

## 7.0 Active Circuits List

### 7.1 Digital Board Active Circuits List

|      |     |                   |              |                                                                              | DESCRIPTION           | REFERENCE                     |
|------|-----|-------------------|--------------|------------------------------------------------------------------------------|-----------------------|-------------------------------|
|      |     |                   | File :       |                                                                              | VTU Digital Board     | 06C2432 REV - E'<br>07-21-99  |
| ITEM | QTY | PART<br>NUMBER    | IDENT        | FUNCTION                                                                     | MANF.                 | SYMBOL/REF.<br>DESIGNATOR     |
| 1    | 1   | ATS-M49 8.000000  | CRYSTAL      | 8.00 Mhz CRYSTAL USED AS CLOCKING INPUT TO MICROCONTROLLER U1                | M-TRON                | X1                            |
| 2    | 1   | ATS-M49 4.915200  | CRYSTAL      | 4.9152 Mhz CRYSTAL USED FOR MODULATION/DEMODULATION BY MX909A MODEM CHIP U12 | M-TRON                | X2                            |
| 3    | 1   | SK33              | DIODES       | SCHOTTKY RECTIFIER USED FOR BIAS WITHIN POWER SUPPLY                         | ROHM                  | CR1                           |
| 4    | 1   | SA12CAT           | DIODES       | TRANZORB USED IN POWER SUPPLY                                                | GENERAL INSTRUMENTS   | D1                            |
| 5    | 1   | CMPD914           | DIODES       | H SPEED SWITCHING USED TO DRIVE LED INDICATOR LED1                           | CENTRAL               | D2 (SUBSTITUTE -<br>MMBD4148) |
| 6    | 1   | CMPT3904          | TRANSISTOR   | 2N3904 INTERRUPT LINE DRIVE                                                  | CENTRL SEMI.          | Q1                            |
| 7    | 8   | CMPT3904          | TRANSISTOR   | 2N3904 LED DISPLAY OR LINE DRIVER TRANSISTORS                                | CENTRL SEMI.          | Q2,3,4,5,6,7,8,16             |
| 8    | 2   | FMMT4403          | TRANSISTOR   | PNP 4403 USED AS LED2 DISIPAY DRIVER                                         | ZETEX                 | Q11,15                        |
| 9    | 2   | MTD20P06HDL       | TRANSISTOR   | FET USED AS SIGNAL INVERTERS AND LATCHES                                     | MOTOROLA              | Q14,13                        |
| 10   | 1   | MMFT3055VL        | TRANSISTOR   | FET USED AS SIGNAL INVERTERS AND LATCHES                                     | MOTOROLA              | Q12                           |
| 11   | 1   | LM2940-8.0 NO SUB | VOLTAGE REG. | 8V POWER SUPPLY REGULATOR LOW VOLTAGE DROPOUT                                | NATIONAL              | U26                           |
| 12   | 1   | MC7805CT NO SUB   | VOLTAGE REG. | 5V POWER SUPPLY REGULATOR                                                    | MOTOROLA              | U27                           |
| 13   | 1   | AT29C256R-15TI    | IC           | FLASH ROM CHIP FOR MICROCONTROLLER U1, TSOP                                  | ATMEL                 | U2                            |
| 14   | 1   | CMPT4033          | TRANSISTOR   | PNP, LOW VCEsat USED FOR GPS POWER MANAGEMENT IN JP3                         | CENTRAL SEMICONDUCTOR | Q9                            |

|    |   |                  |                |                                                                                                                                                                                                |                    |                                  |
|----|---|------------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------|
| 15 | 1 | DS1233-10N       | IC             | ECONORESET FOR CONTROL OF MICROCONTROLLER U1 RESETS                                                                                                                                            | DALLAS             | U11                              |
| 16 | 3 | LM201AD          | IC             | OP AMP USED AS XMIT MODULATION ENVELOPE SHAPING FILTERS                                                                                                                                        | MOTOROLA           | U15,28,29                        |
| 17 | 4 | HCPL-0700        | IC             | OPTO ISOLATOR FOR SWITCH INPUT BUFFERING                                                                                                                                                       | HP                 | U17,18,19,20                     |
| 18 | 1 | IDT71256S20YI    | IC             | RAM CHIP PLCC USED BY MICROCONTROLLER U1                                                                                                                                                       | IDT                | U9                               |
| 19 | 1 | MC68HC11A1FN     | IC             | MICROCONTROLLER EXECUTING CONTROLLING FIRMWARE                                                                                                                                                 | MOTOROLA           | U1                               |
| 20 | 1 | MC74HC04AD       | IC             | HEX INVERTER USED FOR DIGITAL SIGNAL CONDITIONING                                                                                                                                              | MOTOROLA           | U8                               |
| 21 | 2 | MC74HC08AD       | IC             | AND Gate USED FOR DIGITAL SIGNAL CONDITIONING                                                                                                                                                  | MOTOROLA           | U5,U6                            |
| 22 | 2 | MC74HC14AD       | IC             | INVERTER/BUFFER FOR IC CONTROL LINE BUFFERING                                                                                                                                                  | MOTOROLA           | U21,22                           |
| 23 | 1 | MC74HC32AD       | IC             | OR Gate USED FOR DIGITAL SIGNAL CONDITIONING                                                                                                                                                   | MOTOROLA           | U7                               |
| 24 | 1 | MC74HC138AD      | IC             | DEMUX                                                                                                                                                                                          | MOTOROLA           | U4                               |
| 25 | 2 | MC74HC373AD      | IC             | DATA SELECTOR FOR CONTROLL OF MICROCONTROLLER/MEMORY ADRESS LINES OR DATA DECODING                                                                                                             | MOTOROLA           | U3,U14                           |
| 26 | 1 | MC14050BD        | IC             | DIGITAL SIGNAL CONDITIONING AND BUFFERING                                                                                                                                                      | MOTOROLA           | U13                              |
| 27 | 1 | MX909ADW         | IC             | MODEM DATA PUMP FOR RADIO GMSK MODULATION/DEMODULATION INCLUDING FEC, CRC TIME SPREADING, DATA SCRAMBLING                                                                                      | MX COM             | U12                              |
| 28 | 1 | LMC660AIM        | IC             | QUAD OP-AMP USED AS BASEBAND RECEIVER SIGNAL (RSSI, RXOUT) AMPLIFICATION, FILTERING AND INVERSION                                                                                              | NATIONAL           | U10                              |
| 29 | 1 | ST16C550IJ44     | IC             | UART Chip FOR RS232 INTERFACE CONTROL                                                                                                                                                          | EXAR               | U23                              |
| 30 | 1 | LTC1383IS        | IC             | RS-232 LEVER SHIFTER                                                                                                                                                                           | LINEAR TECH        | U24                              |
| 31 | 1 | OEM ONCORE       | Sub Assemblies | GPS 8 CHANNEL RECEIVER WITH RS232 DATA INTERFACE                                                                                                                                               | MOTOROLA           | PLUGGED INTO JP3 HEADRSX2        |
| 32 | 1 | 242-3474-XYZ (1) | Sub Assemblies | HIGH SPECIFICATION SYNTHESIZED 2 WATT DATA TRANSCEIVER OPERATING AT 450-470MHz UHF<br>Note (1):<br>242-3474-582 450-470MHz, 12.5kHz BW, 9.6kbps<br>242-3474-592 450-470MHz, 25kHz BW, 19.2kbps | JOHNSON DATA RADIO | PLUGGED INTO JP1 (14 PIN HEADER) |

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