122 GHz verze VK3CV

Medlov 2021

OK1UFL

122 GHz for all!

by VK3CV

Magazine for Amateur Radio on VHF/UHF and Microwaves

OK1AHO

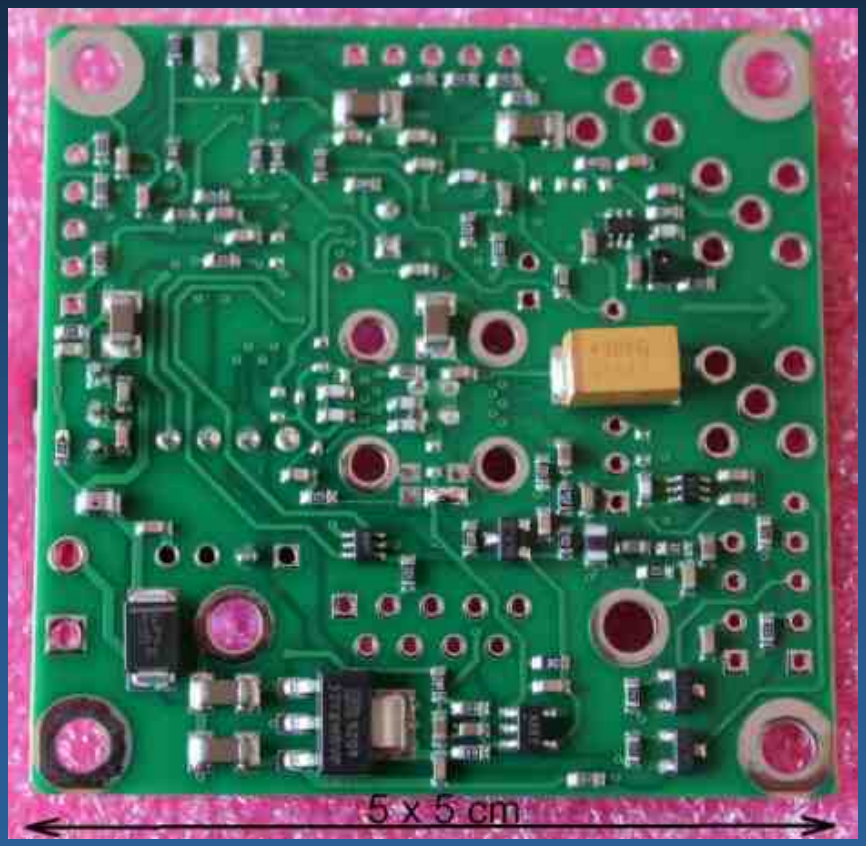
OK1EM

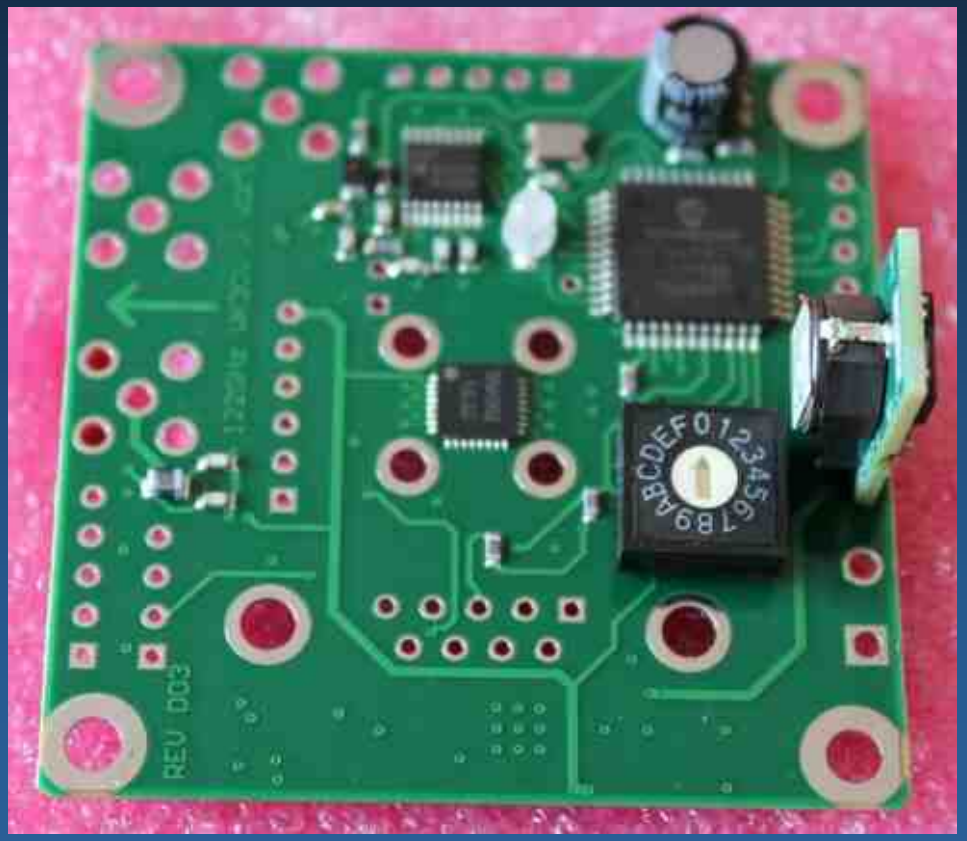
Na adr. http://groups.io/g/The122GProject
Od října 2019 – diskuzní fórum
- 2703 příspěvků

	PRVNÍ KOLO OBJEDNÁVEK	DRUHÉ KOLO OBJEDNÁVEK	Celkem
Osazené a oživené PCB	**385**	**250**	**635**
Neosazené PCB	**143**	**53**	**196**
Chaparrall feed	**295**	**164**	**459**
Conical horn	**187**	**175**	**362**

V OK je asi 14 kusů transvertoru verze VK3CV

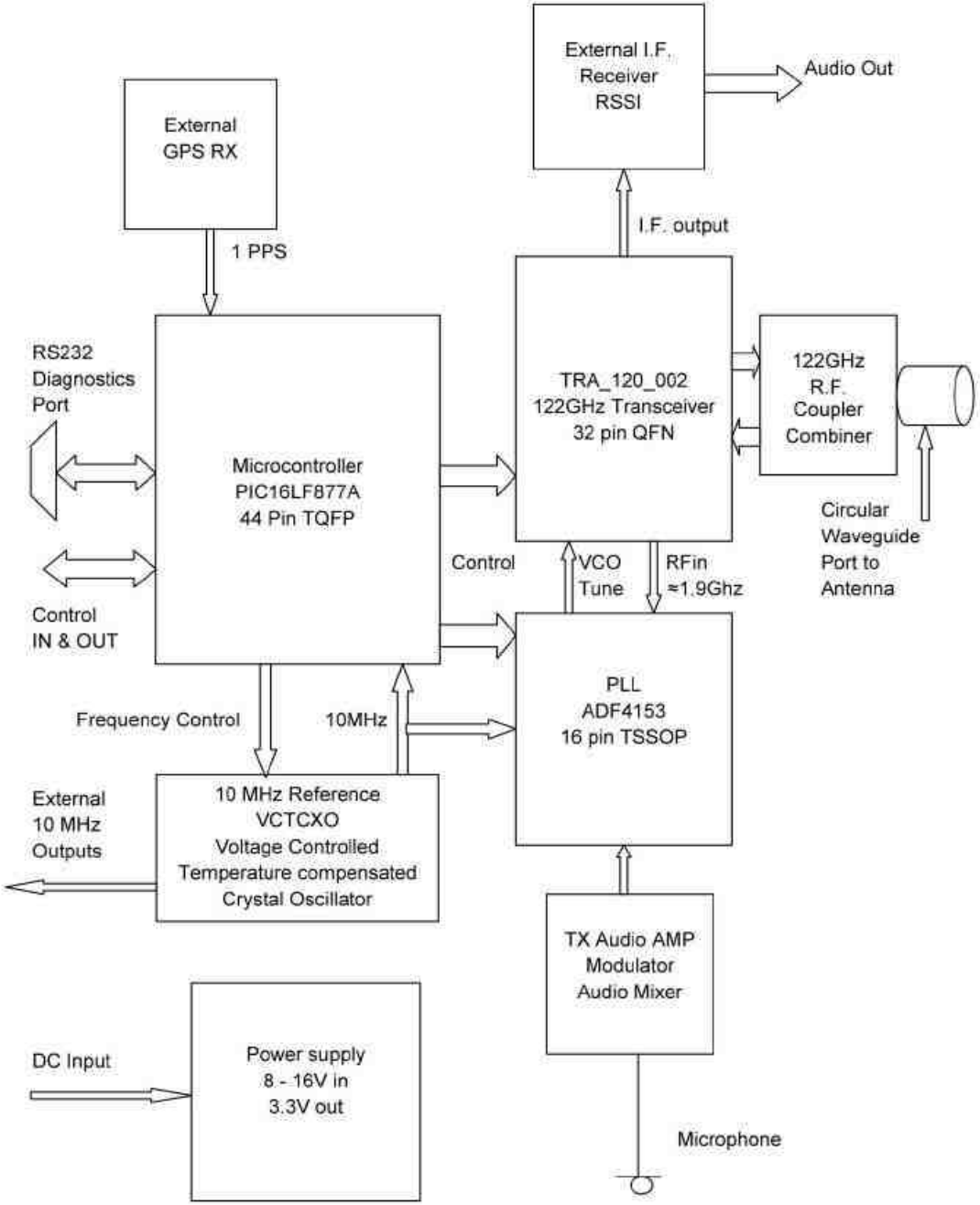
Začátkem července 2020 došly objednané desky



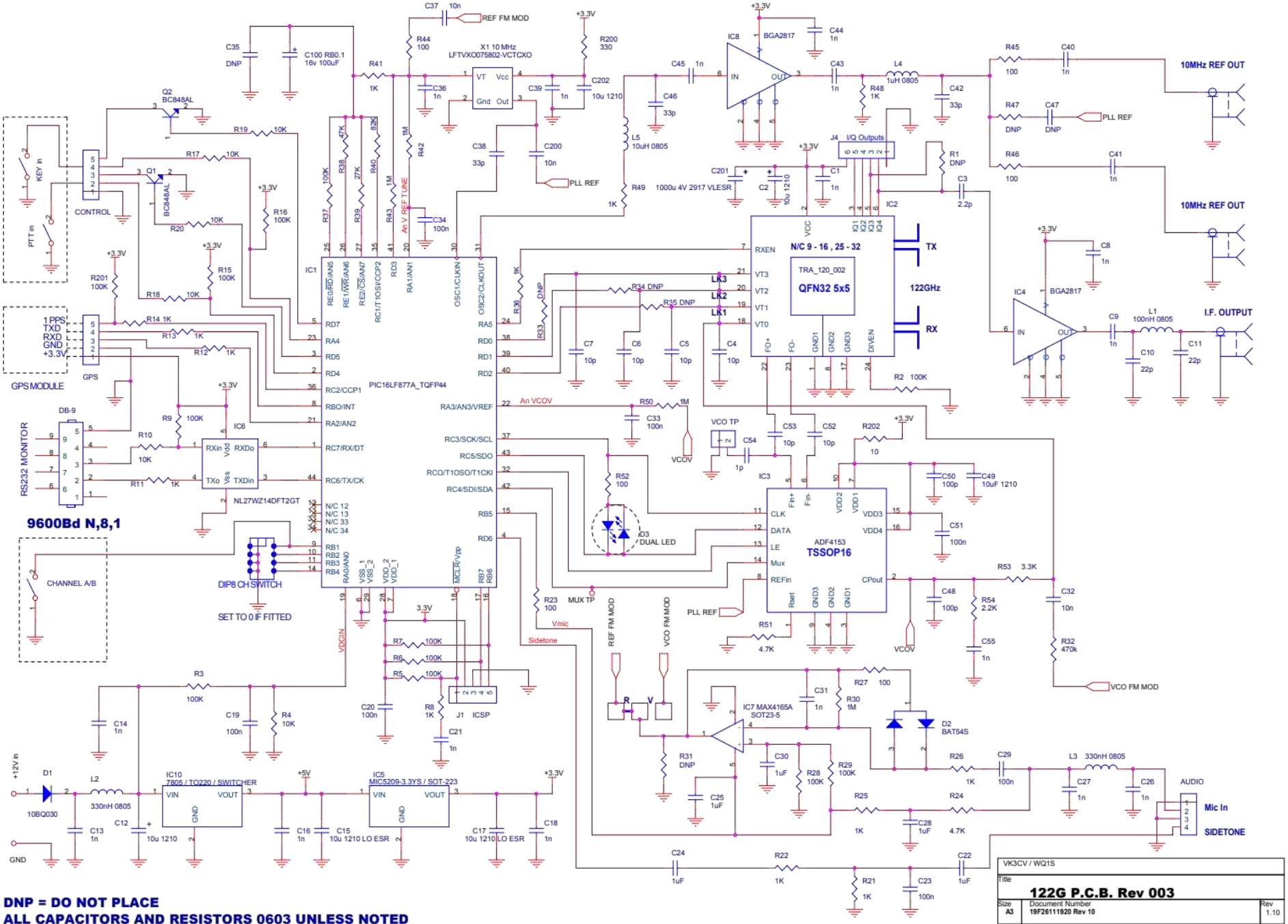


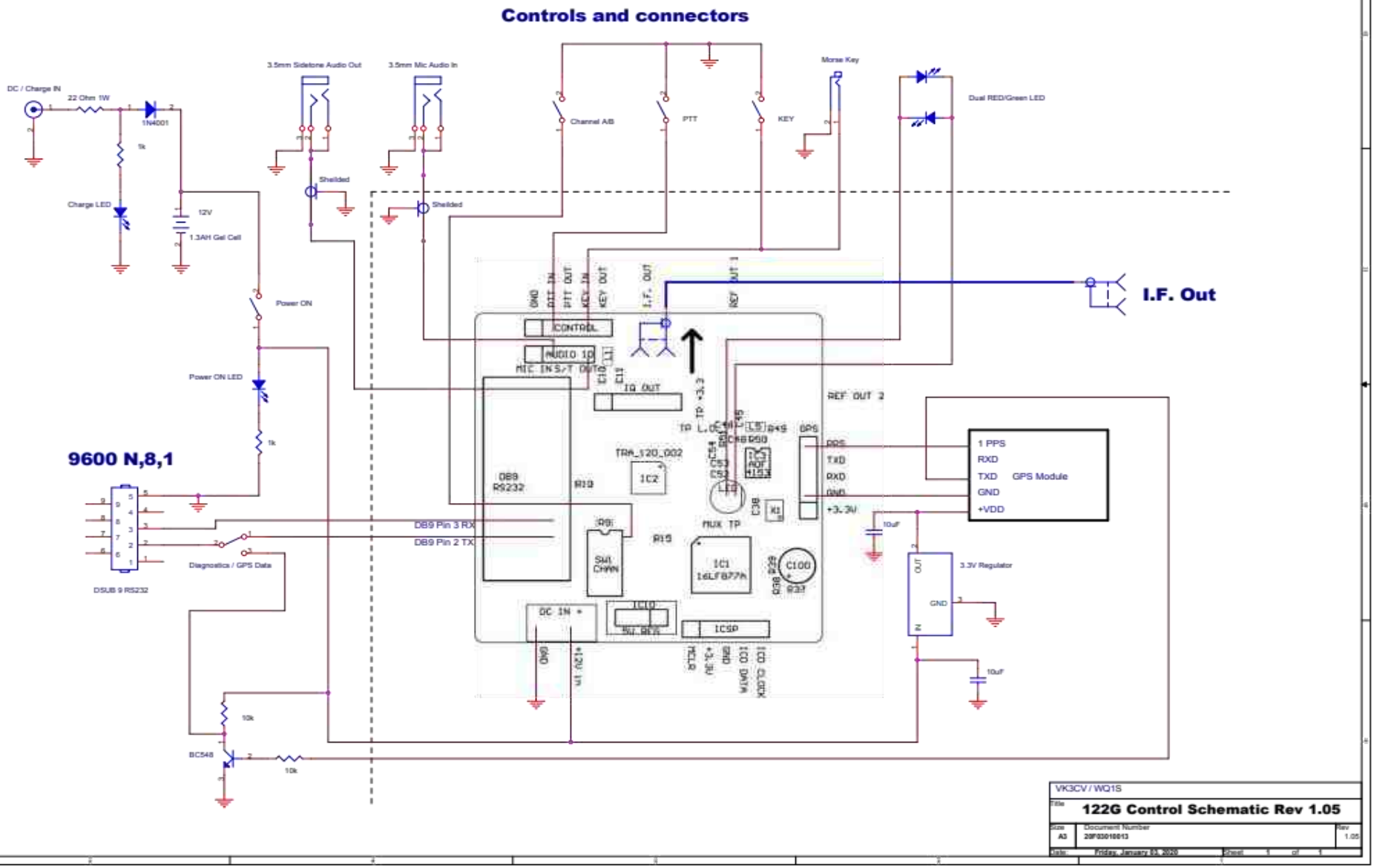
Duralová skříňka 80 x 62 x 20


1PPS
10MHz
ADF4153
LED
PIC16LF872
+12V
+5V
+12V
KEY
AUD-OUT
PTT
AUDIO
GND
RX
TX
GND
A/B
7805



1 2 2 G H Z V K 3 C V


C37 10n
REF FM MOD
C35 DNP
C100 RB0.1 16v 100uF
R41 1K
R44 100
X1 10 MHz LFTVXO075802-VCTCXO
R200 330
C202 10u 1210
C45 1n
C46 33p
L5 10uH 0805
R49 1000u 4V 2917 VLESR
C36 1n
C39 1n
C38 33p
C200 10n
PLL REF
C34 100n
An V REF TUNE
R42 1M
R43 1M
R40 82K
R39 27K
R38 47K
R37 100K
IC8 BGA2817
C44 1n
C43 1n
L4 1uH 0805
R48 1K
C42 33p
R45 100
C40 1n
10MHz REF OUT
R47 DNP
C47 DNP
PLL REF
R46 100
C41 1n
10MHz REF OUT
J4 I/O Outputs
C201
C2 10u 1210
C1 1n
R1 DNP
C3 2.2p
IC2
Q2 BC848AL
Q1 BC848AL
R19 10K
R17 10K
R20 10K
R16 100K
R15 100K
R18 10K
R201 100K
KEY in
PTT in
CONTROL
GPS
GPS MODULE
1 PPS
TXD
RXD
GND
+3.3V
R14 1K
R13 1K
R12 1K
IC1
PIC16LF877A_TQFP44
RD7
RA4
RD5
RD4
RC2/CCP1
RB0/INT
RA2/AN2
RC7/RX/DT
RC6/TX/CK
RA5
RD0
RD1
RD2
RA3/AN3/VREF
RC3/SCK/SCL
RC5/SDO
RC0/T1OSO/T1CKI
RC4/SDI/SDA
RB5
RD6
OSC1/CLKIN
OSC2/CLKOUT
R36 1K
R33 DNP
R34 DNP
R35 DNP
LK3
LK2
LK1
IC4 BGA2817
C8 1n
C9 1n
L1 100nH 0805
C10 22p
C11 22p
I.F. OUTPUT
IC3 ADF4153 TSSOP16
C7 10p
C6 10p
C5 10p
C4 10p
C53 10p
C52 10p
R202 10
C50 100p
C49 10uF 1210
C51 100n
R53 3.3K
C48 100p
R54 2.2K
C55 1n
C32 10n
R32 470k
VCO FM MOD
R2 100K
An VCOV
R50 1M
C33 100n
VCOV
VCO TP
C54 1p
R52 100
D3 DUAL LED
MUX TP
Vmic
Sidetone
R23 100
REF FM MOD
VCO FM MOD
PLL REF
R51 4.7K
IC7 MAX4165A SOT23-5
C31 1n
R27 100
R30 1M
D2 BAT54S
R31 DNP
C30 1uF
R28 100K
R29 100K
C25 1uF
R26 1K
C29 100n
L3 330nH 0805
C27 1n
C26 1n
AUDIO
Mic In
SIDETONE
R25
R24 4.7K
C28 1uF
1K
C24 1uF
R22 1K
C22 1uF
R21 1K
C23 100n
DB-9
RS232 MONITOR
IC6 NL27WZ14DFT2GT
R9 100K
R10 10K
R11 1K
9600Bd N,8,1
CHANNEL A/B
DIP8 CH SWITCH
SET TO 0 IF FITTED
R7 100K
R6 100K
R5 100K
R3 100K
C14 1n
C19 100n
R4 10K
C20 100n
R8 1K
C21 1n
J1 ICSP
+12V in
D1 10BQ030
L2 330nH 0805
IC10 7805 / TO220 / SWITCHER
IC5 MIC5209-3.3YS / SOT-223
C13 1n
C12 10u 1210
C16 1n
C15 10u 1210 LO ESR
C17 10u 1210 LO ESR
C18 1n
GND
DNP = DO NOT PLACE
ALL CAPACITORS AND RESISTORS 0603 UNLESS NOTED
VK3CV / WQ1S
Title
122G P.C.B. Rev 003
Size A3
Document Number 19F26111920 Rev 10
Rev 1.10
Date: Sunday, June 14, 2020
Sheet 1 of 1



122 GHz VK3CV

SW 122GHz VK3CV

```
** 122G_003 VK3CV / WQ1S **
VERSION # 122G_003_19F2611
BEACON = de VK3CV/WQ1S QF22ma
ER  TU  REFV EC VCOV DCIN
03 0E0D 01DC 05 01E1 0115 GPS
```

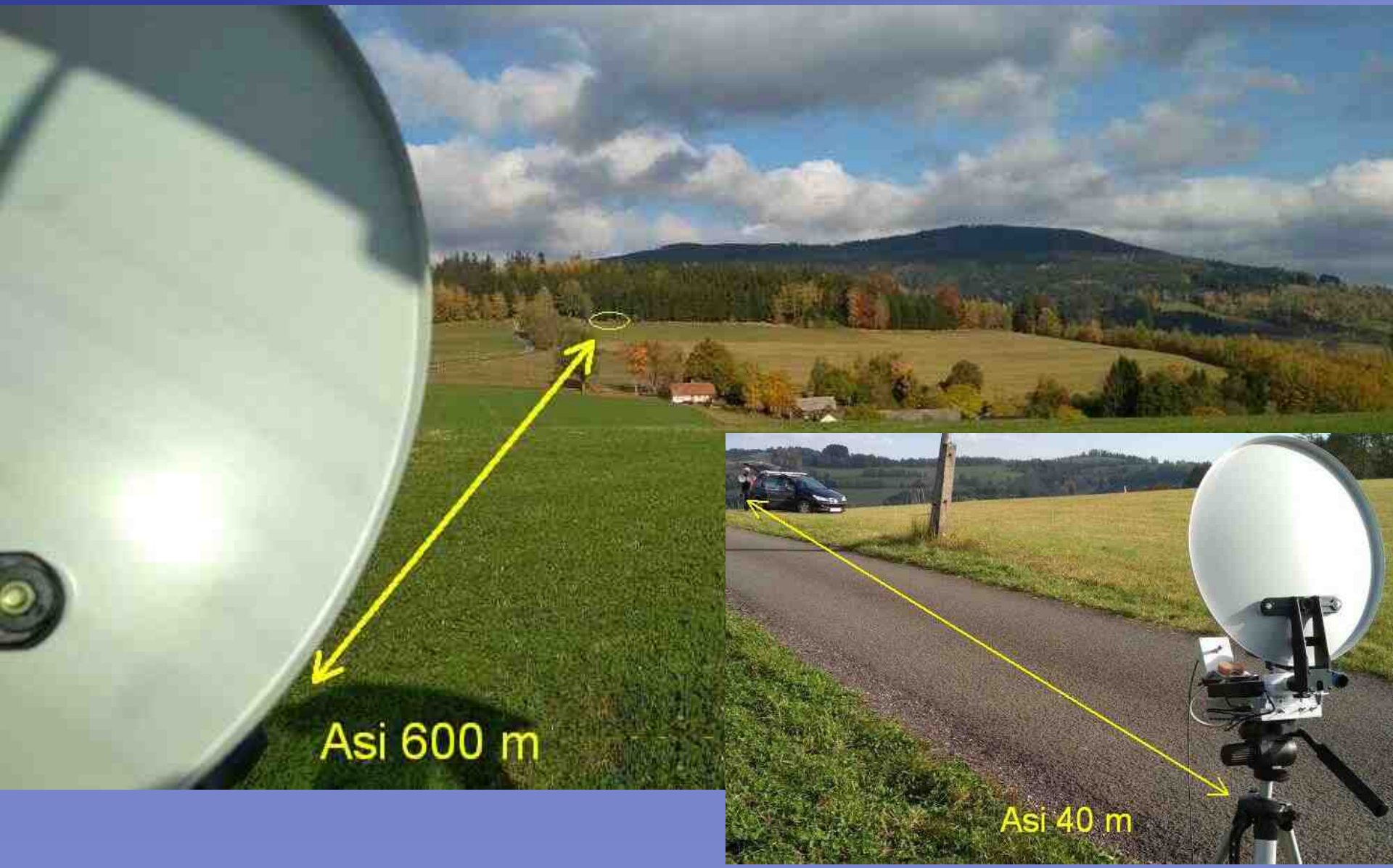
putty

122G_003_19F2611

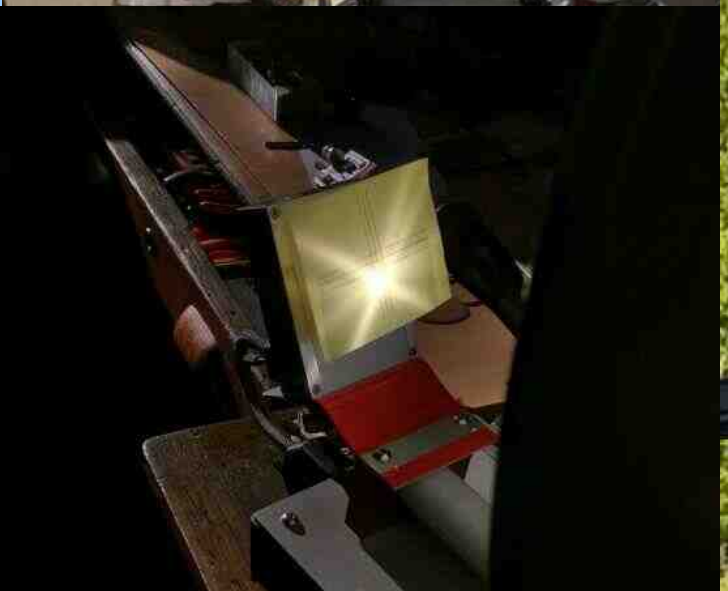
122G_003_20F3006

```
** 122G_003 VK3CV / WQ1S **
VERSION # 122G_003_20F3006
BEACON = de VK3CV/WQ1S QF22ma
BEACON CARRIER DELAY = 1E
CHANNEL E DATA = 10 72 01 17 DD 88 10 72 01 17 E3 2C
ER  TU  REFV EC VCOV DCIN
0C 0DF2 01D5 22 0195 014A GPS
```

Na podzim r.2020 - první test venku



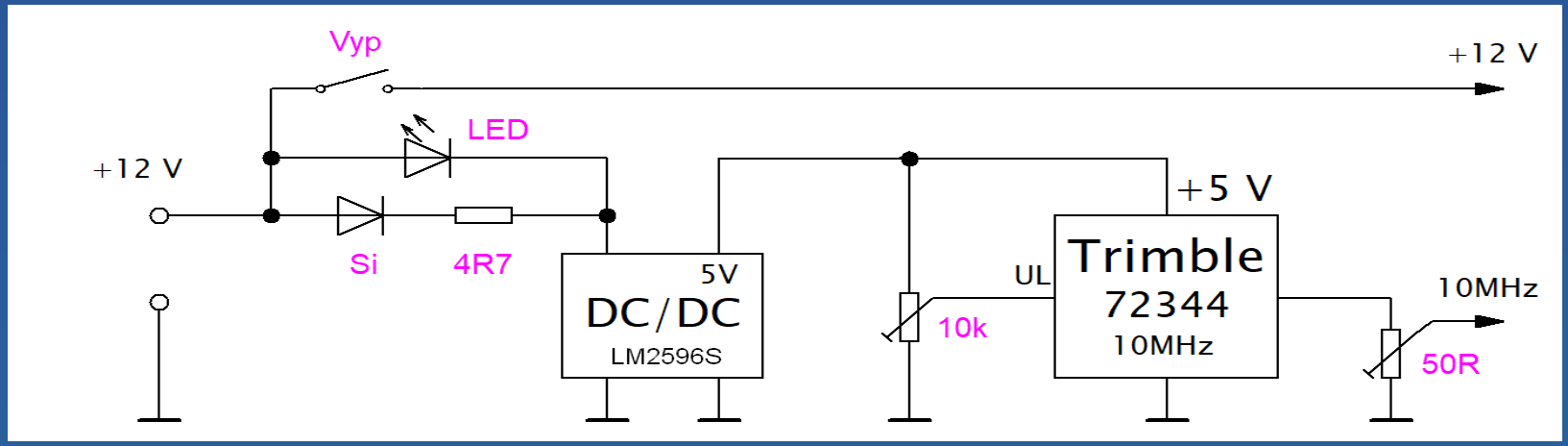

MAXIMUM



Puškohled - úprava

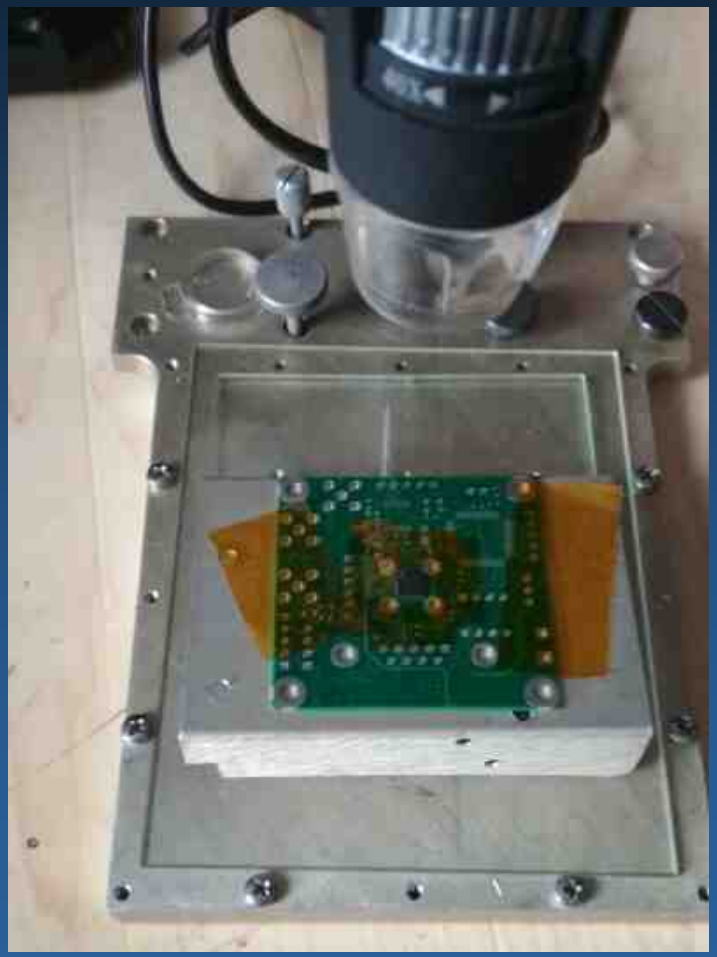
GPS 1PPS nebo
10 MHz externí reference

10 MHz reference

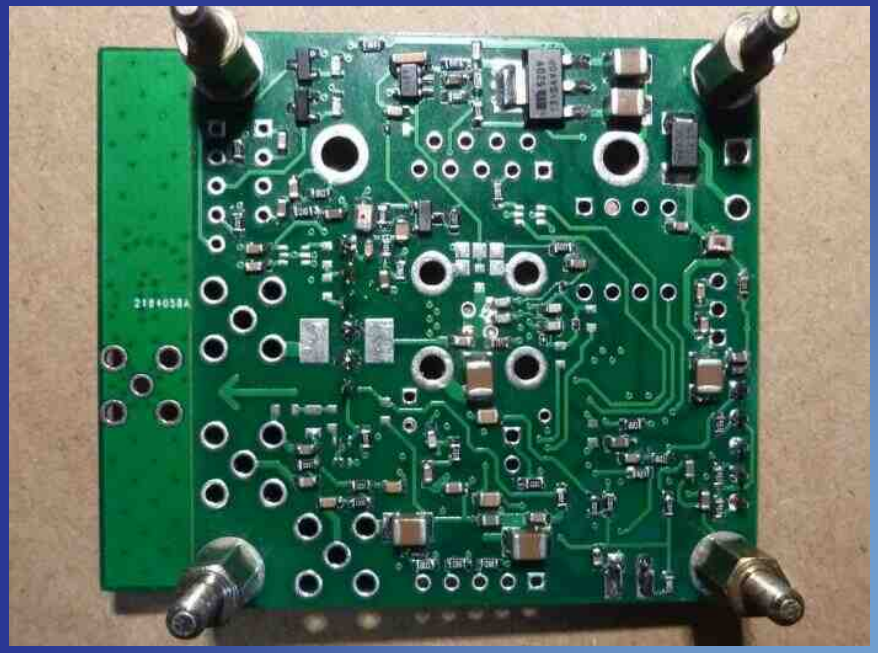


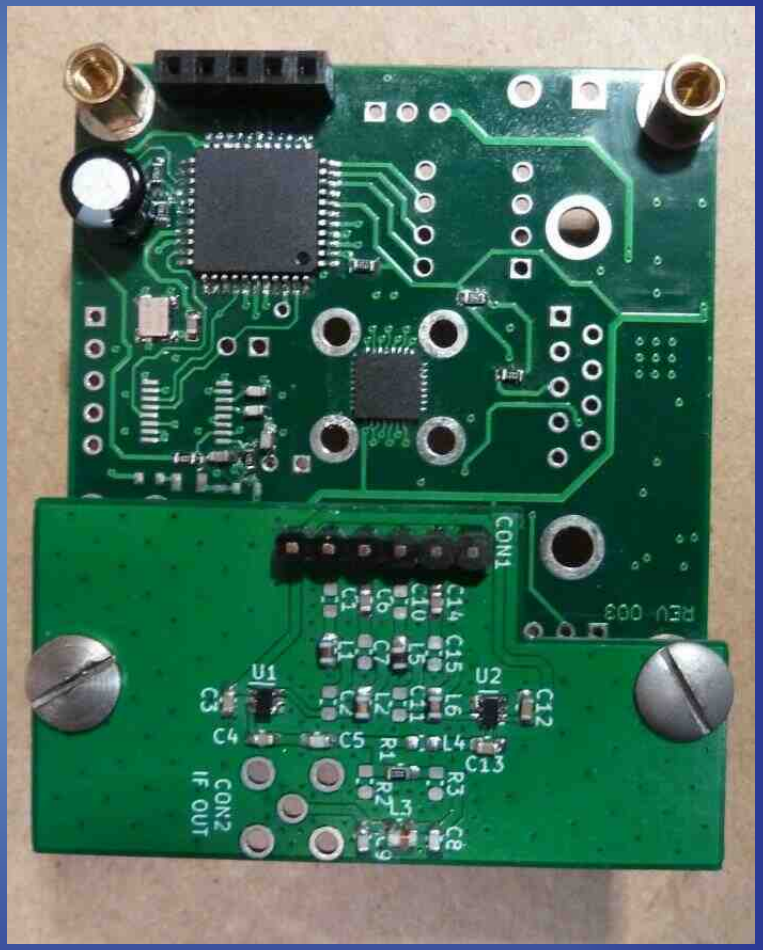
Trimble

Stavba druhého kusu 122GHz VK3CV (Maják pro testy)

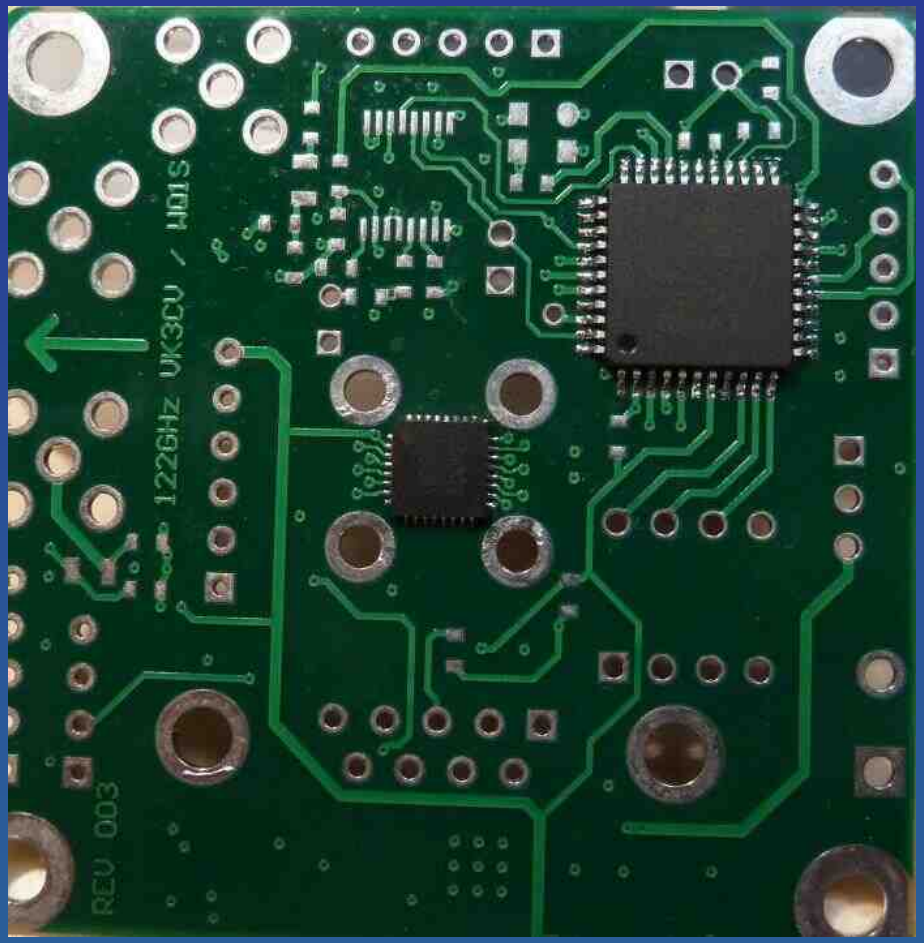


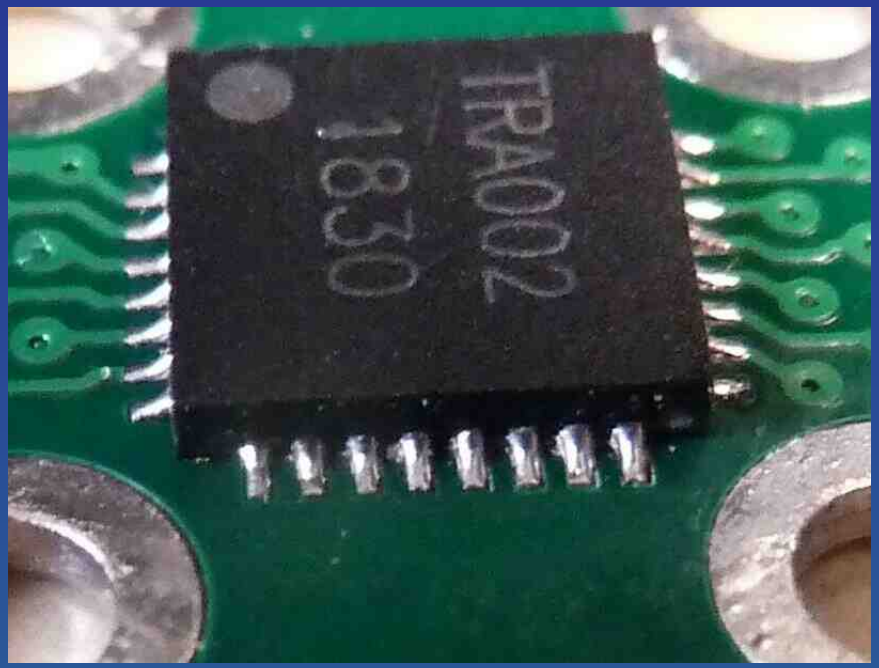
Osazování SMD





Osazování SMD



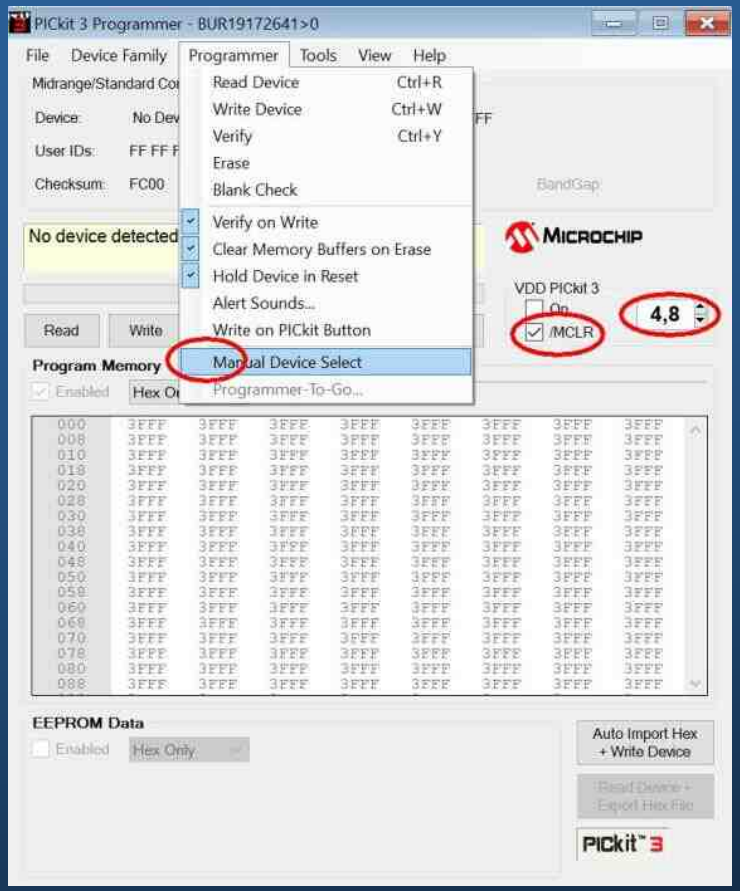


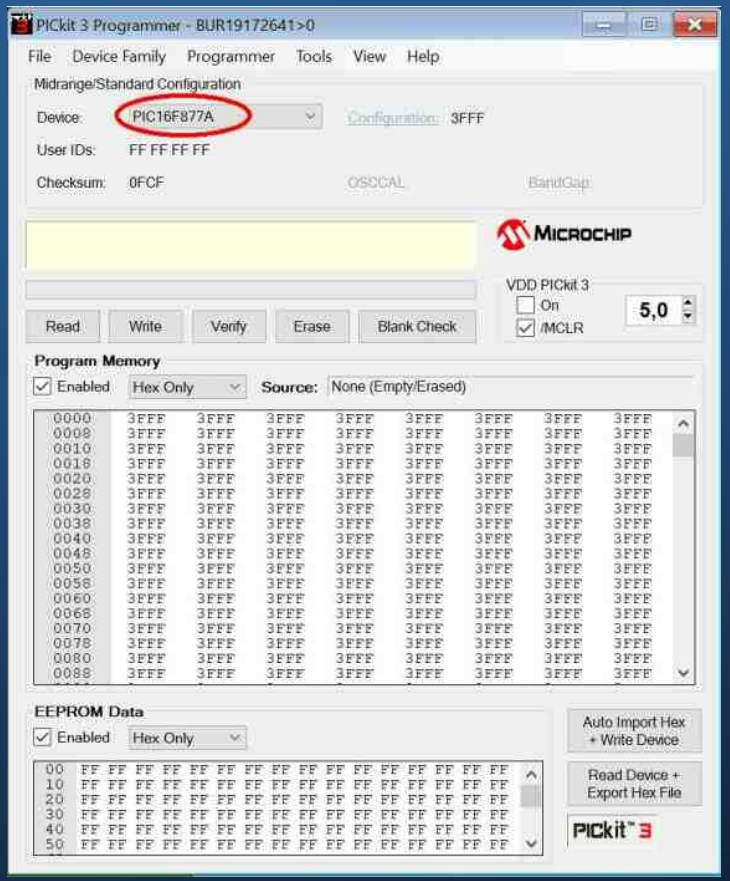
Skříňka


GPS NEO7M
VK3CV
Piezo
IQ Combiner


MICROWAVE
BEACON
122,250
122,400
122,500
PTT
KEY

Programování PIC16LF877A (ICSP)

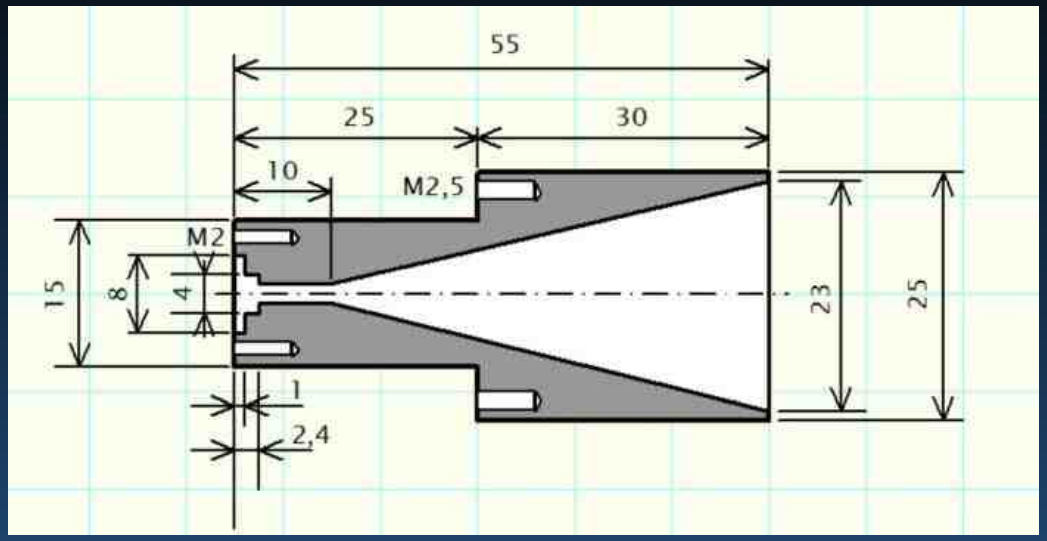


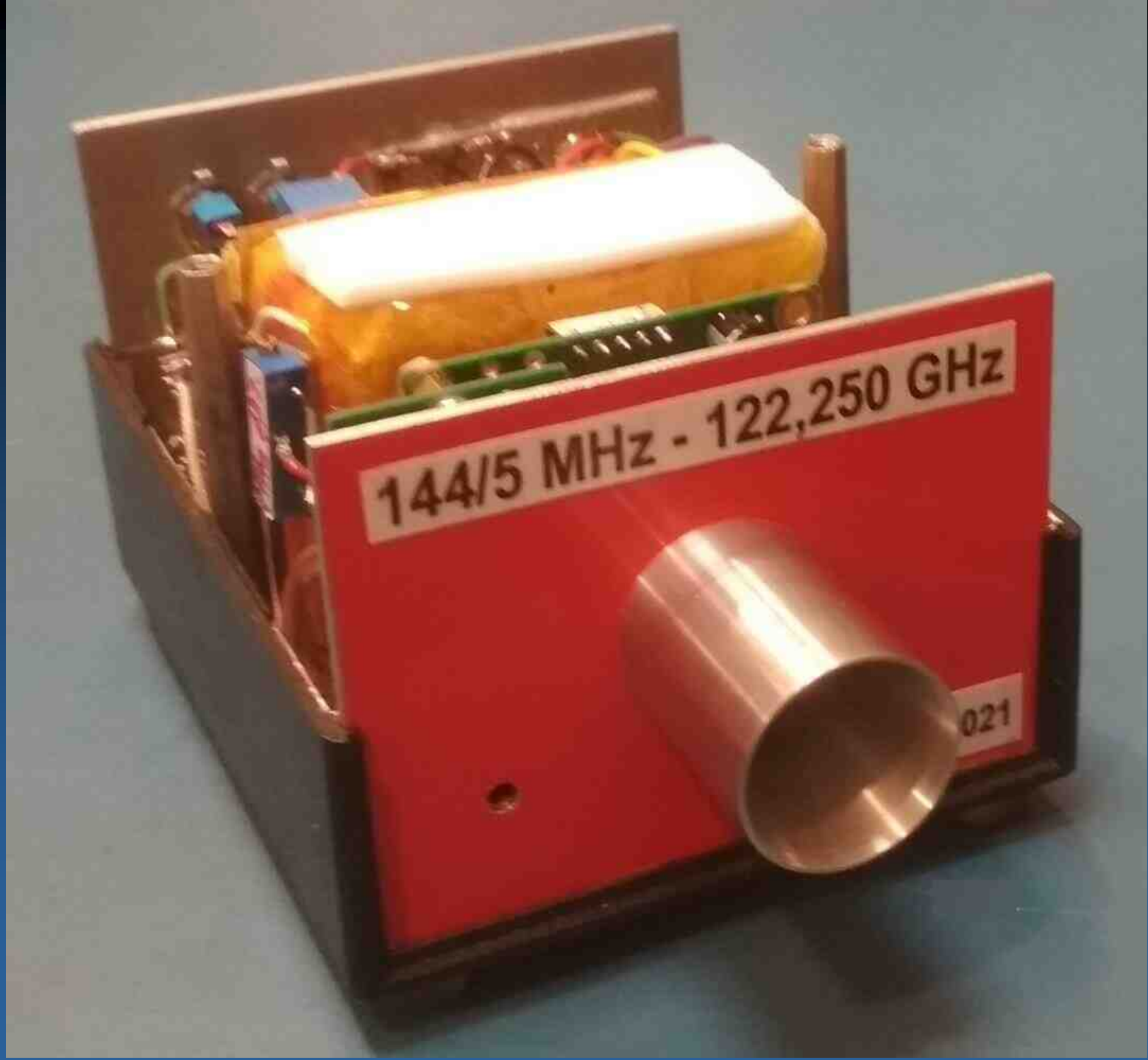


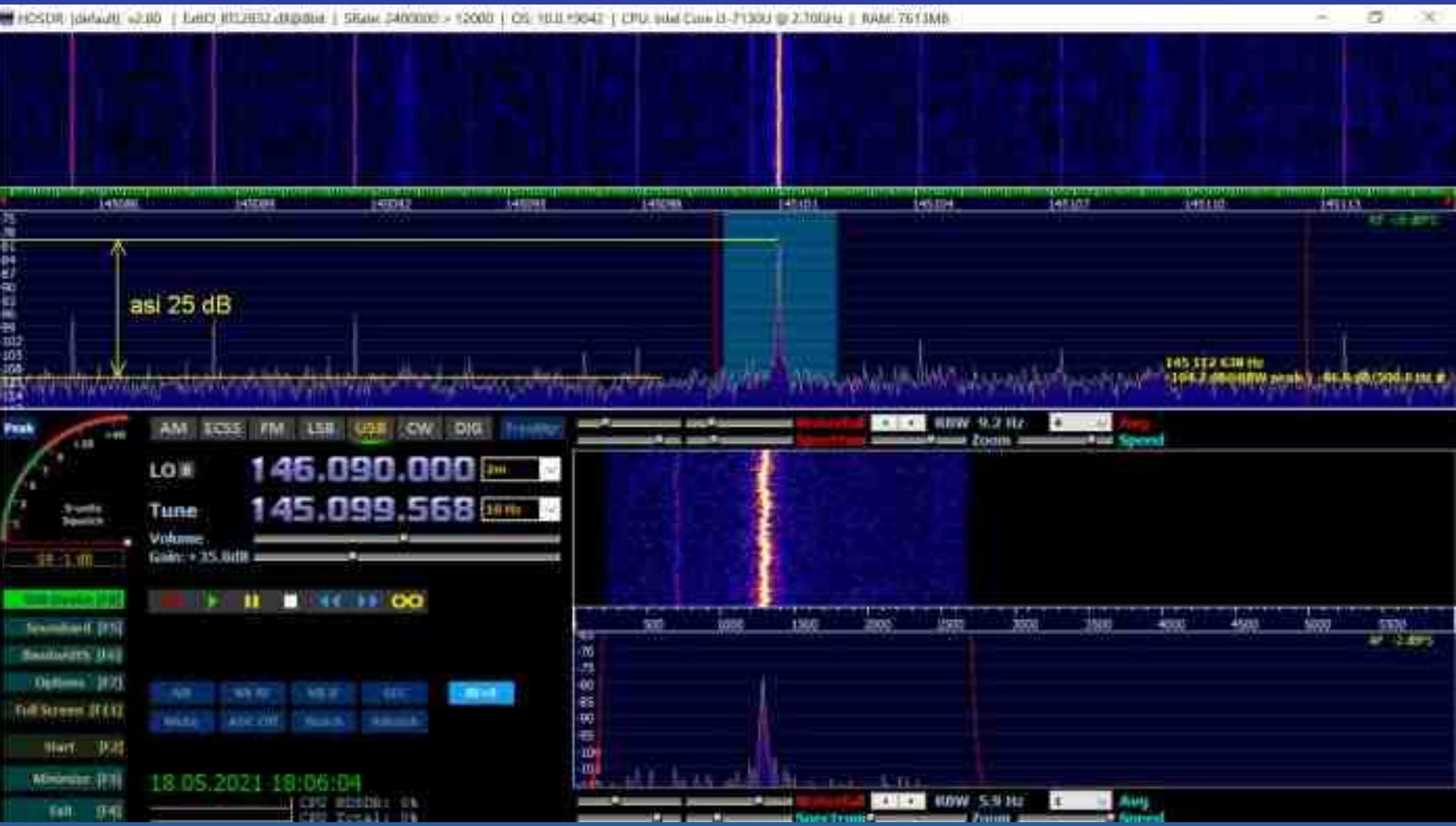
Pozor !

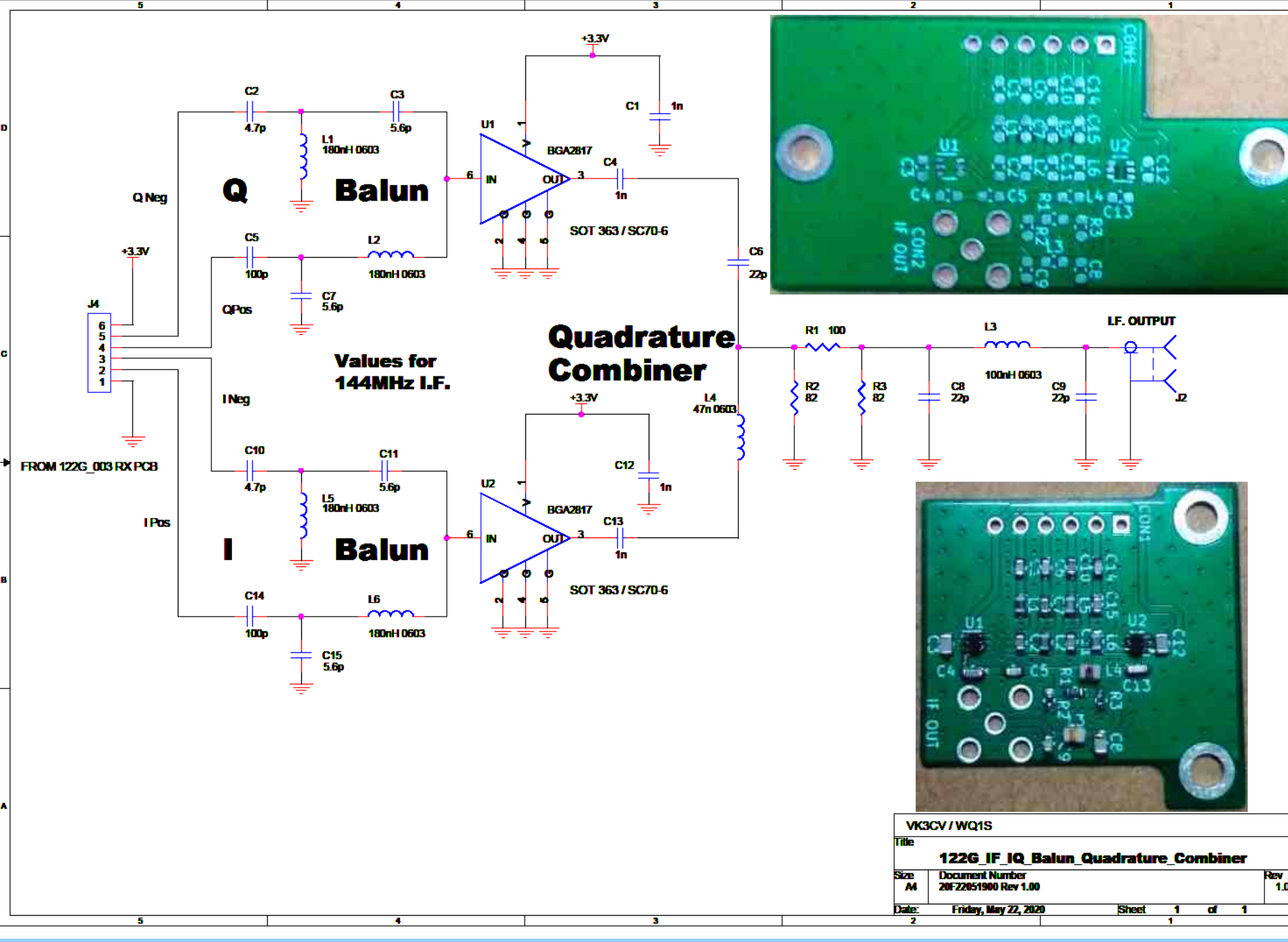
Nejprve připojit napájení desky potom připojit programátor.

Výroba antény - horna




144/5 MHz - 122,250 GHz

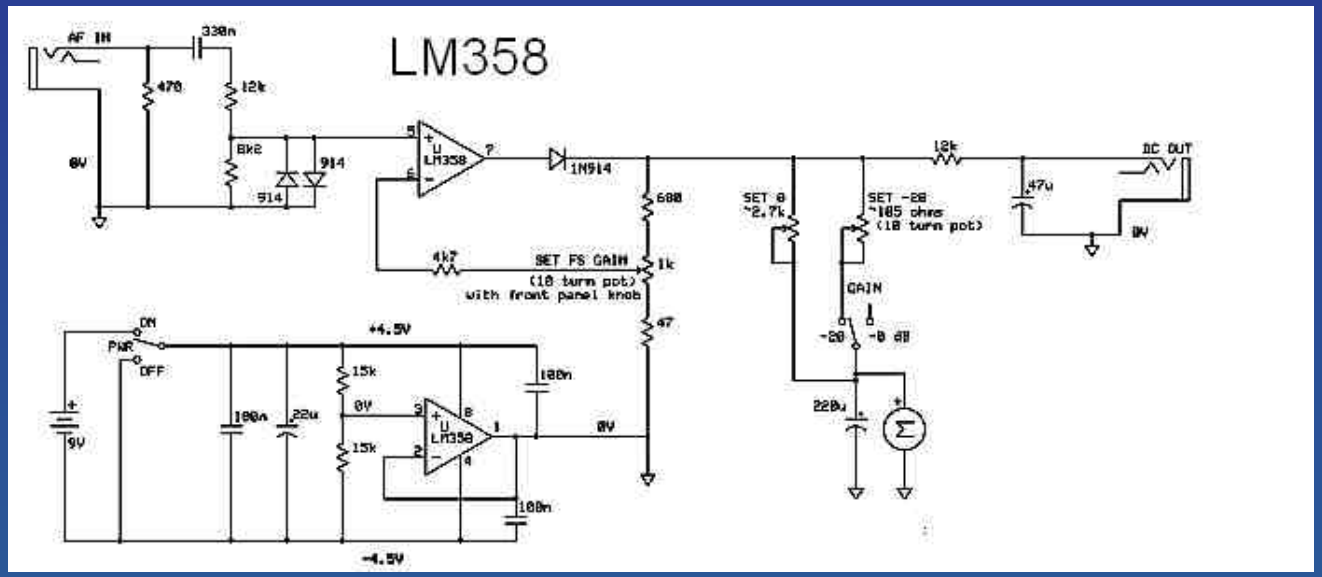

asi 25 dB
AM
LSB
USB
CW
DIG
LO
146.090.000
Tune
145.099.568
Volume
18.05.2021 18:06:04



VK3CV / WQ1S		
Title: 122G_IF_IQ_Balun_Quadrature_Combiner		
Size: A4	Document Number: 20F22051900 Rev 1.00	Rev: 1.0
Date: Friday, May 22, 2020	Sheet 1 of 1	

Audiovotmetr podle K6ML

Audiovotmetr se připojí na NF výstup přijímače, AGC nastavit na vypnuto



https://groups.io/g/The122GProject

Od října 2019 – diskuzní fórum – (2703)

Poslední témata:

- stabilita kmitočtu
- teflonové čočky

Dokumentace k 122G VK3CV je na

https://groups.io/g/The122GProject/wiki

Děkuji za pozornost.

Mnoho pěkných QSO na milimetrových pásmech