

## TECHNICAL DESCRIPTION AND CIRCUIT FUNCTION

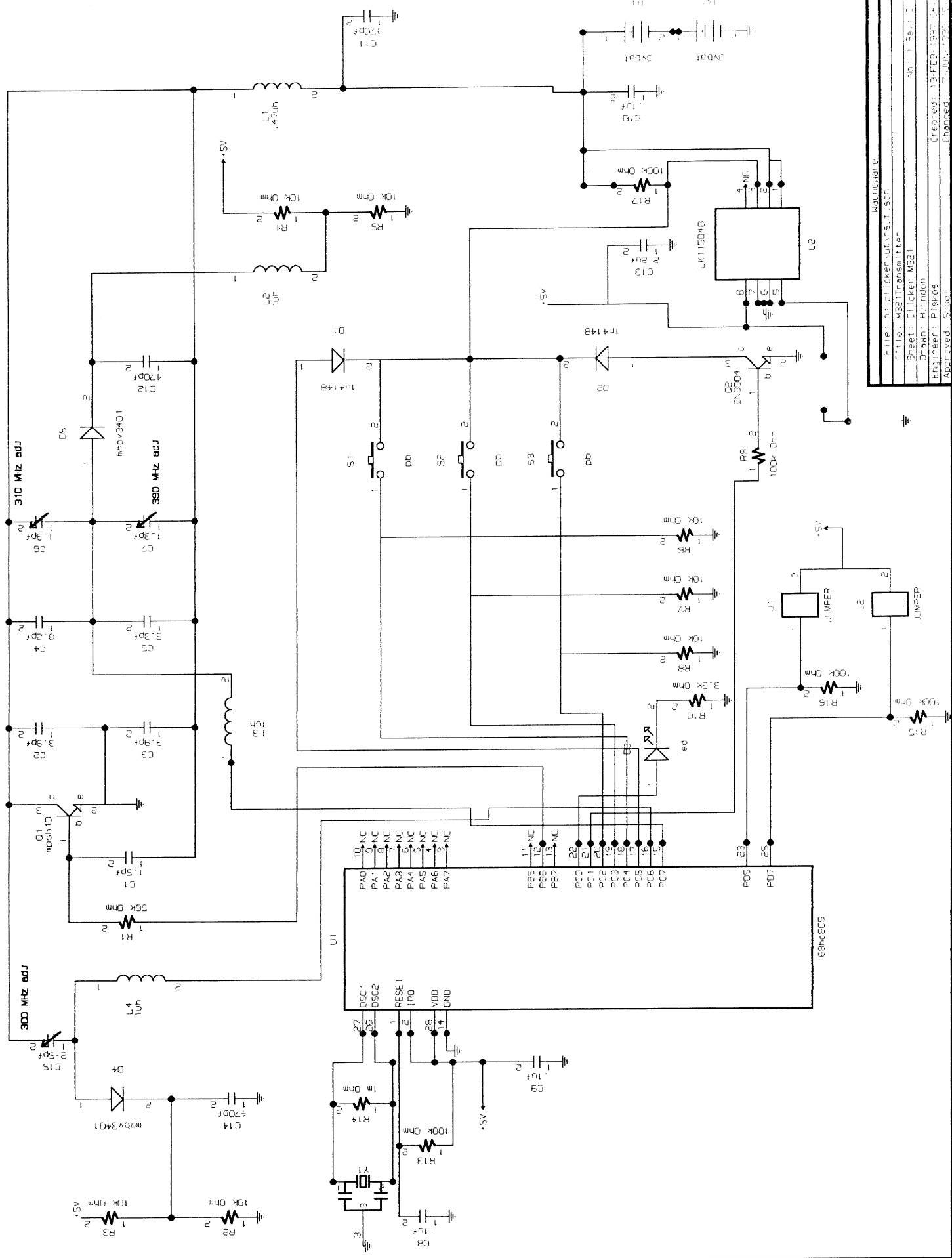
Two 3v batteries provide 6 vdc. U2 regulates B+. SW1, SW2, SW3 entries are input to U1 encoder which sets pulse width and generates pulse train. U1 output feeds Q1 {RF oscillator}. Circuit board traces and selected capacitors provide the RF tank circuit and antenna.

C15 is factory tuned to 300 MHZ.

C6 is factory tuned to 310 MHZ.

C7 is factory tuned to 390 MHZ.

No user tuning is required.



8051basen  
 File: m:\clcker\m32\m321.sch  
 Title: M321Transmitter  
 Sheet: Clcker M321  
 Drawn: Harndon  
 Engineer: Plekos  
 Created: 13-FEB-1997 04:05  
 Approved: Sabat

# COMPONENT LIST

## Model 321 BOM

02/02/99

| Item | Part_Num | Type     | Description          | Ea | P/N                  | REF DES              |
|------|----------|----------|----------------------|----|----------------------|----------------------|
| 1    | 100-007  | Resistor | 100k, 1/10w, 5% SMT  | 5  | CR0805-1003JTR       | R9 R13 R15 R16 R17   |
| 2    | 100-008  | Resistor | 10k, 1/10w, 5% SMT   | 7  | CR0805-1002JTR       | R2 R3 R4 R5 R6 R7 R8 |
| 3    | 100-009  | Resistor | 1M, 1/10w, 5% SMT    | 1  | CR0805-1004JTR       | R14                  |
| 4    | 100-012  | Resistor | 3.3K, 1/10w, 5%      | 1  | CR0805-3301JTR       | R10                  |
| 5    | 100-014  | Resistor | 56k, 1/10w, 5%       | 1  | CR0805-5602JTR       | R1                   |
| 6    | 200-002  | Cap      | CAP, VAR, 2.8-10PF   | 1  | GKG10011 / SG1002-ND | C15                  |
| 7    | 200-008  | Cap      | CAP, .1uf SMT        | 3  | 12065C104KATM        | C8 C9 C10            |
| 8    | 200-009  | Cap      | CAP,VAR, 1.7 - 3 pf  | 2  | RS03A                | C6 C7                |
| 9    | 200-010  | Cap      | CAP, 1.5pf           | 1  | 08055A1R5CATP        | C1                   |
| 10   | 200-011  | Cap      | CAP, 2.2 uf          | 1  | 225K10AH             | C13                  |
| 11   | 200-012  | Cap      | CAP,3.9pf            | 2  | 08055A3R9CATR        | C2 C3                |
| 12   | 200-013  | Cap      | CAP, 470pf           | 3  | 08055A471JATM        | C11 C12 C14          |
| 13   | 200-014  | Cap      | CAP, 8.2 pf          | 1  | MA0805CG-8R2J500     | C4                   |
| 14   | 200-015  | Cap      | CAP, 3.3 pf          | 1  | 08055A3R3CATN        | C5                   |
| 15   | 300-001  | Inductor | Choke, 1UH           | 4  | 78F1ROK / M7813-ND   | L2 L3 L4             |
| 16   | 300-004  | Resontr  | 4 MHz Resonator SMT  | 1  | CSTCS4.00MG-TC       | Y1                   |
| 17   | 300-006  | Inductor | Choke, .47UH         | 4  | AC20-R47K            | L1                   |
| 18   | 400-002  | Diode    | LED                  | 1  | HLMP1700QT-ND        | D3                   |
| 19   | 400-004  | Trans    | XSTR, MPS-H10        | 1  | MPS -H10 / MPSH10-ND | Q1                   |
| 20   | 400-008  | Diode    | HS Diode SMT         | 2  | MMBD4148             | D1 D2                |
| 21   | 400-009  | XSTR     | NPN, SMT             | 1  | MMBD3904LTI (MOT)    | Q2                   |
| 22   | 400-012  | IC       | Voltage reg          | 1  | LK115D47             | U2                   |
| 23   | 400-013  | Diode    | Pin Diode            | 2  | MMBV3401LT1 (MOT)    | D4 D5                |
| 24   | 500-002  | Switch   | SW, TACT, 160GF      | 3  | PTS645SL43           | SW1                  |
| 25   | 700-004  | PCB      | UT PCB               | 1  |                      |                      |
| 26   | 800-003  | Insulatr | Plastic Insulator    | 1  |                      |                      |
| 27   | 800-004  | Clip     | Battery Clip         | 2  |                      |                      |
| 28   | 800-005  | Battery  | Lithium Battery 2025 | 1  |                      |                      |
| 29   | 800-028  | IC       | Processor            | 1  | 68HC805P18           | U1                   |
| 30   | 800-029  | Case     | Case, Plastic        | 1  |                      |                      |
| 31   | 800-030  | Label    | Label, M321          | 1  |                      |                      |
| 32   | 800-032  | Screw    | Pan Philips 2x1/4    | 1  |                      |                      |
| 33   | 800-045  | Inst     | M321 Instructions    | 1  |                      |                      |
| 34   | 800-054  | Case     | Shorting Strips      | 1  |                      |                      |