

ClearSCADA Advanced Trio driver - Qx PIC list & QH status information

The "R" command "Read PIC list" should be used on Qx (Do not use the "G" Get command)

"R" Read Parameter.

This command implemented as of R4.8.0, is similar to the Get command but with a sequence

number as the first operand.

Command:- 12,34,56,00,00,00,"R",<seq>,<PIC1>,<PIC2>,...<PICn>,...

Response:- 00,00,00,12,34,56,"r",<seq>,<data1>,<data2>,...<datan>

Available Q PIC #	Parameter ID
3	parameterID=RADIO_TEMPERATURE,
6	parameterID=RADIO_RSSI,
9	parameterID=RADIO_FWD_POWER,
23	parameterID=BASE_RADIO_FWD_POWER,
12	parameterID=SUPPLY_VOLTS,
15	parameterID=FREQUENCY_ERROR_OFFSET,
18	parameterID=RADIO_REV_POWER,
26	parameterID=BASE_RADIO_REV_POWER,
47	parameterID=REAL_TIME_TICK,
48	parameterID=RADIO_TX_PACKETS,
49	parameterID=RADIO_TX_BYTES,
50	parameterID=RSSI_GOOD_TICK,
51	parameterID=CORRUPTED_PACKETS,
52	parameterID=RADIO_RX_PACKETS,
53	parameterID=RADIO_RX_BYTES,
54	parameterID=LOST_SYNC_COUNT,
55	parameterID=SIGNAL_LOST_COUNT,
98	p_shortUnsigned=&s_sessionCode,
123	funcName=&accessGPI, BASE
124	funcName=&accessGPO, BASE
125	funcName=&baseControl, BASE - HSC
150	funcName=&getHscSerialnumber,
162	parameterID=RADIO_PEAK_RSSI,
173	parameterID=RADIO_RETRANSMITTED_PACKET
174	parameterID=RADIO_DISCARDED_PACKETS,
Not used 180	unsignedValue=PIC180_VALUE, Min Programmer RevisionCode
See below 181	unsignedValue=PIC181_VALUE, Preferred Prog RevisionCode
198	p_byteUnsigned=&s_sysStat, Base Online - Bit2 high
223	parameterID=RADIO_RF_DATA_RATE, Last Tx speed.
227	p_longUnsigned=&s_RssiTimestamp,
228	p_longUnsigned=&s_TxPwrTimestamp,
229	funcName=HSC &getSwapCount,
231	funcName=HSC &accessForceTimer,
263	parameterID=LAN_1_RX_PACKETS,
264	parameterID=LAN_1_TX_PACKETS,
265	parameterID=LAN_1_RX_BYTES,
266	parameterID=LAN_1_TX_BYTES,
274	parameterID=LAN_2_RX_PACKETS,
275	parameterID=LAN_2_TX_PACKETS,
276	parameterID=LAN_2_RX_BYTES,
277	parameterID=LAN_2_TX_BYTES,
286	UNSIGNED, BYTE p_byteUnsigned=&s_RadioBand

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354	UNSIGNED, BYTE	unsignedValue=1
358	UNSIGNED, LONG	p_longUnsigned=&s_FirmwareVersion
359	UNSIGNED, WORD	p_shortUnsigned=&s_FirmwareBuild
400	UNSIGNED, LONG	funcName=&getBaseErrorFlags,
401	UNSIGNED, LONG	funcName=&getBasePairErrorFlags,
402	UNSIGNED, LONG	parameterID=LAN_3_RX_PACKETS,
403	UNSIGNED, LONG	parameterID=LAN_3_TX_PACKETS,
404	UNSIGNED, LONG	parameterID=LAN_3_RX_BYTES,
405	UNSIGNED, LONG	parameterID=LAN_3_TX_BYTES,
406	SIGNED, WORD	funcName=&getOffsetRssi,
407	SIGNED, BYTE	funcName=&vhf_io_read_write
408	UNSIGNED, BYTE	parameterID=COMPRESSOR_RATIO
409	UNSIGNED, LONG	parameterID=DECOMPRESSOR_ERROR_COUNT,
500	SIGNED, WORD	p_shortSigned=&s_rssi,
501	SIGNED, WORD	parameterID=DYNTXPWR_RSSI_AT_TARGET,
502	SIGNED, WORD	parameterID=DYNTXPWR_RSSI_ERR,
503	UNSIGNED, STRING	parameterID=DYNTXPWR_STATE,
504	UNSIGNED, LONG	parameterID=DYNTXPWR_ADDR,
505	SIGNED, WORD	parameterID=DYNTXPWR_ADJTXPR,
506	UNSIGNED, LONG	parameterID=QOS_1_TX_PACKETS,
507	UNSIGNED, LONG	parameterID=QOS_1_DROP_PACKETS,
508	UNSIGNED, LONG	parameterID=QOS_2_TX_PACKETS,
509	UNSIGNED, LONG	parameterID=QOS_2_DROP_PACKETS,
510	UNSIGNED, LONG	parameterID=QOS_3_TX_PACKETS,
511	UNSIGNED, LONG	parameterID=QOS_3_DROP_PACKETS,
512	UNSIGNED, LONG	parameterID=QOS_4_TX_PACKETS,
513	UNSIGNED, LONG	parameterID=QOS_4_DROP_PACKETS,
514	UNSIGNED, LONG	parameterID=QOS_5_TX_PACKETS,
515	UNSIGNED, LONG	parameterID=QOS_5_DROP_PACKETS,
516	UNSIGNED, LONG	parameterID=QOS_6_TX_PACKETS,
517	UNSIGNED, LONG	parameterID=QOS_6_DROP_PACKETS,
518	UNSIGNED, LONG	parameterID=QOS_7_TX_PACKETS,
519	UNSIGNED, LONG	parameterID=QOS_7_DROP_PACKETS,
520	UNSIGNED, LONG	parameterID=QOS_8_TX_PACKETS,
521	UNSIGNED, LONG	parameterID=QOS_8_DROP_PACKETS,
522	SIGNED, WORD	parameterID=RADIO_SNR
523	SIGNED, WORD	parameterID=RADIO_MED_NOISE_FLOOR
524	UNSIGNED, LONG	parameterID=FIREWALL_RADIO_EGRESS_DROPPED_PACKETS
525	UNSIGNED, LONG	parameterID=FIREWALL_RADIO_EGRESS_DROPPED_BYTES
526	UNSIGNED, LONG	parameterID=FIREWALL_ETH_EGRESS_DROPPED_PACKETS
527	UNSIGNED, LONG	parameterID=FIREWALL_ETH_EGRESS_DROPPED_BYTES
528	UNSIGNED, LONG	.parameterID=RADIO_QAM_EVM
529	SIGNED, BYTE	parameterID=RADIO_DESENSE
530	UNSIGNED, STRING	parameterID=DESENSE_STATE
531	SIGNED, LONG	parameterID=RADIO_MUTE_LEVEL
532	SIGNED, LONG	parameterID=FWD_PATHLOSS
533	SIGNED, LONG	parameterID=RADIO_SET_POWER
534	SIGNED, LONG	parameterID=MEAN_WAIT_TIME_TO_TRANSMIT
535	SIGNED, LONG	parameterID=RANDOM_ACCESS_CONTENTION
536	UNSIGNED, STRING	parameterID=TGCM_SYNC_STATE
537	UNSIGNED, LONG	parameterID=FIREWALL_RADIO_INGRESS_DROPPED_PACKETS

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538	UNSIGNED, LONG	parameterID=FIREWALL_RADIO_INGRESS_DROPPED_BYTES
539	UNSIGNED, LONG	parameterID=FIREWALL_ETH_INGRESS_DROPPED_PACKETS
540	UNSIGNED, LONG	parameterID=FIREWALL_ETH_INGRESS_DROPPED_BYTES
541	UNSIGNED, STRING	parameterID=AUTHORIZATION_STATE

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The Major Version number (1st digit in the X.Y.Z scheme) does not inherently determine the product type, just the major version number of the firmware within a product type.

The correct and future proof approach - especially in the case of Q Series - should **qualify the version number with the Device Type** - this is how the TView Programmer determines what device / product it is talking to. The **device type is embedded in the upper nibble of the Preferred Programmer Version** - referenced with PIC181.

Product Type	Device type enumeration
E Series	0
M Series	1
O (J/K) Series	2
Q Series	3

Q Series firmware version is presently "2.2.z", but will soon progress to "2.4.z", but a Q Series radio will always be a Device Type 3

"R" Read Parameter. ('P', 'C')

E Series – R4.8.0+.

M Series – R5.7.0+.

O Series – all versions.

Q Series – all versions.

Q Firmware version and Build #

PIC358 & PIC359 formats:

Reading PIC358 returns a (32bit) LONG. The upper byte is normally the ASCII code for the release status - 'R', 'B', or 'A' (Release, Beta, Alpha) being 0x52, 0x42, or 0x41 respectively. However in Q Series is ' ' - 0x20 - (space character).

The next 3 bytes are the version number - e.g. 2.4.0 will be coded as 0x020400. So the current Q Series with 2.4.0 firmware will return a value of 0x20020400 when reading PIC358

PIC359 returns the build number as a (16bit WORD) value - e.g. 2.4.0.7071 will return 0x1b9f when reading PIC359

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QHxxx - PIC 400 & 401 will return the below information for each PIC. (400 is the unit you are connected to and 401 will be its paired unit.) Online info is found from bits 30..31

Below is the updated PIC status for QH configurations (changes in red):

BITS	DESCRIPTION
0..1	Supply voltage error
2..3	Transmit power error
4..5	Link error
6..7	High temperature error
8..9	PLL error
10..11	Fatal error
12..13	VSWR error
14..15	Fan error
16..17	RSSI error
18..19	Good radio receive packet error
20..25	Reserved for future use
25	Valid – always 1. If 0, PIC value is invalid.
26..27	CPLD unit error (bit 0 = unit 1, bit 1 = unit 2)
28	Unit index (0 = unit 1, 1 = unit 2)
29	Changeover pending
30..31	Channel selection

All 2 bit error codes above that do not have info describing the bits has the following format.

For errors:

BIT VALUE	DESCRIPTION
00	Alarm not being used for health status
01	No alarm
10	Recovered alarm (require manual clear)
11	Alarm in progress

This is the Channel Selection bits 30..31 format

For channel selection:

BIT VALUE	DESCRIPTION
00	Channel offline
01	Online
10	Remotely selected
11	Site forced

ClearSCADA Advanced Trio driver - Qx PIC list & QH status information

QHxxx - PIC 125 controls the following base station attributes:

BITS	DESCRIPTION
0	Force unit offline
1	Clear unit base station alarms and reset change over counter
2...31	Reserved for future use

QHxxx - PIC 231 controls the force timer. Setting this to a value other than zero will prevent the base station from auto switching. Accepts values from 0 to 255 in seconds and is self-decrementing.

If the unit that you want to be online is already online, then you do not send PIC125 and only maintain the timer (PIC 231) to be other than zero.

If the unit that you want online is not online, then you send the online unit PIC 125 (force unit offline) then wait 5 seconds and then maintain timer (PIC 231) and not allow it to be zero.