Kenwood TM-D700A Pages by Jim Gill NØRMO
Commands for Serial Port Control

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Change TM-D700A's TNC Mode Remotely via the Serial Port

Thanks for visiting my D700a page. This page is still going strong after all these years, getting close to 300 visitors a month from all over the world. I haven't had time to work on this data much over the years, with family and job obligations, but this information still remains current. If you have any additional information or corrections for this page, please email them to me.

Thanks,
Jim N0RMO

Dec 6 2004

The following information was submitted by Steven S. Dick <ssd@nevets.oau.org>:

I have discovered some additional serial commands missing from your page at http://jgav.com/ham/tmd700a.htm

1-7-3 Repeater
REP 1 locked band repeat
REP 2 cross band repeat
1-A-3 Remote control
RC 1 remote control on

These do not require a power cycle to change, but may require other things to be set first, and enabling either repeater or remote control disables almost everything else (except disabling them).

menu 1-3-1 programmable VFO (pg 64) (only available in VFO mode)
default values on my radio:
PV 1,00118,00135
PV 2,00136,00199
PV 3,00136,00174
PV 4,00200,00299
PV 5,00300,00399
PV 6,00300,00399
PV 7,00400,00523
PV 8,00400,00469
PV 9,00800,01299

Non menu items (I have more, but here's a few):
AG B,XX set volume (B=0,1 XX=00-3F) (canceled on knob change, not saved)
SQ B,XX set squelch (XX=00-1F) (not sure this is effective)

[note from Jim:] The work I originally did way back in 2000 only focused on the commands to control settings on the radio via a computer, that would normally be done on the front panel or microphone buttons. I never did take the time to experiment with or document the commands to enter frequencies, channel memory contents, etc. That information should be easily located with a Google Search. 73 N0RMO

Oct 27 2003

This content was finally put back online thanks to the generosity of the folks on the TMD700A Group at Yahoo. I had lost this information long ago due to a hard drive crash, and I discovered that someone had archived it at the Group. Thanks to Ken N5EQT for alerting me to it!

So here is the data, back in its original glory!

Thanks
Jim N0RMO

Feb 3 2000

The following was discovered by Bob Bruninga about the TMD700A. This will allow his software (and those typing manually) to command the TNC in the radio to switch between any and all modes without touching the radio! Here it is, I will be "cleaning it up" and moving it to a separate page soon, just wanted to share the good news.

I have to thank BOB B for finding the Missing Link - The Golden Nugget.... how to change to remote control mode when in the TNC PACKET mode!!! This is the key to making that fabulous all-in-one satellite ground station with total remote control ability.

Your serial port on your computer must be 9600,n,8,1. First, enter AI 1 to get the radio to be in "Command Echo" mode when in radio remote control mode. That way you can see the LIST data and so forth coming back to you while you are in APRS mode. This would be handy for an "ALL IN ONE" software program that did memory control, freq change, packet sending and monitoring, APRS sending and monitoring, etc. "The Works".

Update 4 Feb 2000: Some additional experimentation has clarified the control abilities for the radio - I am now defining four seperate "modes" that the serial port/TNC can be in: **OFF**, **Radio Control** (hereinafter referred to as **RC**), **APRS**, and **PACKET**. Definitions:

OFF: The TNC is not on, and the radio will not send/receive data over the air. Note that in this mode the radio will still accept control commands over the serial port.
RC: The radio shows on the display TNC PKT (Packet) mode, but the TNC is not able to actually Tx or Rx data. This is a quick, temporary mode used to change band or frequency, etc. You would normally then jump right back into Packet mode to continue receiving data.
APRS: The radio shows on the display that it is in TNC APRS mode. The radio can Tx/Rx APRS formatted data on its own without any outside software, like you would

APRS: The radio shows on the display that it is in TNC APRS mode. This radio can TX/RX APRS formatted data on its own without any outside software, like you would normally do as you drive around using the radio's internal APRS software. Note that in this mode the radio will still accept control commands over the serial port to change band, freq., etc.

PACKET: The radio shows on the display TNC PKT (Packet), and the TNC is at the "cmd:" prompt like you are used to with most TNCs. You can Tx/Rx AX.25 data with the data coming out of the serial port - the internal APRS software is not active.

Enter **AI 1** (Alpha India space One) while in OFF, RC, or APRS mode to turn on the "monitoring" feature. This will "echo" or "return" the control commands for what the radio is doing at the time. Enter **AI 0** (Alpha India space Zero) to turn off this "echo", but the radio will still accept commands while in this state. However it might be easier to enter your commands while in AI 1 mode so you can at least get responses from the radio when you enter your commands.

*****Update 5 Feb 2000:** Another problem I discovered, which should have been obvious, is that to switch from TNC PKT (Packet mode) to any other mode, you must remember to drop to cmd: (command mode) on the TNC if you are in converse mode. It's easy to forget that this is still a TNC, and if you enter a command while in packet mode, you might end up having it go out over the air, since your TNC may likely be in CONVERSE mode. So, remember to send a CTRL-C if necessary! So much to remember and check... but I will share everything I find if the rest of you do the same!

The following commands should be sent in UPPERCASE:

TNC/Serial Port is in THIS MODE	TO GO TO THIS MODE	SEND THIS IN UPPERCASE	Is there a delay for the TNC to re-initialize
OFF	APRS	TNC 1	YES
OFF	PACKET	TNC 2 then TC 0	YES
OFF	RC	(not necessary) *	
APRS	OFF	TNC 0	
APRS	RC	(not necessary) *	
APRS	PACKET	TNC 2 then TC 0	YES
RC	OFF	TNC 0	
RC	APRS	TNC 1	YES
RC	PACKET	TC 0	NO
PACKET *	OFF	TC 1 then TNC 0	
PACKET *	RC	TC 1	NO
PACKET *	APRS	TC 1 then TNC 1	YES

* Don't forget to send a Ctrl-C (alt-3 on keypad, hex $03, etc) to get out of converse mode on the TNC if necessary!

* You can enter any Radio Control (RC) commands while in the OFF or APRS modes.

Once in PACKET mode at any time, you may need to enter HB 1200 or HB 9600 to set the proper packet speed after switching modes. To switch speed while in APRS mode, use PKSA 0 for 1200, PKSA 1 for 9600.

I tried to make the above chart as clear as possible, email me if you want to correct something.

Thanks to Bob B as always for his research and assistance.

For problems or questions regarding this web contact d700@jgav.com .
Last updated: December 20, 2004.

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APRS Menu	Use this:	To do this:
My Callsign	MYC	Checks MYCall for the TNC
	MYC N0RMO-8	Set MYCall to xxxxx
GPS Unit	GU 0	NOT USED
	GU 1	NMEA
	GU 2	NMEA96
Waypoint	WAY 0	OFF
	WAY 1	6 DIGITS NMEA
	WAY 2	7 DIGITS NMEA
	WAY 3	8 DIGITS NMEA
	WAY 4	9 DIGITS NMEA
	WAY 5	6 DIGITS MAGELLAN
	WAY 6	DGPS
My Position	MP 1,data	MP 1,41213570095593351
	MPNA 1,name	MPNA 1,Home

		MP 1,data sets My Position #1 to 41 21.35N 95 59.33W, and you must use MPNA x,name to set the desired name for that position memory. Please substitute your own position as the weight of all those icons over my home will no doubt collapse my walls. It appears that the 0 or 1 in the 8th and 17th digit indicate N S E or W (I think you get the idea).
Position Ambiguity	PAMB 0	OFF
	PAMB 1	1 DIGIT
	PAMB 2	2 DIGITS
	PAMB 3	3 DIGITS
	PAMB 4	4 DIGITS
Position Comment	POSC 00	Off Duty
	POSC 01	Enroute
	POSC 02	In Service
	POSC 03	Returning
	POSC 04	Committed
	POSC 05	Special
	POSC 06	PRIORITY
	POSC 07	CUSTOM 0
	POSC 08	CUSTOM 1
	POSC 09	CUSTOM 2
	POSC 10	CUSTOM 3
	POSC 11	CUSTOM 4
	POSC 12	CUSTOM 5
	POSC 13	CUSTOM 6
	POSC 14	EMERGENCY !
Position Limit From 0 to 2500 Miles, in 10 Mile steps only.	ARL 0000	Off
	ARL 0010	10 Miles
	ARL 0020	20 Miles
	ARL 0030	30 Miles etc...
	ARL 2500	2500 Miles
		From 0 to 2500 Miles, in 10 Mile steps only.
Station Icon	ICO 0,0	"W" Kenwood Logo Icon
	ICO 0,1	House
	ICO 0,2	Tent
	ICO 0,3	Sailboat
	ICO 0,4	SSTV
	ICO 0,5	Airplane
	ICO 0,6	Boat
	ICO 0,7	Car
	ICO 0,8	Motorcycle
	ICO 0,9	Car????
	ICO 0,A	Bus???
	ICO 0,B	Pickup
	ICO 0,C	Van
	ICO 0,D	18-Wheeler
	ICO 0,E	DIGI Star
	ICO 0,xx	Others
	example ICO 0,\L	Where xx= \x or /x depending on the table and symbol you want. See APRS documentation or the radio user's manual.
Status Text	STAT 1,text	STAT 1,This is my status text n0rmo@qsl.net 28 character maximum. Use STAT X with X being the number of the status (1 to 5) you want to program.
	UMSG 1 or UMSG 2 etc.	Use UMSG X where X is the status number (1 to 5) you want to USE or "make active".
Status TX Rate	STXR 0	OFF - do not send a status text
	STXR 1	1/1 - Send a status text every posit.
	STXR 2 etc.	1/2 - Send a status text every 2nd posit. etc.
	STXR X	1/X - Where X is from 1 to 8
Packet Path	PP x,x,x etc.	PP RELAY,WIDE,WIDE etc PP sets the path; substitute the text of the path you want to set.
Packet TX	DTX 0	Manual - Sends beacon manually only

	DTX 1	PTT - Sends beacon after PTT only after INTERVAL expires
	DTX 2	AUTO - Send beacon every INTERVAL
TX INTERVAL	TXI 0	0.2 Minutes
	TXI 1	0.5 Minutes
	TXI 2	1 Minute
	TXI 3	2 Minutes
	TXI 4	3 Minutes
	TXI 5	5 Minutes
	TXI 6	10 Minutes
	TXI 7	20 Minutes
	TXI 8	30 Minutes
		These are the only settings available, just as in the TH-D7A.
Unprotocol	UPR APK101	This is the default setting. Substitute your desired Unprotocol for APK101 if necessary. Remember that APRS software requires AP as the first two characters to properly decode it as APRS traffic (I think - Authors, correct me on this one if wrong).
Beep	BEPT 0	OFF
	BEPT 1	MINE
	BEPT 2	ALL NEW
	BEPT 3	ALL
Mile/Kilometer	KILO 0	MILE Unsure whether MILE is **Statute** or **Nautical** Mile. Guess I need to **RTFM**.
	KILO 1	KM
Temperature	TEMP 0	Degrees Farenheit
	TEMP 1	Degrees Celsius
		Sorry, no Kelvin for you Martians traveling the Universe.
Data Band	DTBA 0	A only
	DTBA 1	B only
	DTBA 2	A: TX B:RX
	DTBA 3	A: RX B:TX
		See also RADIO Menu TNC Submenu. Don't know why there are two separate commands for the same function.
Packet Speed	PKSA 0	1200 bps
	PKSA 1	9600 bps
Digipeater	DIG 0	OFF
	DIG 1	ON
UIDIGI	UDIG X	UDIG X where X is the list of callsigns you want to DIGI by. Example: UDIG EVENT,WIDE Will digi packets with EVENT or WIDE in the path. Use this smartly... see TAPR APRSSIG or manual for further info.
Auto Msg Reply	AMR 0	OFF
	AMR 1	ON
		In APRS mode, if you get a message addressed to MYC, and this command is ON, your radio will respond with the ARLM (see below).
Reply Msg	ARLM TEXT	ARLM I'm driving - will respond later You could possibly also use AA: to conform to the WinAPRS method of autoreply, to make it clear that this is in fact an automatic reply, not manually typed. 64 characters maximum. Example: ARLM AA:I'm driving - will respond when parked 73 de Jim
BLN Group	ABLG TEXT	Substitute TEXT for desired strings... see radio manual for more information.
MSG Group	AMGG TEXT	Substitute TEXT for desired strings... see radio manual for more information. Also can use AMGG * to enable ALL messages in the message list, whether they are to you or not. Handy for "reading the mail" when traveling. Thank you Bob B. for this suggestion.
RADIO Menu DISPLAY submenu	**Use this:**	**To do this:**
Power-On MSG	MES TEXT	Substitute TEXT for desired string... see radio manual for more information. 8 characters maximum.
Contrast	CNT 01	Level 1
	CNT 02	Level 2
	CNT 03	Level 3 etc...

	CNT 16	Level 16
		Between 1 and 16; 8 is the default. Somewhere between 7 and 10 is probably readable for you. See manual or your radio.
Reverse Mode	NP 0	POSITIVE
	NP 1	NEGATIVE
		Maybe NEGATIVE is easier to read at night? YMMV. Literally, I suppose.
Auto Dimmer	AD 0	OFF
	AD 1	ON
Key Func (Key Function)	FUNC 1	FUNC 1 is default, FUNC 3 sets the APRS buttons as the "front" buttons in the soft menu on the front of the radio. I leave mine on FUNC 3 for convenience. Your choice. See the radio and your manual.
	FUNC 2	
	FUNC 3	
RADIO Menu AUDIO submenu	**Use this:**	**To do this:**
Beep Volume	BVOL 0	OFF
	BVOL 1 to	LEVEL 1 ...
	BVOL 7	LEVEL 7
Key Beep	BEP 0	OFF
	BEP 1	ON
Speaker	SSEL 1	MODE1
	SSEL 2	MODE2
		Combines or seperates the audio from each band into the same or seperate speakers. See manual.
RADIO Menu TX/RX submenu	**Use this:**	**To do this:**
1-3-1		The first option is not available in the radio menu... don't know why.
S-Meter Squelch	SSQ 0,0	OFF - left band
	SSQ 0,1	ON - left band
	SSQ 1,0	OFF - right band
	SSQ 1,1	ON - right band
Squelch Hang Time	SHT 0	OFF
	SHT 1	125 ms
	SHT 2	250 ms
	SHT 3	500 ms
FM/AM Mode	MD 0	FM
	MD 1	AM
		This option only available for certain frequency ranges... and I think only on the left side band. Correct me if I wrong.
VHF AIP (Advanced Intercept Point)	AIP 0	OFF
	AIP 1	ON
RADIO Menu MEMORY submenu	**Use this:**	**To do this:**
Auto PM Store	PMM 0	ON
	PMM 1	OFF
Channel Display	CH 0	OFF
	CH 1	ON
		Changing this option will cause the radio to spit out a whole bunch of channel information, which causes the radio's display to show the type of information you have selected. More later on exactly what the radio is spitting out. BUT, if you turn Channel Display ON, you won't be able to see the frequencies - only the channel **number**.
Lockout	MCL 0,0	OFF - for current channel on left band
	MCL 0,1	ON - for current channel on left band
	MCL 1,0	OFF - for current channel on right band
	MCL 1,1	ON - for current channel on right band
		NOTE: affects the currently selected memory channel on the currently selected band. If you are intending to remotely change this option for a specific memory channel, you MUST change to the specific band and channel remotely before you issue the MCL command. See **HERE**** for more information. (**section to be developed soon)
Memory Name	MNA X,XXX,TEXT	MNA 0,001,APRS For example, programs channel 001 to the Memory Name Text **APRS**. I don't think you have to previously select the proper band and channel before you issue this command... using the proper 3 digit channel number programs the correct memory. In the absense so far of specific software to program the D700, this command is a MAJOR help when going through and setting your memory names. It took me a long time to do it through the keypad until I

		found this. **Can you say Major Timesaver?** I knew you could.
RADIO Menu DTMF submenu	**Use this:**	**To do this:**
Store	DMN 00,X	Sets the DTMF Name for specific DMTF memory location 00-09.
	DM 00,X	Sets DMTF string for the specific memory location of 00 through 09. See manual.
TX Speed	TSP 0	SLOW
	TSP 1	FAST
Pause	PT 0	100 ms
	PT 1	250 ms
	PT 2	500 ms
	PT 3	750 ms
	PT 4	1000 ms
	PT 5	1500 ms
	PT 6	2000 ms
RADIO Menu TNC submenu	**Use this:**	**To do this:**
Data Band	DTB 0	A only
	DTB 1	B only
	DTB 2	A: TX B:RX
	DTB 3	A: RX B:TX
		See also APRS Menu. Don't know why there are two separate commands for the same function, unless if separate for APRS mode and TNC mode.
DCD Sense	DS 0	DATA (RX) BAND
	DS 1	A AND B BANDS
Time	TIME XXXX	TIME 0130 sets 1:30am TIME 2130 sets 9:30pm etc etc.
Date	DATE XXXXXX	DATE 000109 sets January 9 2000. etc etc.
Time Zone	TZ 00	UTC minus 12 hours
	TZ 01	UTC minus 11 hours 30 minutes
	TZ 02	UTC minus 11 hours
	TZ 03	UTC minus 10 hours 30 minutes etc. etc. every 30 minutes
	TZ 24	UTC
	TZ 25	UTC plus 30 minutes
	TZ 26	UTC plus 1 hour
	TZ 27	UTC plus 1 hour 30 minutes etc. etc. up to
	TZ 48	UTC plus 12 hours
RADIO Menu REPEATER submenu	**Use this:**	**To do this:**
Offset Frequency	OS 005000000	Offset Frequency 5.00 MHz
	OS 000600000	Offset Frequency 0.60 MHz
		Indicated in Hz, with zeros padded before the desired number, for a total of 9 digits. **NOTE:** affects the currently selected BAND and CHANNEL. See elsewhere in this web for how to change to a different band or channel remotely (coming soon).
Auto Offset	ARO 0	OFF
	ARO 1	ON
		Not band-specific.
1750 Key	CKEY 0	CALL
	CKEY 1	1750
		See radio manual.
TX Hold	TH 0	OFF
	TH 1	ON
		Possibly applies only for crossband repeater. See manual.
Repeater Hold	REPH 0	OFF
	REPH 1	ON
		Possibly applies only for crossband repeater. See manual.
Repeater	REP 0	OFF - turns cross band repeater off.
	???	LOCKED-BAND
	???	CROSS-BAND
		Haven't messed with these yet... apparently you must cycle radio power to make the change... and since I am working diligently on finding all the codes first that will have to wait.
RADIO Menu MIC submenu	**Use this:**	**To do this:**

PF1(PF)	PF 1,XX	PF1 button set to XX, see table below
PF2(MR)	PF 2,XX	PF2 button set to XX, see table below
PF3(VFO)	PF 3,XX	PF3 button set to XX, see table below
PF4(CALL)	PF 4,XX	PF4 button set to XX, see table below
For **X** use the button number 1 through 4 from left to right for the Function button you want to program.	PF X,01	A/B
	PF X,02	MONITOR
	PF X,03	ENTER
	PF X,04	VOICE
	PF X,05	1750
	PF X,06	PM
	PF X,07	MENU
	PF X,08	VFO
	PF X,09	MR
	PF X,10	CALL
	PF X,11	MHz
	PF X,12	TONE
	PF X,13	REV
	PF X,14	LOW
	PF X,15	MUTE
	PF X,16	CTRL
	PF X,17	PM. IN
	PF X,18	A.B.C
	PF X,19	M>V
	PF X,20	M. IN
	PF X,21	C. IN
	PF X,22	LOCK
	PF X,23	T. SEL
	PF X,24	SHIFT
	PF X,25	STEP
	PF X,26	VISUAL
	PF X,27	DIM
	PF X,28	SUB-BAND SEL
	PF X,29	DX
	PF X,30	TNC
	PF X,31	LIST
	PF X,32	P. MON
	PF X,33	BCON
	PF X,34	MSG
	PF X,35	POS
Mic Control	MCNT 0 MCNT 1	OFF ON
DTMF Monitor	DTM 0 DTM 1	OFF ON
RADIO Menu **AUX submenu**	**Use this:**	**To do this:**
Scan Resume	SCR 0	TIME
	SCR 1	CARRIER
	SCR 2	SEEK
Visual Scan	VSM 1	MODE 1: 31ch
	VSM 2	MODE 2: 61ch
	VSM 3	MODE 3: 91ch
	VSM 4	MODE 4: 181ch
APO (Auto Power Off)	APO 0	OFF
	APO 1,0	ON
TOT (Time Out Timer)	TOT 0	3 Minutes
	TOT 1	5 Minutes
	TOT 2	10 Minutes
Com Port	CP 0	9600 bps **(default)**
	CP 1	19200 bps
	CP 2	38400 bps
	CP 3	57600 bps
		The speed at which the radio talks to a computer on its' serial port.
Data Speed	DATP 0	1200 bps

	DATP 1	9600 bps
		See Also: APRS Menu- Packet Speed. Don't know why there are two commands for the same thing, unless APRS Menu- Packet Speed is for the APRS mode only, and Data Speed is for TNC mode only. Will have to research.
RESET		**I haven't gotten in to this one... I suggest you don't either, unless you want to spend all night reprogramming everything.**
RADIO Menu REMOTE CON submenu	**Use this:**	**To do this:**
Code	RCC XXX	Where XXX is the three digit **number** you want to set your remote control password code to.
Answer Back	RCA 0	OFF
	RCA 1	ON
Control	RC 0	OFF I haven't gotten further into this one. More later when I have to time play with it. See radio manual.
SSTV Menu		**Haven't worked on yet. More later. See radio manual.**
SKY COMMAND Menu		**Haven't worked on yet. More later. See radio manual.**

For problems or questions regarding this web contact d700@jgav.com .
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