D.2.6 **Counter**: A 16 Bit UP/Down Counter/ Timer is available so you can use it as required or as a **PWM** with external circuitry. Again, one **MBTR** should be configured as "TX" and another as "RX".

D.2.7 **FIFO**: Almost like our **Virtual Wire**[TM] but you can transmit and receive in "Bursts" up to 8 bit wide and yu can do it in a two way mode by switching the **MBTR** from **TX** to **RX** upon completion of data sent. Remember that the **MBTR** has 2 each, 8 bit storage registers. The first to store incoming data and the second to store outgoing data (FIFO). This can also be used to store "Preamble" and ID data.

D.2.8 **Custom Configurations**: OTEK will be happy to customize your confidential propriatory firmware requirements as well as hardware, whether it is one piece or millions. All of our customers are important (we do not check your size).

D.2.9 **Package**: As of this writing, the "**TR**" version of the **MBTR** is only available in "**Naked**" configuration for **OEMs** with either helical or whip antenna and 3V or 4 - 12VDC power. Consult **OTEK** for other packages.

PRELIMINARY SPECIFICATIONS @ 3V, 25°C AMBIENT WARNING: "ESD"

NOTE: See important footnotes that apply to each version as well as the description of Sections A, B, C and D and Ordering Information.

"T" (Transmitter Only: (See General Specifications)

*Input Level: 3V Logic with 47K pull up. **NOTE:** Never exceed the suppply voltage!

*Input Channels: Four (4)

*Power Consumption: Stand-By: 1μA, Idle: 5mA, Transmit: 25mA (maximum power)

*Power Supply Input Range: See Ordering Information and footnotes.

"R" (Receiver Only): (See General Specs)

*Outputs: O.C.T. active low, 30V, 30mA sink (2N3904), 3V Logic Outputs: Active High, 2mA Source, Sink: 3mA.

*Output Channels: Four (4)

*Power Consumption: Stand-by: 1μA, Idle: 5mA, Receiving: 15mA

*Power Supply Input Range: See Ordering Information and Footnotes.

"P" or "S" or "C" Repeater or Transceiver Only":
(See General Specs)

*Inputs & Outputs Levels: 3V logic (Dry Contact OK)

*Switchover Time (TX to RX): 500μS, (RX to TX): 400μS

*Power Consumption: RX 15mA, TX: 30mA, Idle: 5mA

GENERAL SPECIFICATIONS (ALL VERSIONS)

*Carrier Modulation: FSK Frequency Hopping (where applicable)

*Bandwidth (Center): 311-319: (315); 331-439: (433), 861-879 (868), 901-929 (915)

*# Of Hopping Channels: 50 per Part 15.247

*Max. Data Rate: 57.6Kbps, 256Kbps on request

*Agency's Compliance: FCC, ETSI (For Unlicensed Operation) (*1)

*Crystal Frequency: 10MHz (PLL, AFC & AXAC)

*Antenna Drive: Differential, Self-Tuning

*Low Noise Amplifier (LNA): Programmable to 0, -6, -14 & -20dB

*Data Registers: TX: 2 ea. 8 Bit, RX: 1ea. 16 Bit (FIFO)

*Wake-Up Timer: Programmable from 1mS to 31 days or On Request

*Power Supply Range: 2.8 to 5.2V (*2)

*Power Consumption: See Individual Versions (T, R or "X") and Ordering Information

*Typical Ranges (Limited by Agency's Regulations) (*1)

    315MHz: Indoor: 300 Ft. L.O.S.: 1000 Ft.
    433MHz: Indoor: 300 Ft. L.O.S.: 1000 Ft.
    868MHz: Indoor: 500 Ft. L.O.S.: 2000 Ft.
    916MHz: Indoor: 500 Ft. L.O.S.: 2000 Ft.

*Low Battery Detector: Programmable in 50mV steps from 2.5-5V

*Logic Levels: Low: <1V, High: >2V

*Digital Inputs Current: <1μA, Digital Outputs Current: <2mA

*Receiver's Sensitivity: -109dBm

*Transmitter Output Power Range: 20 to -20dBm factory set for maximum allowed by agency for band used, down programmable (*1)

*P.O.R. 100mS max.

*SPI: To Industry's Standard(S)

*UART: To Industry's Standard (ASCII) (C)

*3V Logic (Non-UART): Unrestricted (Virtual Wire[TM])

*Programmable Addresses (ID): 256 (Option "C")(*3)

*Polling (RTS): 1-9 Readings (Option "C") from RX to TX

*A/D: 10 Bit Resolution, 0-2VDC F.S. Input (Option "C")

*Transceiver's Operating Modes: See Par. D.2 Field Configurable

NOTES: (S) = SPI Version, ("C") = μC Version, (T) = TX Only, (R) = RX Only, (TR) = Transceiver, (P) = Repeater