APPENDIX G: CAT Radio Support

NOTE: MS-DMT v2.00 B1.0.0.0. GUI has changed and this section has not yet been updated to reflect those changes.

The list of supported computer controlled HF SSB transceivers and receivers herein is current as of this build. Additional make/model radio equipment are always being added. Should your make/model radio not be listed, please provide the any documentation you may have for computer control programming.

All CAT modes operation listed below require that the CAT COM port be set correctly and not 0.

PTT TYPE	COMMENTS
CAT ONLY	Sends CAT PTT ON and CAT PTT OFF
CAT&RS232	CAT is used for PTT as above plus either DTR or RTS as below. Supports signaling for auxiliary interfacing requirements.
RS232	Asserts and de-asserts either the DTR or RTS lines for PTT on the CAT port predicated on the DTR/RTS box being checked or not.
EXTERNAL	None of the above PTT methods are used which allows for the use of an external hardware PTT method based on the modem audio out from the PCSDM such as with VOX PTT based external units.

CAT PTT = Main SSB or only radio CAT PTT ON and OFF command sent and no other others if CAT ONLY or CAT&RS232 is selected.

CAT DATA = Dedicated Data Port CAT PTT ON and OFF command sent if one exists for the RADIO MODEL and no other CAT PTT command if CAT ONLY or CAT&RS232 is selected.

CAT D/V = Radio DATA mode selection CAT command sent prior to PTT ON and is taken out of DATA mode after PTT OFF in support of Data/Voice SSB USB operation. Either the radios only CAT PTT command or its DATA port CAT PTT commands are sent. The DATA commands are sent but no CAT PTT commands are sent if RS232 or EXTERNAL is selected as the PTT TYPE.

REMOTE = The Radio requires Remote Enable and Remote Disable CAT commands, thus the radio must be powered and properly connected to the PC before the software is started and the software must terminate normally via EXIT for the radio to exit Remote configuration.

RADIO MODEL	STATUS	COMMENTS
NONE		Select when RS-232 PTT is desired by not CAT commands are desired to be sent over the port.
B2050	**CAT PTT**	Use for Barrett 20xx series and perhaps other models.
DATRON	**CAT PTT**	Use for 7000 series transceivers.
DATRON_DV	**CAT PTT**	Use for 7000 series transceivers for USB Data mode operation in transmit if the option is installed in the radio where upon return to receive USB is automatically selected for Voice operation.
DX-SR8	**CAT PTT** 9600,N,8,1	Use for DX-SR8-T, DX-SR8-E, DX-SR8-J, SR9-E NOTE: I have been informed that "Donners Country Crafts" makes an interface for the DX-SR8 that has been tested. Hamersville, OH 45130 Phone 513-783-8148 http://www.donnerstore.org Remote Control interfacing options: 1. This method is standard as used for firmware updates and cloning. It requires an optional ERW-7(USB) or ERW-4C(Serial) or compatible cable plugged into radio speaker jack “SP” on the front panel of radio, therefore during the PC control you must an external speaker connected to the phone jack but the AF power is very low so a use of commonly available PC speaker with internal amplifier. Takes 8 to 16 ohm impedance speakers. 2. This method is more complicated and not tested. Pins 1, 2 and 6 of the 8-pin Modular RJ45 jack may possibly be used if the control panel is separated from the radio and a Y splitter cable is used. 1. TXD data from radio to control panel

		2. RXD data from control panel to radio 3. 8V power to control panel (when radio is switched on) 4. Not in use 5. Mic signal / PWR On/Off button 6. GND 7. AF - Audio to speaker. 8. SPK GND- Speaker ground
FLEX	**CAT PTT** 9600,N,8,2	Supports all FLEX models, Apache Labs ANAN-10 and possibly the Sunair RT-8100
FT817	**CAT PTT** **REMOTE** **38400, 8N2**	Also FT-650, FT-655, FT-817ND, FT-857x, FT-897x, FT-847, VX1700 Radios must be turned on before software is started else the radio will not respond to CAT commands. **NOTE:** For FT-847 Requires the use of Null Modem cable. **NOTE:** FT-650, FT-655 works at 4800 baud only. They support 24-56Mhz coverage within our support window of 1.5-88Mhz. An external TTL level converter is required using a 1/8 inch 3 conductor stereo plug where tip is Serial Data Out from the PC and shield is ground is required from the external level converter. The ring should only be connected if the RxD line will be monitor for Squelch status for scanning applications.
FT890	**CAT PTT** **4800, 8N2**	This supports FT-100, FT-600, FT-747, FT-80C, FT-840, FT-890, FT-900, FT920, FT-990, FT1000D, FT1000MP, SB-140, Vertex System 600. **NOTE:** FT-920 PTT works even though not documented. **NOTE:** FT-990 requires ROM version 1.2 or later. **NOTE:** FT-1000D requires ROM version 6.0 or later.
FT2000	**CAT PTT** **38400, 8N2**	Also for FT-2000D, FT-450, FT-950, FTDX3000, FTDX5000, FTDX9000

ICOM	**CAT PTT** **19200, 8N1**	Supports any ICOM model that supports CAT PTT for use with MIC port or on really older rigs, any port where you need to be sure not to use a Mic wired for VOX. NOTE: Broadcast Radio Address 00h is sent which all radios respond to regardless of actually address.
ICOM_DV1	**CAT D/V** **19200, 8N1**	Supports IC746PRO, IC756PRO, IC756PROII, IC756PROIII and Signal One Milspec 1030E-DSP NOTE: Broadcast Radio Address 00h is sent which all radios respond to regardless of actually address. NOTE: ACC port RX BW may be too narrow in DATA mode for MS110A and other 2400baud waveforms, but should suffice for S4529 1200 baud requirement of 1.24Khz BW.
ICOM_DV2	**CAT D/V** **19200, 8N1**	Supports IC7700, IC7800 DATA Mode with Wide Filter NOTE: Broadcast Radio Address 00h is sent which all radios respond to regardless of actually address.
IC703_DV	**CAT D/V** **19200, 8N1**	Supports IC703 NOTE: Radio Address: 68h
IC7100_DV	**CAT D/V** **19200, 8N1**	Supports IC7100 for DATA Mode with filter FIL1 designated for USB port. NOTE: Radio Address: 88h
IC7200_DV	**CAT D/V** **19200, 8N1**	Supports IC7200 DATA Mode with wide filter FIL1 designated for ACC and USB port. NOTE: Radio Address: 76h
IC7410_DV1	**CAT D/V** **19200, 8N1**	Supports IC-7410 for ACC port

		NOTE: Radio Address: 80h
IC7600_DV1	**CAT D/V** **19200, 8N1**	Supports IC-7600 for ACC port NOTE: Radio Address: 7Ah
IC9100_DV1	**CAT D/V** **19200, 8N1**	Supports IC-9100 for ACC port NOTE: Radio Address: 7Ch
IC7410_DV2	**CAT D/V** **19200, 8N1**	Supports IC-7410 for USB port NOTE: Radio Address: 80h
IC7600_DV2	**CAT D/V** **19200, 8N1**	Supports IC-7600 for USB port NOTE: Radio Address: 7Ah
IC9100_DV2	**CAT D/V** **19200, 8N1**	Supports IC-9100 for USB port NOTE: Radio Address: 7Ch
ICOMNMEA	**CAT PTT** **4800, 8N1**	Supports all current ICOM Commercial Land Mobile/ALE and HF MARINE radio models: ICM700PRO, ICM710, ICM710RT, ICM801E, ICM802, ICF7000. May support ICF8100. **NOTE:** ICM801E Remote connector must be set to NMEA. NOTE: Broadcast Radio Address 00h is sent which all radios respond to regardless of actually address.
JSB176	**CAT PTT** **REMOTE** **1200, 8N1**	Also supports Raytheon RAY 152 and possibly RAY 150. **NOTE:** Optional RS232C unit CMM-741 must be installed piggyback on the CPU Unit CDC-493R. The radio must be in RMT via the front panel. A straight RS-232 cable is required.

JSB196	**CAT PTT** **REMOTE** **9600,7E1**	JRC JSB-196 and JSB-196GM Marine SSB radios using firmware older than v1.7 that requires data string checksum support. **NOTE:** Null modem cable required.
JST245	**CAT PTT** **REMOTE** **4800, 8N1**	Also select for JST-145 and JST-135 operation. **NOTE:** For JST-135 1200 baud must be selected.
K3_DV	**CAT D/V** **38400, 8N1**	Supports K3 data port for PTT where the radio is switched into DATA mode for TX and to USB on RX for Voice comms. For basic K3 CAT PTT use selection KNWD450. K3 directly supports RS232 RTS line for PTT if enabled.
KNWD450	**CAT PTT** **4800, 8N2**	Sends TX; for PTT ON and RX; for PTT OFF, supports Kenwood legacy radio models and many other manufacturers models that have adopted the Kenwood command protocol. NOTE: Use this selection for older firmware TS-2000
KNWD480	**CAT PTT** **9600, 8N2**	Sends TX1; for PTT ON and RX; for PTT OFF in support of 480 ANI port and 590 USB port.
KNWD590	**CAT PTT** **9600, 8N2**	Sends TX0; for PTT ON and RX; for PTT OFF in support of TS-590 NOTE: Use this selection for newer firmware TS-2000
MICOM	**CAT PTT** **9600, 8O1**	Supports models MICOM-1, 2E, 2B, 2BF, 2BT, 2EF, 2ES, 2ET-RDP, 2ET-RDP2, 2MF, 2R, 2RS, 2TS, RM125, RM125R, RM500, RM500E, RM500R, RM1000, 3F, 3R, 3T, RDP3-DHS, MICOM-H, MICOM-Z and perhaps others. To use a radio with no control head Short pins 13 and 14.

		Either the MIC or AUX port of the radio using TXD, RXD and GND will work. Refer to your radios manual. Interfacing to the PC is standard RS-232 levels with straight wiring. If using the rear J3 Accessory connector the RX and TX audio lines are differential and must be wired using 600 or 1,000 ohm isolation transformers. Ready to go J3 cables complete with RS-232 DTR line opto isolated PTT are available from Bill Holland, KC2CNB, (http://hollandelectronics.net/ or 1-609-693-7281) at a reasonable cost. Just tell him it's for MARS-ALE and if you want a DB9 or DB25 on the PC side and the cable length you require between the PC and radio. **NOTE:** CAT PTT can be used when interface via either the MIC port or rear J3 Accessory port. **NOTE:** The DATA filter of 3300 only works if programmed into a memory channel. **NOTE:** The MICOM-2BF, MICOM-2MF and MICOM-H Amateur Radio band version and perhaps others require the FLN2423 RS-232 option installed for computer control via J3, however the MIC port TXD, RXD, GND lines can be used for CAT control without the FLN2423.
PRC1099A	**CAT PTT**	Use for DATRON PRC1099A.
SIENNA	**CAT PTT** 9600, 8N1	SIENNA directly supports RS232 RTS line for PTT if enabled.
SIENNA_DV1	**CAT D/V** 9600, 8N1	Supports SIENNA with External PC/sound device for digital comms using LINE input. The radio is switched to LINE input for TX and to Mic input on RX for Voice comms using extended Atx; commands.

SIENNA_DV2	**CAT D/V** 9600, 8N1	Supports SIENNA with for Internal to Sienna PC digital comms. The radio is switched to DIGUSB mode for TX and to USB mode for input on RX for Voice comms using MDx; commands.
TK90	**CAT PTT** **9600, 8N1**	Supports TK90 Mic Port and USB only. **NOTE:** Kenwood TK-90 HF radio with the KCT-31 interface cable option for PC control installed per the documentation found in the TK90 Modification Information (MOD) publication version 2.0 date March 2007 or later. In the setup software under COM port settings for the KCT-31 select "PC Command" for the operating mode rather than GPS. **NOTE:** If an external ATU is connected to the TK90 for use then CAT PTT can not be used.
TK90J2B	**CAT DATA** **CAT PTT** **9600, 8N1**	Supports TK90 J2B data port by placing the radio into DATA mode at program start or this selection. Uses the proper CAT PTT ON and OFF commands for the DATA port if CAT PTT is selected vs. Pins 6 (DPTT) and 8 (GND) of the KCT-39 cable for hardware PTT. Upon normal shutdown the radio is placed into USB.
TK90J2B_DV	**CAT D/V** **9600, 8N1**	Supports TK90 data port for PTT where the radio is switched into J2B DATA mode for TX and back to USB on RX for any use of Voice communications. Uses the proper CAT PTT ON and OFF commands for the DATA port if CAT PTT is selected vs. Pins 6 (DPTT) and 8 (GND) of the KCT-39 cable for hardware PTT.

TT538	**CAT PTT** **57600, 8N1**	Requires the “Enhanced PC Control" firmware v1.32 update or later. The radio is being controlled in Jupiter mode, thus full manual control is available.
TT538_DV	**CAT PTT** **57600, 8N1**	Sent test build to AAM4SC. LINE selected for DATA TX and back to MIC on RX, has potential of working.
TT563	**CAT PTT** **CPP – 19200, 8N1**	Omni VI PTT is supported via Ten Tec extended command. Radio Address is factory 0xE0h
TT564	**CAT PTT** **CPP – 19200, 8N1**	Omni VI Plus. PTT is supported via Ten Tec extended command. Radio Address is factory 0x04h
TT586	**CAT PTT**	Paragon II. PTT is supported via Ten Tec extended command. Radio Address is factory 0x2Ch
TT588	**CAT PTT** **57600 8N1**	For use for OMNI VII TT588 and TT588AT in REMOTE MODE, a new protocol that places the TT588 series radio into a hands off operation by the user. OMNI VII REMOTE MODE as documented in Model 588 Programmers Reference Guide Rev 1.0. To enter REMOTE MODE hold down digit 2 on the band stack keyboard until the firmware version string and REMOTE appears on the display.
TT588_DV	**CAT D/V** **57600 8N1**	Line Port selected before TX and MIC on RX
TT599	**CAT PTT** **57600 8N1**	Also use for TT599AT and TT539.
XK2100	**CAT PTT** **2400, 7E1**	Rohde & Schwarz XK2000 family of transceivers, XK2100, XK2500 and XK2900.

		NOTE: Requires null modem cabling where pins 1 and 9 are not used.

WHAT TO DO WHEN YOUR RADIO TYPE IS NOT LISTED?

If your CAT radio is not listed by its model number under the **RADIO TYPE** column in the above chart, check to see if it's listed in the **COMMENTS** column as being in the same family as the one listed. For example, under FT890 there are a number of Yaseu models as well as OEM models under other brand names that are all supported by the FT890 selection. Many make/model Amateur grade radios for basic PTT will work using Kenwood commands. If you do not find your make/model radio anywhere, then send the required radio remote information in .pdf format for review as to the possibility of inclusion in a future build. Also review the prospect of using DMT-RADIO as detailed in Appendix M of this guide.