

## THENET X1-J4 QUICK REFERENCE GUIDE

### SWITCH COMMANDS

```
ACL    [{CALLSIGN + VALUE} | {CALLSIGN - VALUE} |
        { * VALUE } | { & value } ]
ADC
ADC1   [ * | Units_for_Voltmeter_channel_1 ] (see note 6)
ADC2   [ * | Units_for_voltmeter_channel_2 ] (see note 6)
ADC3   [ * | Units_for_Voltmeter_channel_3 ] (see note 6)
ADC4   [ * | Units_for_voltmeter_channel_4 ] (see note 6)
ALIAS  [ * | NEW_ALIAS ]
ARP     [ipaddr [{ - ptcl } | [+ [P] ptcl callsign [ DG | VC ]]]
ARPTIMER [ * | enable_flag [ * | timer_rate ] ]
AUDIT   [ NUMBER_FROM_0_TO_255 ]
BBS     [ CALLSIGN | * | ? ]
BBSALIAS [ * | NEW_ALIAS ]
BRATE   [ * | radio_brat [ * | rs232_baud_rate ] ] ( PK96 only )
BTEXT   [ * | BEACON_MESSAGE_TEXT ] (see note 6)
BYE
CALIBRATE [PERIOD_VALUE_FROM_1_TO_60 [TOGGLE_VALUE_1_TO_PERIOD ] ]
CLOSEDOWN A
CONNECT [ CALLSIGN [ [V] DIGILIST ... ]
CQ      [ MESSAGE_FOR_CQ_PACKET ]
CTEXT   [ * | CONNECT_MESSAGE_TEXT ] (see note 6)
DXCLUSTER [ CALLSIGN | * | ? ]
DXCALIAS [ * | NEW_ALIAS ]
HELP
HOST    [ CALLSIGN | * | ? ]
HOSTALIAS [ * | NEW_ALIAS ]
INFO    [ SYSOP_SET_MESSAGE ] (see note 6)
IPADDRESS [ NEW_IP_ADDRESS ]
IPBROADCAST [ NEW_IP_ADDRESS ]
IPROUTE [ipaddr [/bits ] [ - | { + port [ipgateway [metric ]]]]
IPSTATS [ { NEWPARAM | * } { NEWPARAM | * } ..... ] (see note 5)
L3MHEARD [ NUMBER_FROM_1_TO_100 ]
LINKS
MANAGER
METER   [ { new_value | * } ... ] (see note 5)
MHEARD  [ NUMBER_FROM_1_TO_100 ]
MODE    [ { NEWPARAM | * } { NEWPARAM | * } ..... ] (see note 5)
MTU     [ list_of_parameters ] (see note 5)
NODES   [ * [*] | NODECALL {+|-} IDENT QUAL COUNT PORT NEIGHBOUR
        [DIGIS]]
PARMS   [ { NEWPARAM | * } { NEWPARAM | * } ..... ] (see note 5)
QUIT
RESET   [ ANY_CHARACTER ]
ROUTES  [ PORT NODECALL [ DIGILIST ... ] { + | - } PATHQUALITY ]
STATS
SYSOP
TALK    [ STRING ]
UI      DEST STRING_OF_TEXT_TO_BE_SENT_IN_UI_FRAME
USERS
```

Note 1 Any command may be enabled or disabled by the use of the '+' or '-' modifier, as shown below :

```
ANY_COMMAND [ + | - | THAT_COMMANDS_PARAMETERS ]
```

Commands may be caused to be displayed or not in the prompt screen if the '-' or '+' is

followed by 'D' ( or 'd' )

Note 2 IP addresses are of the form nnn.nnn.nnn.nnn  
where nnn is a number 0..255

Note 3 IProute port parameter is 0 for radio or 1 for rs232

Note 4 ARP ptcl parameter is AX.25 or Net/Rom (may be abbreviated)

Note 5 The commands will accept the 'old' syntax of '\* \* \* value...' or the new offset & value  
syntax of '/ parameter\_number value'

Note 6 Voltmeter channels 1,2,3,4 correspond to ADC channels 3,4,1,2 respectively. The ADC  
command reads them.

#### HOST 'ESCAPE' COMMANDS

<escape> C  
<escape> D  
<escape> P [ NEW\_PASSWORD ]

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#### UNDERSTANDING ACL VALUES

#### UNDERSTANDING AUDIT BITS

Bit	Function	Bit	Function
0	Bar all incoming L2 connects	0	Issue L1 stats every 10 mins
1	Bar outgoing L2 downlinks	1	Audit L2 connects & discs
2	Ignore nodes broadcasts	2	unused
3	Bar gatewaying at level 3	3	Audit L4 connects & discs
4	Bar incoming L4 connects	4	Audit L7 use of sysop cmd
5	Bar outgoing L4 connects	5	Audit all L7 switch commands
6	ignore SSID in searching	6	Issue CPU stats every 10mins
7	unused	7	unused

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#### PARMS PARAMETERS

Number	Min	Max	Function
1	1	400	Maximum number of destination nodes
2	0	255	Minimum quality for auto update
3	0	255	HDLC ( radio, port 0 ) default quality
4	0	255	RS232 ( crosslink, port 1 ) default quality
5	0	255	Initial value for obsolescence counter
6	1	255	Minimum obsolescence for node broadcast
7	0	65535	Auto update broadcast interval (seconds)
8	0	255	Level 3 ( network ) Time To Live Initialiser
9	5	600	Level 4 ( transport ) timeout (seconds)
10	1	127	Level 4 ( transport ) retries
11	1	60	Level 4 ( transport ) ack delay (seconds)
12	1	1000	Level 4 ( transport ) busy delay (seconds)
13	1	127	Level 4 ( transport ) window size (frames)
14	1	127	Level 4 ( transport ) congestion ctrl threshold
15	0	65535	Level 7 ( switch ) inactivity timeout (seconds)
16	0	255	Persistence for transmit delay
17	0	127	Persistence slottime delay (10's of msec)
18	1	15	Level 2 ( link ) T1 timeout, ie FRACK (seconds)
19	1	7	Level 2 ( link ) window size (packets)

20 0 127 Level 2 ( link ) retries  
21 0 6000 Level 2 ( link ) T2 timeout (10's of msec)  
22 0 65535 Level 2 ( link ) T3 timeout (10's of msec)  
23 0 1 Level 2 ( link ) digipeat enable flag  
24 0 1 Callsign validation flag  
25 0 2 Node beacon ctrl (0=off, 1=if active, 2=always)  
26 0 1 CQ broadcasts enable flag

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### MODE PARAMETERS

Number	Min	Max	Function
1	0	1	Hardware handshake host control mode flag
2	0	3600	CWID repeat period ( seconds )
3	4	10	CWID speed ( 10's msec's per dot )
4	0	3	Nodes broadcast channel enable flags where 0=none, 1=HDLC only, 2=RS232 only, 3=Both ports
5	0	3	Crosslink protocol selection 0=crosslink, 1=KISS, 2=KISS+selective copy, 3=KISS+allcopy
6	0	255	TX keyup delay ( 10's of milliseconds )
7	0	1	Full duplex enable flag
8	0	65535	RS232 ( port 1 ) node broadcast period ( secs )
9	0	3	Node broadcast algorithm control flags 0=off, 2=RS232 port, 1 & 3 not normally used
10	600	3600	Beacon interval ( seconds )
11	0	2	Connect redirection to BBS flag
12	0	255	Help messages flags, 8 bit TALK, case & TEXNET
13	0	3	Hash node broadcast disable (one bit per port)
14	0	1	Enable extra aliases monitoring if set
15	0	1	Enable auto reconnect to node after remote dis
16	0	3	Slime trail control. Each bit controls... Bit 0 if set hides slime trails in nodes list Bit 1 if set causes slime trails to be ignored
17	0	3	Digipeat control. Each bit controls ... Bit 0 set makes node to refuse digi'd L2 uplink Bit 1 set, node refuses to allow digi downlinks

### IPSTAT PARAMETERS

Number	Min	Max	Function ( Those marked '*' are not used )
1	0	3	ip L2 AX.25 Modes ( 1 bit per port, 1=DG )
2	0	1	ip Forwarding, 1=enable router, 0=disable
3	2	255	ip Default TTL
4	0	0	ip In Receives
5	0	0	ip In Header Errors
6 *	0	0	ip In Address Errors
7	0	0	ip Forwarded Datagrams
8	0	0	ip In Unknown Protocols
9 *	0	0	ip In Discards ( TTL exceeded )
10 *	0	0	ip In Delivers
11	0	0	ip Output Requests
12 *	0	0	ip Output Discards
13	0	0	ip Output No Routes
14 *	1	30	ip Reasm Timeout
15 *	0	0	ip Reasm Requireds
16 *	0	0	ip Reasm OKs
17 *	0	0	ip Reasm Fails
18	0	0	ip Frag OKs
19 *	0	0	ip Frag Fails
20	0	0	ip Frag Creates

### MTU PARAMETERS

Number Min Max Function

1	64	1024	IP Port 0 ( Radio Port ) Level 2 AX.25 MTU
2	64	1024	IP Port 1 ( RS232 Port ) Level 2 AX.25 MTU
3	64	236	IP Net/Rom port MTU
4	257	1025	Level 2 Max data bytes in a packet before error

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METER PARAMETERS  
Number Min Max Function

Number	Min	Max	Function
1	0	32767	The meter mode flags
2	0	255	The deviation meter scaling factor
3	0	255	The signal strength meter noise floor value
4	0	255	The S meter display format multiplier
5	0	255	The dBm meter display format multiplier
6	0	255	The dBm noise floor value
7	0	255	The voltmeter channel 1 multiplier
8	0	255	The voltmeter channel 2 multiplier
9	0	255	Voltmeter Channel 1 offset value
10	0	255	Voltmeter Channel 2 offset value
11	0	255	The voltmeter channel 3 multiplier
12	0	255	The voltmeter channel 4 multiplier
13	0	255	Voltmeter Channel 3 offset value
14	0	255	Voltmeter Channel 4 offset value

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THE METER MODE FLAGS ( METER parameter 1 )

BIT If set, then ....

0	The deviation meter is enabled
1	The signal strength meter is enabled
2	The signal strength is shown as S points rather than dBm
3	ADC channel 3 is enabled ( voltmeter channel 1 )
4	ADC channel 4 is enabled ( voltmeter channel 2 )
5	Voltmeter channel 1 divisor is 1000 rather than 100
6	Voltmeter channel 2 divisor is 1000 rather than 100
7	Voltmeter channel 1 display resolution is 0.1 not 1.0
8	Voltmeter channel 2 display resolution is 0.1 not 1.0
9	ADC channel 1 is enabled ( voltmeter channel 3 )
10	ADC channel 2 is enabled ( voltmeter channel 4 )
11	Voltmeter channel 3 divisor is 1000 rather than 100
12	Voltmeter channel 4 divisor is 1000 rather than 100
13	Voltmeter channel 3 display resolution is 0.1 not 1.0
14	Voltmeter channel 4 display resolution is 0.1 not 1.0

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HELP MESSAGES FLAGS ( MODE Parameter 12 )

BIT FUNCTION

0	If set, the 'please wait, trying xxxx' operates
1	If set, all commands appear in help for sysop
2	If set, the 'goodbye' message is given
3	If set, a welcome message is enabled ( CTEXT )
4	If set, nodes are shown as 'alias:callsign'
5	If set, TALK data is passed as 8 bit data
6	If set, node aliases are deemed to be case sensitive
7	If set, enables the TexNet "*** LINKED to" interface

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ARPTIMER PARAMETERS  
Number Min Max Function

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1 0 1 0 disables ARP table mgmt, 1 enables  
2 15 1440 ARP entry expiry time in minutes