26,180 26,630 27,080 27,530 27,980 28,430 28,880 29,330 29,780
11A * ------ * ------ * ------ * ------ * --- --- * ------ * ------ * ------ * ------ * ------ **
12 25,750 26,200 26,650 27,100 27,550 28,000 28,450 28,900 29,350 29,800
13 25,760 26,210 26,660 27,110 27,560 28,010 28,460 28,910 29,360 29,810
14 25,770 26,220 26,670 27,120 27,570 28,020 28,470 28,920 29,370 29,820
15 25,780 26,230 26,680 27,130 27,580 28,030 28,480 28,930 29,380 29,830
15A * ------ * ------ * ------ * ------ * ------ * - ---- * ------ * ------ * ------ * ------ **
16 25,800 26,250 26,700 27,150 27,600 28,050 28,500 28,950 29,400 29,850
17 25,810 26,260 26,710 27,160 27,610 28,060 28,510 28,960 29,410 29,860
18 25,820 26,270 26,720 27,170 27,620 28,070 28,520 28,970 29,420 29,870
19 25,830 26,280 26,730 27,180 27,630 28,080 28,530 28,980 29,430 29,880
19A * ------ * ------ * ------ * ------ * ------ * ------ * ------ * ------ * ------ * ------ * *
20 25,850 26,300 26,750 27,200 27,650 28,100 28,550 29,000 29,450 29,900
21 25,860 26,310 26,760 27,210 27,660 28,110 28,560 29,010 29,460 29,910
22 25,870 26,320 26,770 27,220 27,670 28,120 28,570 29,020 29,470 29,920
23 25,900 26,350 26,800 27,250 27,700 28,150 28,600 29,050 29,500 29,950
24 25,880 26,330 26,780 27,230 27,680 28,130 28,580 29,030 29,480 29,930
25 25,890 26,340 26,790 27,240 27,690 28,140 28,590 29,040 29,490 29,940
26 25.910 26,360 26.810 27.260 27.710 28,160 28,610 29,060 29,510 29,960
27 25,920 26,370 26,620 29,070 29,520 29,970
28 25,930 26,080 29,520 29,970 28 25,930 26,380 26,830 27,280 27,730 28,180 28,630 29,080 29,530
29,980
29 25,940 26,390 26,840 27,290 27,740 28,190 28,640 29,090 29,540 29,990
30 25,950 26,400 26,850 27,300 27,750 28,200 28,650 29,100 29,550 30,000
31,259,660 26,410 26,860 27,310 27,760 28,210 28,660 29,120 29,560 30,010
32 25,970 26,420 26,870 27,320 27,770 28,220 28,670 29,120 29,570 30,020
33 25,980 26,430 26,880 27,330 27,780 28,230 28,680 29,130 29,580 30,030
34 26,990 26,440 26,890 27,340 27,790 28,240 28,690 29,140 29,590 30,040
35 26,000 26,450 26,900 27,350 27.800 28,250 28,700 29,150 29,600 30,050
36 26,010 26,460 26,910 27,360 27,810 28,260 28,710 29,160 29,610 30,060
37 26,020 26,470 26,920 27,370 27,820 28,270 28,720 29,170 29,620 30,070
38 26,030 26,480 26,930 27,380 27,830 28,280 28,730 29,180 29,630 30,080
39 26,040 26,490 26,940 27,390 27,840 28,290 28.740 29.190 29.640 30.090
40 26,050 26,500 26,950 27,400 27,850 28,300 28,750 29,200 29,650 30,100

Vielleicht habe ich nun wieder einmal ein paar OM zum Umbauen bewegt. Das Gerät läßt sich übrigens sehr gut für 10m Relaisbetrieb einsetzen.
Allerdings ist mir im Moment noch keine Schaltung bekannt, mit der man beim Sendebeginn automatisch QuickUp und bei Empfangsbeginn QuickDown schalten kann (+- 100 kHz).
Schaltungsvorschläge sind natürlich jederzeit willkommen.

Außerdem habe ich eine Vermutung:
Bei vielen CB-Geräten gibt es die Funktion DualWatch, mit der sich 2 Frequenzen überwachen lassen. Diese Funktion ließe sich prima für eine Ablage mißbrauchen. Nur haben die Alan Geräte diese Funktion nicht. Sie könnte allerdings dennoch im Prozessor implementiert sein. Wer kann hier evtl. mit den Prozessordaten/Anschlußpins weiterhelfen???

Siehe deshalb auch bei Alan48!

Einige Verbesserungsvorschläge:

Alan 48 Plus
==========
Squelch: Q203 Basis 10µ Masse. R159 10k > 330k Q107 Basis 10µ Masse
Q203 gegen BC635 tauschen (sperrt besser)
R203 entf. Q203 Koll. 100µ - C155 / C153
unbedingt R135 > 47 Ohm, wenn zu groß läßt sich Squelch nicht vernünftig einstellen. Macht über S9 dann nicht mehr auf.

Mod: AM/FM R434 820k > 2.2M C447 82p > 22p
AM: (Bei 1. Vers. wenn noch nicht geändert vom Werk aus. 39k an Pin 1 IC104 -- mit C225. C225 einseitig an Verbindung C225 / R450 auslöten und mit oben genannten 39k verbinden. Dann 3.9k von Verb. C225 / 39k nach Masse löten.)
R214 2.2k > 22k C226 10n > 22n

Empf NF-Endst. R204 100 Ohm > 47 Ohm. Betriebsspg. ZF IC mit 100æ abblocken plusseitig C129 und masseseitig R121. (Bei größeren Signalen RF Gain etwas zurückdrehen. Neigt zu Übersteuerung in der ZF).

Alan 78 Plus
==========

Modulation (FM): R434 > 1M; C447 > 47p; C457 > 390..470p;
C456 entfernen; C455 bei 47n belassen

Squelch: Es gibt diverse Modifikationen, wie Brücken von R203, Vergrößern von C222 etc... bringt aber alles keinen durchschlagenden Erfolg.

Besser:

- C222 10µ > 1µ (schnelleres Öffnen und Schließen des Squelches)
- Entfernen des R203 (wirkliches Entfernen !)
- Verbinden des Kollektors von Q203 an den Kollektor von Q112
- R116 1k > 33k

Jedoch muß man danach den Verlust der Squelch-Wirkung bei AM in Kauf nehmen.

Nochwas: Ich habe festgestellt, daß man sich trotz reiner DC-Versorgung der Geräte und stabilem DC-Netz evtl. leicht ein mehr oder weniger starkes Brummen durch Netz-Brummschleifen einfangen kann.
Dies passiert durch eine relativ schwach dimensionierte Leiterbahn die von dem Anschlußpunkt des schwarzen (Minus-) 12V-Anschlußkabels auf der Platine (Nähe der Drossel CH501) an Masse (Gehäuse) führt.
Ein dickerer Draht oder Litze zwischen dem Lötpunkt vom schwarzen Anschlußkabel und Masse (z.B. der breiten Lötverbindung zw. Masse auf der Platine und dem Gehäuse) sorgt für sichere Abhilfe.

Mikrofon: Schaumstoff vor die Kapsel. Schallschlitze erweitern.

Mike - Belegung:

1 Mike
2 Lautsp.
3 PTT
4 gem. UP/DN
5 Masse
6 Plus

WICHTIG:

Nach einem Eingriff (Umbau) der Geräte verlieren sie ihre Zulassung und dürfen dann NICHT mehr von CB-Funkern betrieben werden !!!!!!!!
Der Betrieb ist dann nur noch berechtigten Personen (wie z.B. Funkamateuren) gestattet!
