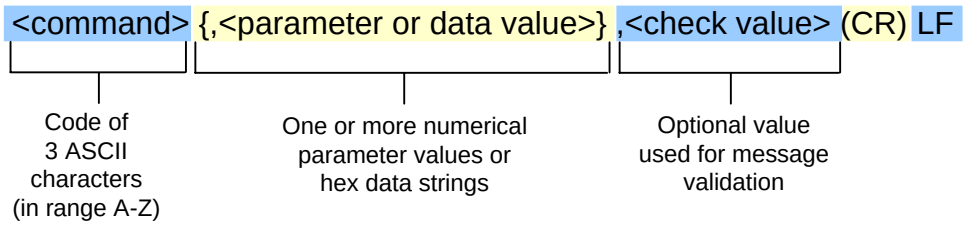
AT-Jenie Quick Command Reference

AT-Jenie provides an easy-to-use serial command interface for interacting with a wireless network based on the JenNet protocol. The general format of an AT-Jenie command is illustrated below (the format of a response is similar):



Refer to the tables overpage for information on individual commands/responses. For more detailed information, refer to the *AT-Jenie Reference Manual (JN-RM-2038)*.

Common Tasks

The following examples provide reminders of the command sequences for common tasks (the example commands do not include the optional check value):

Starting the Co-ordinator

The following command sequence starts a node as the Co-ordinator for a network with PAN ID 0xABBA and Network Application ID 0x06041974, on 2400-MHz channel 11 (0xB).

```
CFG,x07FFF800,10,8,2,0
INI,xABBA,xB,x06041974,0,1
STR,0
```

Starting Another Node

The following command sequence starts a node as an End Device in a network with Network Application ID 0x06041974 and with an auto-channel scan over all 2400-MHz channels.

```
CFG,x07FFF800,0,0,5,0
CFP,0,2,5000,200,0
INI,0,0,x06041974,0,0
STR,2
```

Binding Services

The following command sequence binds local service 3 to service 7 on the node with address 0xA450B445BC46FB45, then sends data (0x1234) to the remote service before finally unbinding the services.

```
BND,3,xA450B445BC46FB45,7
SDS,3,1234,2,0
UBN,3,xA450B445BC46FB45,7
```

Tunnelling Commands

The following command sequence creates a tunnel between local service 2 and tunnelling service 32 on the node with address 0xA450B445BC46FB45, tunnels commands to illuminate and then extinguish a board LED, and finally removes the tunnel.

```
TCN,2,xA450B445BC46FB45,32
TCM,"TOP"
TCM,"BLO,1"
TCM,"BLF,1"
TCM,"TCL"
```

Network Commands

Cmd	Parameters/Description	Response
BND	**local-service, remote-addr, remote-service** Create a binding between a local service and a service on a remote node.	OK ERR
CCF	**data-rate, number-sys, check-en, cmd-echo, coding** Configure command parser.	OK ERR
CCS	**store-restore** Store current command parser configuration as new default or restore default settings.	OK ERR
CFG	**auto-scan-chs, max-child, max-ed-child, max-fails, ed-activity-timeout** Configure certain network parameters on local node.	OK ERR
CFP	**ping-period, sleep-cycles, scan-sleep, poll-period, max-hops** Configure certain network parameters on local node.	OK ERR
GAS	Get the current setting of “permit joining”.	OKA ERR
GTV	**component** Get the version number of specified component.	OKV ERR
INI	**pan-id, radio-ch, nwk-app-id, restore-context, routing-en** Configure and initialise node.	OK ERR
KEY	**key, remote-addr** Set security key for encryption/ decryption of data sent from local node to remote node.	OK ERR
LVE	Leave network.	OK ERR
OAD	Invalidate Flash memory and reset node (reset occurs after response sent).	OK ERR
POL	Poll the parent for any pending data (End Device only).	OK -> PLC (-> DAT, DTS, TNE) ERR
RDP	**radio-power-level, mod-type** Set the radio power level for transmission, or enable/disable transmitter	OK ERR
REG	**services** Register services of local node	OK -> RSR ERR
RQS	**services** Request services from other nodes.	OK -> SRR ERR
RST	Reset local node (reset occurs after response sent).	OK ERR
SAS	**permit-join** Configure node’s ability to allow other nodes to join network through it (permit joining).	OK ERR
SCN	**save-delete-context** Save or delete context data in external non-volatile memory.	OK ERR
SDS	**local-service, payload-data, data-length, flags** Send data from local service to to bound remote service.	OK -> PKS OK -> PKF ERR
SLP	**timers-memory-state** Put node in sleep mode with or without timers running, and with or without on-chip memory held.	OK ERR
SND	**remote-addr, payload-data, data-length, flags** Send data from local node to specified remote node.	OK -> PKS OK -> PKF ERR
SSP	**sleep-period** Set duration of one sleep cycle.	OK ERR
STR	**node-type** Start node as specified type.	OK -> NTU ERR
TCL	Close tunnel opened with **TOP**. **TCL** must be tunnelled to and executed on remote node.	OK -> PKS OK -> PKF ERR BSY
TCM	**cmd-string** Tunnel AT-Jenie command string to remote node.	OK -> TNR ERR
TCN	**local-tnl-svce, remote-addr, remote-tnl-svce** Connect tunnel from local to remote service.	OK -> PKS OK -> PKF ERR BSY
TOP	Open tunnel set up using **TCN**. **TOP** must be tunnelled to and executed on remote node.	OK -> PKS OK -> PKF ERR BSY
UBN	**local-service, remote-addr, remote-service** Unbinds bound services.	OK ERR

Peripheral Commands

Cmd	Parameters/Description	Response
PAC	**reg-en, int-en, samp-interval, clock-freq, ref-volt** Configure parameters shared by all analogue peripherals.	OK ERR
PAD	**analog-periph** Disable analogue peripheral.	OK ERR
PAE	**analog-periph, volt-range, adc-mode, adc-source, dac-op-hold, dac-value** Configure/enable analogue peripheral.	OK ERR
PAO	**dac, dac-value** Submit next value to be converted by specified DAC.	OK ERR
PAR	Read latest output from ADC.	OKP ERR
PAS	Start sampling on ADC input.	OK ERR
PCD	**comparator** Disable specified comparator.	OK ERR
PCE	**comparator, hyst-volt, ref-signal** Configure/enable comparator.	OK ERR
PCI	**comparator, int-en, edge** Configure/enable interrupts for comparator.	OK ERR
PCS	**comparator** Request status of comparator.	OKP ERR
PCW	**comparator** Request status of wake-up interrupt of comparator.	OKP ERR
PDD	**inputs, outputs** Configure directions of DIOs.	OK ERR
PDE	**enable, disable, rising, falling** Configure/enable wake signals on DIOs.	OK ERR
PDO	**on, off** Set states of output DIOs.	OK ERR
PDP	**on, off** Set pull-ups of DIOs.	OK ERR
PDR	Request states of input DIOs.	OKP ERR
PDS	Request wake status of DIOs.	OKP ERR
PTC	**timer** Start timer in ‘capture mode’.	OK ERR
PTD	**timer** Disable timer.	OK ERR
PTE	**timer, clock-divisor, int-config, ext-output, dio-en, clock-config** Configure/enable timer.	OK ERR
PTF	**timer** Request interrupt status of timer.	OKP ERR
PTG	**timer, mode, time-to-rise, time-to-fall** Configure and start timer.	OK ERR
PTR	**timer** Request ‘capture mode’ results from timer.	OKP ERR
PTX	**timer** Stop timer.	OK ERR
PWC	Request calibration of 32-kHz internal clock for wake timers.	OKP ERR
PWE	**w-timer, int-en** Configure/enable wake timer.	OK ERR
PWF	Request which wake timers have fired (and clear them).	OKP ERR
PWG	**w-timer, count** Start wake timer with value.	OK ERR
PWS	Request which wake timers are active.	OKP ERR
PWX	**w-timer** Stop wake timer.	OK ERR

Board Commands

Cmd	Parameters/Description	Response
BGF	Request states of switches on controller board.	OKP
BGH	Request humidity reading.	OKP
BGL	Request light level reading.	OKP
BGR	Request states of switches on sensor board.	OKP
BGT	Request temperature reading.	OKP
BGV	Request board battery voltage.	OKP
BLF	**led** Extinguish specified LED.	OK
BLO	**led** Illuminate specified LED.	OK
BTX	**text-string, row, column** Display text string in specified position on LCD screen of controller board.	OK

Immediate Responses

Rsp	Data/Description
BSY	An opened tunnel is in use.
ERR	Error condition.
OK	Success.
OKA	**permit-join** OK with ‘permit joining’ state.
OKP	**periph-value** OK with peripheral value.
OKO	**output-values** OK with multiple output values.
OKV	**version-no** OK with version number.

Deferred Responses and Events

Rsp	Data/Description
ACK	An end-to-end acknowledgement has been received following a data send using **SND**.
CHJ	**node-addr** A node has joined this Co-ordinator or Router.
CHL	**child-addr** A child has left this Co-ordinator or Router.
CHR	**child-addr** A child has been rejected by this Co-ordinator or Router.
DAT	**src-addr, flags, data-length, payload-data** Data has been received from a remote node.
DTS	**src-addr, src-service, dest-service, flags, data-length, payload-data** Data has been received from a remote node, for a particular service on the local node.
NTU	**parent-addr, local-addr, depth-in-nwk, pan-id, radio-ch** Network has started or been joined.
PKF	Data packet not successfully sent.
PKS	Data packet successfully sent.
PLC	**poll-status** Polling of parent completed.
RSR	Register Service Response to **REG** command.
RST	A stack reset has occurred.
SAK	An end-to-end acknowledgement has been received following a data send using **SDS**.
SRR	**remote-addr, services** Service Request Response to **RQS** command.
TNR	**payload** A tunnelled command or response has been received from another node.

Hardware Events

Evt	Data/Description
PEV	**src-periph, event, analog-value** Event (usually interrupt) from peripheral.