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**TB8100** base station

**TB8100 Base Station  
Computer Controlled  
Interface (CCI) Protocol**



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## Document Conventions

“Configure > Base Station > Miscellaneous” means “click the Configure icon on the toolbar, then in the navigation pane find the Base Station group, and select Miscellaneous from it”.

## Associated Documentation

TB8100 Installation and Operation Manual

TB8100 Service Kit and Alarm Center User’s Manuals and online Help

## Abbreviations

Abbreviation	Description
BS	Base Station
CCI	Computer Controlled Interface
DTE	Data Terminal Equipment
FIFO	First In First Out

The TB8100 Computer Controlled Interface (CCI) protocol allows external computer equipment to remotely monitor and control a TB8100 base station. CCI provides the same general command structure and formatting as CCDI, however it does not provide the data capability.

The TB8100 CCI protocol requires Service Kit software version 02.03 or later, and reciter, PA, and PMU firmware versions 02.03 or later.

This Application Note contains the specifications for the TB8100 CCI protocol version 01. It provides information on mode changes and the general protocol format, and includes details about the various commands. It is assumed that the reader is familiar with the TB8100 base station, in particular the TB8100 Service Kit software.

This Application Note is intended for system integrators.

# 1 Connecting to the Base Station

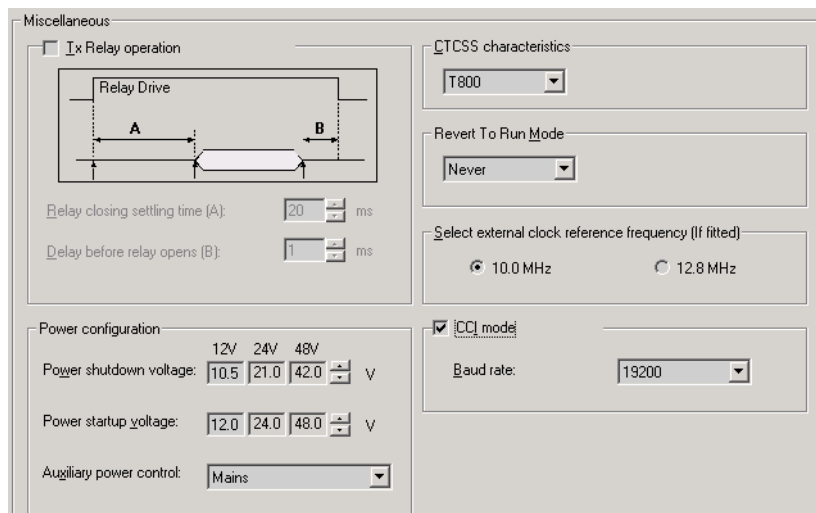
An RS-232 serial port is provided as standard on the TB8100 base station's control panel. An RS-232 serial port is also available on the rear panel of any reciter fitted with a TaitNet RS-232 system interface board (TBA10L0).

Refer to the "Connection" chapter in the TB8100 Installation and Operation Manual for full details of the serial interface connections.

# 2 Configuring the Base Station

The following instructions describe how to configure the base station to operate in CCI mode.

1. Run the Service Kit and select Configure > Base Station > Miscellaneous.
2. Select the **CCI mode** check box (CCI mode is disabled by default). The base station will now enter CCI mode when in Run mode (refer to ["Entering and Exiting CCI Command Mode" on page 5](#)).
3. In the **Baud rate** list, select the required baud rate. The settings are fixed at eight data bits, no parity, and one stop bit. No hardware or software flow control is provided.



## 3 CCI Command Mode

### 3.1 Entering and Exiting CCI Command Mode

CCI command mode and Service Kit communication are mutually exclusive. This means that:

- while in CCI command mode, all Service Kit communication for configuration, monitoring and diagnostics will be blocked<sup>1</sup>, and all alarm dialout attempts will be suspended
- while the Service Kit or Alarm Center is connected, no CCI commands will be accepted.

The base station will enter CCI command mode when all of the following conditions are true:

- the **CCI mode** check box is selected
- the base station is in Run mode
- the Service Kit is disconnected from the base station.

When entering CCI command mode, the base station will send the CCI prompt “.” (dot).

The base station will exit CCI command mode under either of the following conditions:

- the base station exits Run mode
- the Service Kit connects at the configured CCI baud rate.



**Note** While CCI command mode is active, the base station is in Run mode and consequently Task Manager is also active. Task Manager actions and CCI actions work on a FIFO principle, however if the time between two interfering actions becomes very small (milliseconds), the end result may be unexpected. For example, if a Task Manager statement to set digital output 1 is triggered almost simultaneously with the CCI “action” command to reset digital output 1, the end result may not be as expected.



**Note** If the base station is operated in Power Save mode (sleep or deep sleep modes), the Power Save control panel (TBA2010) will not be switched off. This will result in a small increase in power consumption.



**Note** While in CCI command mode, the base station can only detect an incoming Service Kit connection at the same baud rate as the configured CCI baud rate.

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1. While in CCI command mode, the user may terminate any CCI client (on the PC) and make a Service Kit connection (at the CCI baud rate) at any time.

## 3.2 CCI Message Format

**Command Format** All TB8100 CCI commands are in the general form of:

**[IDENT] [SIZE] ([PARAMS]) [CHECKSUM] <CR>**

[IDENT]	The message identifier. Identifiers are single ASCII characters (lower-case alphabetical) which categorise the message type.
[SIZE]	The number of characters which make up the [PARAMS] field. [SIZE] is an 8-bit number expressed in ASCII hex notation (two characters).
[PARAMS]	An optional field, depending on the command.
[CHECKSUM]	An 8-bit checksum of the [IDENT], [SIZE] and [PARAMS] fields. Expressed in two-character ASCII hex notation.
<CR>	The carriage return packet terminator.

**Reponse Format** All TB8100 CCI responses are in the general form of:

**[IDENT] [SIZE] [ERROR] ([PARAMS]) [CHECKSUM] <CR> <.>**

[IDENT]	The message identifier identical to the command. Identifiers are single ASCII characters (lower-case alphabetical) which categorise the message type.
[SIZE]	The number of characters which make up the [PARAMS] field. [SIZE] is an 8-bit number expressed in ASCII hex notation (two characters).
[ERROR]	The 8-bit error code, expressed in ASCII hex notation: 00 = successful operation, optional params will follow 01 = unsupported command 02 = checksum error 03 = parameter error 04 = invalid terminating character 05 = BS not ready
[PARAMS]	An optional field, depending on the response.
[CHECKSUM]	An 8-bit checksum of the [IDENT], [SIZE], [ERROR] and [PARAMS] fields. Expressed in two-character ASCII hex notation.
<CR>	The carriage return packet terminator.
<.>	The "." (dot) character. Every response is terminated with a dot character to indicate to the DTE that it is ready to receive another command.

### 3.3 CCI Command Processing

In CCI command mode, the computer equipment (DTE) sends a command sequence and waits for a response before the next command sequence is sent.

The base station normally responds to a command within one second after receiving the command. However, under certain conditions this may take longer, for example during Power Save or other processes with long wait times.

In these cases it will be possible to check the presence of the base station by sending a single <CR> character, even after having sent a CCI command without having received a response. The base station will respond with a single <.> (dot) character.

### 3.4 Calculating the CCI [CHECKSUM]

[CHECKSUM] is calculated by applying the following algorithm:

1. Take the sum of all message bytes preceding [CHECKSUM].
2. Retain bits 0 to 7, discarding any higher order bits resulting from the summation.
3. Form the two's complement of the remainder.
4. Convert the binary number into two ASCII hex digits, MSD first.

#### Example

Read Tag 31000005

r0831000005**9D**

1. Take the sum of all message bytes preceding [CHECKSUM]:  
 $r = 72h, 0 = 30h, 8 = 38h$  etc., therefore the sum is:  
 $72 + 30 + 38 + 33 + 31 + 30 + 30 + 30 + 30 + 30 + 30 + 35 = 263h$
2. Retain bits 0 to 7, discarding any higher order bits resulting from the summation:  
63h
3. Form the two's complement of the remainder:  
 $63h = 0110\ 0011$   
two's complement = 1001 1101
4. Convert the binary number into two ASCII hex digits, MSD first:  
 $1001\ 1101 = 9D$

### 3.5 Supported CCI Commands

The following CCI commands are supported by the TB8100 base station.

Command	IDENT	Description
READ	r	reads a TB8100 parameter
ACTION	a	initiates a TB8100 action
VERSION	v	returns the CCI version number

#### READ

The READ command reads and returns a TB8100 data item. The parameters are specified in [“Data Tags” on page 11](#). The READ command has the following format:

##### Command (DTE to BS)

**r [SIZE] [DATATAG] [CHECKSUM] <CR>**

r	“r” is sent as a single ASCII character and represents the READ command.
[SIZE]	“08”. The number of characters which make up the [DATATAG] field, expressed in two-character ASCII hex notation.
[DATATAG]	The identifier of the data item, expressed as an eight character ASCII string (refer to <a href="#">“Data Tags” on page 11</a> ).
[CHECKSUM]	An 8-bit checksum, expressed in two-character ASCII hex notation (see <a href="#">“Calculating the CCI [CHECKSUM]” on page 7</a> ).
<CR>	The carriage return packet terminator.

##### Response (BS to DTE)

**r [SIZE] [ERROR] ([VALUE]) [CHECKSUM] <CR> <.;>**

r	“r” is sent as a single ASCII character and represents the READ command.
[SIZE]	The number of characters which make up the [VALUE] field, expressed in two-character ASCII hex notation.
[ERROR]	An 8-bit error code, expressed in ASCII hex notation.
[VALUE]	A string of characters of variable length. Refer to the “Example Value” column in <a href="#">Table 1 on page 11</a> .
[CHECKSUM]	An 8-bit checksum, expressed in two-character ASCII hex notation (see <a href="#">“Calculating the CCI [CHECKSUM]” on page 7</a> ).
<CR>	The carriage return packet terminator.



## ACTION

The ACTION command executes the action identified by the action tag. The parameters are specified in “[Action Tags](#)” on page 23. The ACTION command has the following format:

### Command (DTE to BS)

**a [SIZE] [ACTIONTAG] [CHECKSUM] <CR>**

a	“a” is sent as a single ASCII character and represents the ACTION command.
[SIZE]	“04”. The number of characters which make up the [ACTIONTAG] field, expressed in two-character ASCII hex notation.
[ACTIONTAG]	The identifier of the action, expressed as a four-character ASCII string (refer to “ <a href="#">Action Tags</a> ” on page 23).
[CHECKSUM]	An 8-bit checksum, expressed in two-character ASCII hex notation (see “ <a href="#">Calculating the CCI [CHECKSUM]</a> ” on page 7).
<CR>	The carriage return packet terminator.

### Response (BS to DTE)

**a [SIZE] [ERROR] [CHECKSUM] <CR> <.;>**

a	“a” is sent as a single ASCII character and represents the ACTION command.
[SIZE]	“00”. There are no values to return.
[ERROR]	An 8-bit error code, expressed in ASCII hex notation.
[CHECKSUM]	An 8-bit checksum, expressed in two-character ASCII hex notation (see “ <a href="#">Calculating the CCI [CHECKSUM]</a> ” on page 7).
<CR>	The carriage return packet terminator.

## VERSION

The VERSION command returns the CCI version number. It has the following format:

### Command (DTE to BS)

**v [SIZE] [CHECKSUM] <CR>**

v	"v" is sent as a single ASCII character and represents the VERSION command.
[SIZE]	"00". The number of characters which make up the [PARAMS] field, expressed in two-character ASCII hex notation.
[CHECKSUM]	An 8-bit checksum, expressed in two-character ASCII hex notation (see <a href="#">"Calculating the CCI [CHECKSUM]" on page 7</a> ).
<CR>	The carriage return packet terminator.

### Response (BS to DTE)

**v [SIZE] [ERROR] [VERSION] [CHECKSUM] <CR> <.;>**

v	"v" is sent as a single ASCII character and represents the VERSION command.
[SIZE]	"02". The number of characters which make up the [VERSION] field, expressed in two-character ASCII hex notation.
[ERROR]	An 8-bit error code, expressed in ASCII hex notation.
[VERSION]	An 8-bit CCI version number, expressed in two-character ASCII hex notation.
[CHECKSUM]	An 8-bit checksum, expressed in two-character ASCII hex notation (see <a href="#">"Calculating the CCI [CHECKSUM]" on page 7</a> ).
<CR>	The carriage return packet terminator.

## 4 Data Tags

The following table specifies the data types used for the data tags, their units, resolution, number of bytes of binary data, value range, and any specific notes.

**Table 1 Data tag details**

Data	Units	Resolution	No. of Bytes	Signed	Range	Notes	[value] Field Representation		
							Conversion	Example Value	Example String
Current	mA	1	2	N	0mA to 65535mA		Hex to ASCII	2300mA	08FC
Flag			1		0 to 1	0 = false 1 = true	Hex to ASCII	false	00
Frequency	Hz	1	4	N	0Hz to 4294967295Hz		Hex to ASCII	420MHz	1908B100
ShortInteger		1	1	N	0 to 255		Hex to ASCII	29	1D
Integer		1	2	N	0 to 65535		Hex to ASCII	12000	2EE0
LongInteger		1	4	N	0 to 4294967295		Hex to ASCII	2516	000009D4
Level	dBm	0.01	2	Y	-327.68dBm to +327.67dBm		Hex to ASCII	-20.00dBm	F830
Percentage	%	1	1	Y	-128% to +127%		Hex to ASCII	-8%	F8
Power	W	1	1	N	0W to 255W		Hex to ASCII	50W	32
Ratio	: 1	0.1	1	N	0:1 to 25.5:1		Hex to ASCII	13:1	82
Temperature <sup>a</sup>	°C	1	2	Y	-128°C to +127°C	first byte is status	Hex to ASCII	-20°C (known and stable)	03EC
Time	ms	1	4	N	0ms to 4294967295ms	49.7102696180556 days	Hex to ASCII	3:21:43:23:555 <sup>b</sup>	141C5EA3
Voltage	V	0.01	2	Y	-327.68V to +327.67V		Hex to ASCII	48.00V	12C0
Enum - FreqRefSource		1	1	N	0 to 1	0 = internal 1 = external	Hex to ASCII	external	01
Enum - Mode		1	1	N	0 to 2	0 = run 1 = standby 2 = download	Hex to ASCII	run	00
Enum - PowerSource		1	1	N	0 to 1	0 = mains 1 = battery	Hex to ASCII	battery	01
Enum - LEDState		1	1	N	0 to 2	0 = off 1 = steady 2 = flashing	Hex to ASCII	flashing	02
Enum - ChanSelectSource		1	1	N	0 to 1	0 = hardware 1 = software	Hex to ASCII	hardware	00
Enum - Condition		1	1	N	0 to 1	0 = bad 1 = good	Hex to ASCII	good	01
Enum - SIFType		1	1	N	0 to 5	0 = none fitted 1 = standard 2 = isolated 3 = isolated E&M 4 = TaitNet 5 = TaitNet RS-232	Hex to ASCII	TaitNet_RS232	05
Date	ISO	days	10		0000-01-01 to 9999-12-31	stored using the ISO 8601 standard, i.e. YYYY-MM-DD	ASCII to ASCII	2004-10-11	2004-10-11
String <sup>c</sup>			n				ASCII to ASCII	Base Station	Base Station

a. The first byte holds 3 values: 1 = unknown, 2 = known but not stable, 3 = known and stable.

b. Expressed as days, hours, minutes, seconds, and milliseconds in the format: dd:hh:mm:ss:ms.

c. Stores a string where "n" represents the number of characters being displayed. Note that strings do not need to be null terminated, because all tagged data contains the length of the data component. All strings are in UTF8 format, and may contain trailing spaces.



The following table specifies the data tags which can be accessed via the read command.

**Table 2 List of data tags**

Item	Data Tag	Data Type	Comments
<b>Reciter Variable Parameters</b>			
RSSI reading	30000001	Level - dBm	RSSI measured at RF input
Sinad reading	30000002	Level - dBm	SINAD level measured at RF input
InputBalancedLine	30000003	Level - dBm	Level on Balanced Line input
InputUnbalancedLine	30000004	Voltage - V	Level on Unbalanced Line input
OutputBalancedLine	30000005	Level - dBm	Level on Balanced Line output
OutputUnbalancedLine	30000006	Voltage - V	Level on Unbalanced Line output
RSSIOutputVoltage	30000007	Voltage - V	Voltage level on the RSSI analog output
WatchdogResets	4000000B	Integer	Number of Watchdog resets generated by the system
<b>Power Amplifier Variable Parameters</b>			
TXForwardPower	30001001	Power - W	Forward power at RF output
TXReversePower	30001002	Power - W	Reverse power at RF output
TXVSWR	30001003	Ratio	Standing-wave ratio at RF output
PADuty5	30001004	Percentage	% of time BS transmitted in last 5 min
PADuty24	30001005	Percentage	% of time BS transmitted in last 24 hrs
AirTemperature	30001006	Temperature	PA Air Intake temperature
DriverTemperature	30001007	Temperature	PA Driver temperature
Final1Temperature	30001008	Temperature	PA Final 1 temperature
Final2Temperature	30001009	Temperature	PA Final 2 temperature
LEDState	3000100A	Enum - LEDState	State of PA fault LED
FanState	3000100B	Flag	State of the PA fan (true = running)
PASupply	3000100C	Voltage - V	PA supply input
PADriverCurrent	3000100D	Current - mA	PA Driver current
PAFinal1Current	3000100E	Current - mA	PA Final 1 current
PAFinal2Current	3000100F	Current - mA	PA Final 2 current
<b>Power Management Unit Variable Parameters</b>			
TemperatureACDC	30002001	Temperature	Temperature of the ACDC converter. Reports 0 if DC only
TemperatureDCDC	30002002	Temperature	Temperature of the DCDC converter. Reports 0 if AC only

**Table 2 List of data tags (Continued)**

Item	Data Tag	Data Type	Comments
PowerSource	30002003	Enum - PowerSource	Current selected power source
MainsInState	30002004	Enum - Condition	State of the AC input. Reports bad if DC only
BatteryInState	30002005	Enum - Condition	State of the DC input. Reports bad if AC only
BatteryInVoltage	30002006	Voltage - V	Measured voltage at DC input. Reports 0 if AC only
OutCurrent	30002007	Current - mA	Measured output current of the PMU
OutVoltage	30002008	Voltage - V	Measured output voltage of the PMU
OutStatus	30002009	Enum - Condition	State of the PMU supply to the PA
AuxOutState	3000200A	Enum - Condition	State of the AUX output of the PMU. Reports OFF if no AUX supply fitted
LEDState	3000200B	Enum - LEDState	State of the PMU fault LED
FanState	3000200C	Flag	State of the PMU fan
DCDCLowPowerMode	3000200D	Flag	State of the PMU low power mode.
BusConnect	3000200E	Flag	State of the PMU standby supply
<b>Base Station Variable Parameters</b>			
SelectedChannel	30003001	ShortInteger	Currently selected channel
HardwareChannelNumber	30003002	ShortInteger	Channel currently selected via digital inputs
SoftwareChannelNumber	30003003	ShortInteger	Channel currently selected via software (Task Manager/CCI)
Mode	30003004	Enum - Mode	Current BS mode (always Run mode)
ChannelSelectSource	30003005	Enum - ChanSelectSource	Current method of channel selection
FrequencyReferenceSource	30003006	Enum - FreqRefSource	Current source of the frequency reference
PAKeyedAsTTR	30003007	Flag	PA currently keyed up as Talk Through Repeater
PAKeyedAsLCB	30003008	Flag	PA currently keyed up as Line Controlled Base
TXKeyEnabled	30003009	Flag	State of the TXKEY Enable flag controlled by the Task Manager/CCI
PowerSavingEnabled	3000300A	Flag	State of the PowerSaving Enable flag controlled by the Task Manager/CCI
TXEnabled	3000300B	Flag	State of the Transmitter Enable flag controlled by the Task Manager/CCI

**Table 2 List of data tags (Continued)**

<b>Item</b>	<b>Data Tag</b>	<b>Data Type</b>	<b>Comments</b>
RXEnabled	3000300C	Flag	State of the Receiver Enable flag controlled by the Task Manager/CCI
LCBEnabled	3000300D	Flag	State of the Line Controlled Base Enable flag controlled by the Task Manager/CCI
TTREnabled	3000300E	Flag	State of the Talk Through Repeater Enable flag controlled by the Task Manager/CCI
CWIDEnabled	3000300F	Flag	State of the CWID Enable flag controlled by the Task Manager/CCI
IntercomEnabled	30003010	Flag	State of the Intercom Enable flag controlled by the Task Manager/CCI
LoopbackEnabled	30003011	Flag	State of the Loopback Enable flag controlled by the Task Manager/CCI
AntennaRelayEnabled	30003012	Flag	State of the Antenna Relay Enable flag controlled by the Task Manager/CCI
SubAudibleDecode	30003013	Flag	State of the SubAudible Decode Enable flag controlled by the Task Manager/CCI
HardwareChannelSelectEnabled	30003014	Flag	State of the HardwareChannelSelect Enable flag controlled by the Task Manager/CCI
RxGateState	30003015	Flag	State of the RXGATE output
PACarrierPresent	30003016	Flag	State of the actual output of the PA
TXKeyState	30003019	Flag	State of the TXKEY input
RxFrequency	30003020	Frequency - Hz	Frequency of current selected channel. Reports 0 if invalid channel
TxFrequency	30003021	Frequency - Hz	Frequency of current selected channel. Reports 0 if invalid channel
<b>Digital Inputs</b>			
Input\$ (1)	30004001	Flag	State of the digital input 1
Input\$ (2)	30004002	Flag	State of the digital input 2
Input\$ (3)	30004003	Flag	State of the digital input 3
Input\$ (4)	30004004	Flag	State of the digital input 4
Input\$ (5)	30004005	Flag	State of the digital input 5
Input\$ (6)	30004006	Flag	State of the digital input 6
Input\$ (7)	30004007	Flag	State of the digital input 7
Input\$ (8)	30004008	Flag	State of the digital input 8

**Table 2 List of data tags (Continued)**

Item	Data Tag	Data Type	Comments
Input\$ (9)	30004009	Flag	State of the digital input 9
Input\$ (10)	3000400A	Flag	State of the digital input 10
Input\$ (11)	3000400B	Flag	State of the digital input 11
Input\$ (12)	3000400C	Flag	State of the digital input 12
Input\$ (13)	3000400D	Flag	State of the digital input 13
Input\$ (14)	3000400E	Flag	State of the digital input 14
Input\$ (15)	3000400F	Flag	State of the digital input 15
Input\$ (16)	30004010	Flag	State of the digital input 16
<b>Digital Outputs</b>			
Output\$ (1)	30005001	Flag	State of the digital output 1
Output\$ (2)	30005002	Flag	State of the digital output 2
Output\$ (3)	30005003	Flag	State of the digital output 3
Output\$ (4)	30005004	Flag	State of the digital output 4
Output\$ (5)	30005005	Flag	State of the digital output 5
Output\$ (6)	30005006	Flag	State of the digital output 6
Output\$ (7)	30005007	Flag	State of the digital output 7
Output\$ (8)	30005008	Flag	State of the digital output 8
<b>Subaudible Tones</b>			
SubAudibleTone\$ (1)	30006001	Flag	Presence of the configured subaudible tone 1
SubAudibleTone\$ (2)	30006002	Flag	Presence of the configured subaudible tone 2
SubAudibleTone\$ (3)	30006003	Flag	Presence of the configured subaudible tone 3
SubAudibleTone\$ (4)	30006004	Flag	Presence of the configured subaudible tone 4
SubAudibleTone\$ (5)	30006005	Flag	Presence of the configured subaudible tone 5
SubAudibleTone\$ (6)	30006006	Flag	Presence of the configured subaudible tone 6
SubAudibleTone\$ (7)	30006007	Flag	Presence of the configured subaudible tone 7
SubAudibleTone\$ (8)	30006008	Flag	Presence of the configured subaudible tone 8
SubAudibleTone\$ (9)	30006009	Flag	Presence of the configured subaudible tone 9
SubAudibleTone\$ (10)	3000600A	Flag	Presence of the configured subaudible tone 10
SubAudibleTone\$ (11)	3000600B	Flag	Presence of the configured subaudible tone 11
SubAudibleTone\$ (12)	3000600C	Flag	Presence of the configured subaudible tone 12



**Table 2 List of data tags (Continued)**

Item	Data Tag	Data Type	Comments
SubAudibleTone\$ (13)	3000600D	Flag	Presence of the configured subaudible tone 13
SubAudibleTone\$ (14)	3000600E	Flag	Presence of the configured subaudible tone 14
SubAudibleTone\$ (15)	3000600F	Flag	Presence of the configured subaudible tone 15
SubAudibleTone\$ (16)	30006010	Flag	Presence of the configured subaudible tone 16
<b>Task Manager System Flags</b>			
OverTheAirAlarmsEnabled	30007001	Flag	State of the OverTheAirAlarm Enable flag controlled by the Task Manager/CCI
OverTheLineAlarmsEnabled	30007002	Flag	State of the OverTheLineAlarm Enable flag controlled by the Task Manager/CCI
EmailServiceEnabled	30007003	Flag	State of the EmailAlarm Enable flag controlled by the Task Manager
PowerSaveEnabled	30007004	Flag	State of the OverTheAirAlarm Enable flag controlled by the Task Manager/CCI
SubAudibleDecodeOn	30007005	Flag	State of the SubAudibleDecode Enable flag controlled by the Task Manager/CCI
SubAudibleEncodeOn	30007006	Flag	State of the SubAudibleEncode Enable flag controlled by the Task Manager/CCI
AuxiliarySupplyEnabled	30007007	Flag	State of the Auxilliary Supply Enable flag controlled by the Task Manager/CCI
<b>Reciter Fixed Settings</b>			
Number	31000001	ShortInteger	Number assigned to the Reciter in case of multiple Reciters in a subrack
ProductCode	31000002	String	16 character Product Code of the Reciter (includes trailing spaces)
BandUpperFrequency	31000003	Frequency - Hz	Upper limit of RF band the Reciter is configured to operate in
BandLowerFrequency	31000004	Frequency - Hz	Lower limit of RF band the Reciter is configured to operate in
RXBandUpperFrequency	31000005	Frequency - Hz	Upper limit of receiver switching band the Reciter is tuned to
RXBandLowerFrequency	31000006	Frequency - Hz	Lower limit of receiver switching band the Reciter is tuned to

**Table 2 List of data tags (Continued)**

Item	Data Tag	Data Type	Comments
TXBandUpperFrequency	31000007	Frequency - Hz	Upper limit of exciter switching band the Reciter is tuned to
TXBandLowerFrequency	31000008	Frequency - Hz	Lower limit of exciter switching band the Reciter is tuned to
SerialNumber	31000009	String	8 digit Serial number of the Reciter
HardwareVersion	3100000A	String	4 digit Hardware version number of the Reciter
FirmwareVersion	3100000B	String	4 digit Firmware version loaded in the Reciter
FirmwareVersionUpdateDate	3100000C	Date - ISO	Date the Reciter firmware was last updated
CalibrationUpdateDate	3100000F	Date - ISO	Date the Reciter was last calibrated
SystemInterfaceType	31000010	Enum - SIFType	Code of the System Interface Type currently fitted
SystemInterfaceVersion	31000012	ShortInteger	Version of the System Interface currently fitted
<b>Power Amplifier Fixed Settings</b>			
ProductCode	31001001	String	16 character Product Code of the PA
BandUpperFrequency	31001002	Frequency - Hz	Upper limit of RF band the PA is configured to operate in
BandLowerFrequency	31001003	Frequency - Hz	Lower limit of RF band the PA is configured to operate in
RatedPower	31001004	Power - W	Output power variant of the PA
IsolatorFitted	31001005	Flag	Indication whether the PA is fitted with an isolator
SerialNumber	31001006	String	8 digit Serial number of the PA
HardwareVersion	31001007	String	4 digit Hardware version of the PA
FirmwareVersion	31001008	String	4 digit Firmware version loaded in the PA
FirmwareVersionUpdateDate	31001009	Date - ISO	Date the PA firmware was last updated
CalibrationUpdateDate	3100100A	Date - ISO	Date the PA was last calibrated
<b>Power Management Unit Fixed Settings</b>			
ProductCode	31002001	String	16 character Product Code of the PMU
SerialNumber	31002002	String	8 digit Serial number of the PMU
HardwareVersion	31002003	String	4 digit Hardware version of the PMU
FirmwareVersion	31002004	String	4 digit Firmware version loaded in the PMU

**Table 2 List of data tags (Continued)**

<b>Item</b>	<b>Data Tag</b>	<b>Data Type</b>	<b>Comments</b>
FirmwareVersionUpdateDate	31002005	Date - ISO	Date the PMU firmware was last updated
CalibrationUpdateDate	31002006	Date - ISO	Date the PMU was last calibrated
ACDCFitted	31002007	Flag	Indication whether PMU is fitted with an ACDC converter
DCDCFitted	31002008	Flag	Indication whether PMU is fitted with a DCDC converter
DCDCType	31002009	Voltage - V	Voltage rating of the DCDC converter. Reports 0 if no DCDC converter fitted
AuxFitted	3100200A	Flag	Indication whether Auxilliary supply is fitted.
AuxType	3100200B	Voltage - V	Voltage rating of the Auxilliary supply. Reports 0 if no AUX supply fitted
Standby	3100200C	Flag	Indication whether PMU is fitted with a Standby Supply
<b>Task Manager Timer Values</b>			
Timer\$ (1)	32000100	Time - ms	Current value of timer 1
Timer\$ (2)	32000110	Time - ms	Current value of timer 2
Timer\$ (3)	32000120	Time - ms	Current value of timer 3
Timer\$ (4)	32000130	Time - ms	Current value of timer 4
Timer\$ (5)	32000140	Time - ms	Current value of timer 5
Timer\$ (6)	32000150	Time - ms	Current value of timer 6
Timer\$ (7)	32000160	Time - ms	Current value of timer 7
Timer\$ (8)	32000170	Time - ms	Current value of timer 8
Timer\$ (9)	32000180	Time - ms	Current value of timer 9
Timer\$ (10)	32000190	Time - ms	Current value of timer 10
Timer\$ (11)	320001A0	Time - ms	Current value of timer 11
Timer\$ (12)	320001B0	Time - ms	Current value of timer 12
Timer\$ (13)	320001C0	Time - ms	Current value of timer 13
Timer\$ (14)	320001D0	Time - ms	Current value of timer 14
Timer\$ (15)	320001E0	Time - ms	Current value of timer 15
Timer\$ (16)	320001F0	Time - ms	Current value of timer 16
<b>Task Manager Counter Values</b>			
Counter\$ (1)	32001100	LongInteger	Current value of counter 1
Counter\$ (2)	32001110	LongInteger	Current value of counter 2
Counter\$ (3)	32001120	LongInteger	Current value of counter 3
Counter\$ (4)	32001130	LongInteger	Current value of counter 4
Counter\$ (5)	32001140	LongInteger	Current value of counter 5
Counter\$ (6)	32001150	LongInteger	Current value of counter 6

**Table 2 List of data tags (Continued)**

Item	Data Tag	Data Type	Comments
Counter\$ (7)	32001160	LongInteger	Current value of counter 7
Counter\$ (8)	32001170	LongInteger	Current value of counter 8
Counter\$ (9)	32001180	LongInteger	Current value of counter 9
Counter\$ (10)	32001190	LongInteger	Current value of counter 10
Counter\$ (11)	320011A0	LongInteger	Current value of counter 11
Counter\$ (12)	320011B0	LongInteger	Current value of counter 12
Counter\$ (13)	320011C0	LongInteger	Current value of counter 13
Counter\$ (14)	320011D0	LongInteger	Current value of counter 14
Counter\$ (15)	320011E0	LongInteger	Current value of counter 15
Counter\$ (16)	320011F0	LongInteger	Current value of counter 16
<b>Task Manager Flag Values</b>			
Flag\$ (1)	32002100	Flag	Current state of flag 1
Flag\$ (2)	32002110	Flag	Current state of flag 2
Flag\$ (3)	32002120	Flag	Current state of flag 3
Flag\$ (4)	32002130	Flag	Current state of flag 4
Flag\$ (5)	32002140	Flag	Current state of flag 5
Flag\$ (6)	32002150	Flag	Current state of flag 6
Flag\$ (7)	32002160	Flag	Current state of flag 7
Flag\$ (8)	32002170	Flag	Current state of flag 8
Flag\$ (9)	32002180	Flag	Current state of flag 9
Flag\$ (10)	32002190	Flag	Current state of flag 10
Flag\$ (11)	320021A0	Flag	Current state of flag 11
Flag\$ (12)	320021B0	Flag	Current state of flag 12
Flag\$ (13)	320021C0	Flag	Current state of flag 13
Flag\$ (14)	320021D0	Flag	Current state of flag 14
Flag\$ (15)	320021E0	Flag	Current state of flag 15
Flag\$ (16)	320021F0	Flag	Current state of flag 16
<b>Reciter Alarms<sup>a</sup></b>			
ReciterPowerUpFail	50000001	Flag	Error occurred during Reciter power up
ExciterSynthOutOfLock	50000002	Flag	Exciter synthesiser is out of lock
ClockSynthOutOfLock	50000003	Flag	Clock synthesiser is out of lock
RXSynthOutOfLock	50000004	Flag	Receiver synthesiser is out of lock
InvalidChannelSelected	50000009	Flag	An invalid channel is currently selected
<b>Power Amplifier Alarms<sup>a</sup></b>			
VSWRFault	50001001	Flag	VSWR is greater than configured alarm threshold

**Table 2 List of data tags (Continued)**

<b>Item</b>	<b>Data Tag</b>	<b>Data Type</b>	<b>Comments</b>
ForwardPowerLow	50001002	Flag	Forward Power is below configured alarm threshold
ReversePowerHigh	50001003	Flag	Reverse Power is above configured alarm threshold
Final1TemperatureHigh	50001004	Flag	Final1 temperature is above configured alarm threshold
Final2TemperatureHigh	50001005	Flag	Final2 temperature is above configured alarm threshold
DriverTemperatureHigh	50001006	Flag	Driver temperature is above configured alarm threshold
PAShutdown	50001009	Flag	PA is shutdown due to critical failure
PADriverCurrentHigh	5000100A	Flag	Driver current is above fixed threshold
PAFinal1CurrentHigh	5000100B	Flag	Final1 current is above fixed threshold
PAFinal2CurrentHigh	5000100C	Flag	Final2 current is above fixed threshold
SupplyVoltageHigh	5000100D	Flag	PA supply voltage is above 30 Volts
SupplyVoltageLow	5000100E	Flag	PA supply voltage is below 26 Volts
InvalidCalibration	5000100F	Flag	PA is not fully calibrated
InvalidConfiguration	50001010	Flag	PA is not fully configured
Foldback	50001011	Flag	PA is currently running on foldback power
Imbalance	50001012	Flag	Ratio between final1 and final 2 current outside range
PAFanFailure	50001013	Flag	PA fan has been powered but is not rotating
<b>Power Management Unit Alarms<sup>a</sup></b>			
MainsFailure	50002001	Flag	Mains supply is outside operating range
BatteryVoltageHigh	50002002	Flag	Battery voltage is above configured alarm threshold
BatteryVoltageLow	50002003	Flag	Battery voltage is below configured alarm threshold
BatteryProtect	50002004	Flag	PMU is in battery protect mode
PMUShutdownImminent	50002005	Flag	Battery voltage is below configured shutdown threshold
TemperatureHigh	50002006	Flag	PMU AC or DC converter above 87 degrees
VoltageOutHigh	50002007	Flag	PMU output voltage is above 32 Volts
VoltageOutLow	50002008	Flag	PMU output voltage is below 24 Volts

**Table 2 List of data tags (Continued)**

Item	Data Tag	Data Type	Comments
CurrentOutHigh	50002009	Flag	PMU output current is above 15 Amps while output voltage is low
PMUFanFailure	5000200B	Flag	PMU fan has been powered but is not rotating
<b>Alarm Summary<sup>a</sup></b>			
BaseStationSummary	50003001	Flag	At least one configured alarm is active
ReciterSummary	50003002	Flag	At least one configured Reciter alarm is active
PowerAmplifierSummary	50003003	Flag	At least one configured PA alarm is active
PowerManagementUnitSummary	50003004	Flag	At least one configured PMU alarm is active
NoPMUDetected	50003005	Flag	No PMU is detected by the Reciter
NoPADetected	50003006	Flag	No PA is detected by the Reciter
UnbalancedLineInputLow	50003007	Flag	Unbalanced Line Input level is below configured alarm threshold
BalancedLineInputLow	50003008	Flag	Balanced Line input level is below configured alarm threshold
RSSIHigh	50003009	Flag	RSSI is above configured alarm threshold
RSSILow	5000300A	Flag	RSSI is below configured alarm threshold
AirTemperatureHigh	5000300B	Flag	Air temperature is above configured alarm threshold
AirTemperatureLow	5000300C	Flag	Air temperature is below configured alarm threshold
ExternalFreqRefRemoved	5000300D	Flag	External frequency reference is removed
ExternalFreqRefInvalid	5000300E	Flag	External frequency reference is present but invalid

a. Alarms can be read and will be reported irrespective of the configured Alarm Control.

## 5 Action Tags

The following table specifies the actions that can be initiated via the “a” (action) command. The functionality of the actions is the same as the Task Manager action. Refer to the Service Kit User’s Manual for more information.



**Note** Channel selection control through CCI (GotoChannel\_1 through to GotoChannel\_255) is only possible if hardware channel selection is disabled. This is the same behaviour as in Task Manager.

**Table 3 List of action tags**

Task Manager Action Name	Action Tag	Task Manager Action Name	Action Tag
GotoChannel_1	0500	GotoChannel_33	0520
GotoChannel_2	0501	GotoChannel_34	0521
GotoChannel_3	0502	GotoChannel_35	0522
GotoChannel_4	0503	GotoChannel_36	0523
GotoChannel_5	0504	GotoChannel_37	0524
GotoChannel_6	0505	GotoChannel_38	0525
GotoChannel_7	0506	GotoChannel_39	0526
GotoChannel_8	0507	GotoChannel_40	0527
GotoChannel_9	0508	GotoChannel_41	0528
GotoChannel_10	0509	GotoChannel_42	0529
GotoChannel_11	050A	GotoChannel_43	052A
GotoChannel_12	050B	GotoChannel_44	052B
GotoChannel_13	050C	GotoChannel_45	052C
GotoChannel_14	050D	GotoChannel_46	052D
GotoChannel_15	050E	GotoChannel_47	052E
GotoChannel_16	050F	GotoChannel_48	052F
GotoChannel_17	0510	GotoChannel_49	0530
GotoChannel_18	0511	GotoChannel_50	0531
GotoChannel_19	0512	GotoChannel_51	0532
GotoChannel_20	0513	GotoChannel_52	0533
GotoChannel_21	0514	GotoChannel_53	0534
GotoChannel_22	0515	GotoChannel_54	0535
GotoChannel_23	0516	GotoChannel_55	0536
GotoChannel_24	0517	GotoChannel_56	0537
GotoChannel_25	0518	GotoChannel_57	0538
GotoChannel_26	0519	GotoChannel_58	0539
GotoChannel_27	051A	GotoChannel_59	053A
GotoChannel_28	051B	GotoChannel_60	053B
GotoChannel_29	051C	GotoChannel_61	053C
GotoChannel_30	051D	GotoChannel_62	053D
GotoChannel_31	051E	GotoChannel_63	053E
GotoChannel_32	051F	GotoChannel_64	053F

<b>Task Manager Action Name</b>	<b>Action Tag</b>
GotoChannel_65	0540
GotoChannel_66	0541
GotoChannel_67	0542
GotoChannel_68	0543
GotoChannel_69	0544
GotoChannel_70	0545
GotoChannel_71	0546
GotoChannel_72	0547
GotoChannel_73	0548
GotoChannel_74	0549
GotoChannel_75	054A
GotoChannel_76	054B
GotoChannel_77	054C
GotoChannel_78	054D
GotoChannel_79	054E
GotoChannel_80	054F
GotoChannel_81	0550
GotoChannel_82	0551
GotoChannel_83	0552
GotoChannel_84	0553
GotoChannel_85	0554
GotoChannel_86	0555
GotoChannel_87	0556
GotoChannel_88	0557
GotoChannel_89	0558
GotoChannel_90	0559
GotoChannel_91	055A
GotoChannel_92	055B
GotoChannel_93	055C
GotoChannel_94	055D
GotoChannel_95	055E
GotoChannel_96	055F
GotoChannel_97	0560
GotoChannel_98	0561
GotoChannel_99	0562
GotoChannel_100	0563
GotoChannel_101	0564
GotoChannel_102	0565
GotoChannel_103	0566
GotoChannel_104	0567
GotoChannel_105	0568
GotoChannel_106	0569
GotoChannel_107	056A

<b>Task Manager Action Name</b>	<b>Action Tag</b>
GotoChannel_108	056B
GotoChannel_109	056C
GotoChannel_110	056D
GotoChannel_111	056E
GotoChannel_112	056F
GotoChannel_113	0570
GotoChannel_114	0571
GotoChannel_115	0572
GotoChannel_116	0573
GotoChannel_117	0574
GotoChannel_118	0575
GotoChannel_119	0576
GotoChannel_120	0577
GotoChannel_121	0578
GotoChannel_122	0579
GotoChannel_123	057A
GotoChannel_124	057B
GotoChannel_125	057C
GotoChannel_126	057D
GotoChannel_127	057E
GotoChannel_128	057F
GotoChannel_129	0580
GotoChannel_130	0581
GotoChannel_131	0582
GotoChannel_132	0583
GotoChannel_133	0584
GotoChannel_134	0585
GotoChannel_135	0586
GotoChannel_136	0587
GotoChannel_137	0588
GotoChannel_138	0589
GotoChannel_139	058A
GotoChannel_140	058B
GotoChannel_141	058C
GotoChannel_142	058D
GotoChannel_143	058E
GotoChannel_144	058F
GotoChannel_145	0590
GotoChannel_146	0591
GotoChannel_147	0592
GotoChannel_148	0593
GotoChannel_149	0594
GotoChannel_150	0595



<b>Task Manager Action Name</b>	<b>Action Tag</b>
GotoChannel_151	0596
GotoChannel_152	0597
GotoChannel_153	0598
GotoChannel_154	0599
GotoChannel_155	059A
GotoChannel_156	059B
GotoChannel_157	059C
GotoChannel_158	059D
GotoChannel_159	059E
GotoChannel_160	059F
GotoChannel_161	05A0
GotoChannel_162	05A1
GotoChannel_163	05A2
GotoChannel_164	05A3
GotoChannel_165	05A4
GotoChannel_166	05A5
GotoChannel_167	05A6
GotoChannel_168	05A7
GotoChannel_169	05A8
GotoChannel_170	05A9
GotoChannel_171	05AA
GotoChannel_172	05AB
GotoChannel_173	05AC
GotoChannel_174	05AD
GotoChannel_175	05AE
GotoChannel_176	05AF
GotoChannel_177	05B0
GotoChannel_178	05B1
GotoChannel_179	05B2
GotoChannel_180	05B3
GotoChannel_181	05B4
GotoChannel_182	05B5
GotoChannel_183	05B6
GotoChannel_184	05B7
GotoChannel_185	05B8
GotoChannel_186	05B9
GotoChannel_187	05BA
GotoChannel_188	05BB
GotoChannel_189	05BC
GotoChannel_190	05BD
GotoChannel_191	05BE
GotoChannel_192	05BF
GotoChannel_193	05C0

<b>Task Manager Action Name</b>	<b>Action Tag</b>
GotoChannel_194	05C1
GotoChannel_195	05C2
GotoChannel_196	05C3
GotoChannel_197	05C4
GotoChannel_198	05C5
GotoChannel_199	05C6
GotoChannel_200	05C7
GotoChannel_201	05C8
GotoChannel_202	05C9
GotoChannel_203	05CA
GotoChannel_204	05CB
GotoChannel_205	05CC
GotoChannel_206	05CD
GotoChannel_207	05CE
GotoChannel_208	05CF
GotoChannel_209	05D0
GotoChannel_210	05D1
GotoChannel_211	05D2
GotoChannel_212	05D3
GotoChannel_213	05D4
GotoChannel_214	05D5
GotoChannel_215	05D6
GotoChannel_216	05D7
GotoChannel_217	05D8
GotoChannel_218	05D9
GotoChannel_219	05DA
GotoChannel_220	05DB
GotoChannel_221	05DC
GotoChannel_222	05DD
GotoChannel_223	05DE
GotoChannel_224	05DF
GotoChannel_225	05E0
GotoChannel_226	05E1
GotoChannel_227	05E2
GotoChannel_228	05E3
GotoChannel_229	05E4
GotoChannel_230	05E5
GotoChannel_231	05E6
GotoChannel_232	05E7
GotoChannel_233	05E8
GotoChannel_234	05E9
GotoChannel_235	05EA
GotoChannel_236	05EB

Task Manager Action Name	Action Tag
GotoChannel_237	05EC
GotoChannel_238	05ED
GotoChannel_239	05EE
GotoChannel_240	05EF
GotoChannel_241	05F0
GotoChannel_242	05F1
GotoChannel_243	05F2
GotoChannel_244	05F3
GotoChannel_245	05F4
GotoChannel_246	05F5
GotoChannel_247	05F6
GotoChannel_248	05F7
GotoChannel_249	05F8
GotoChannel_250	05F9
GotoChannel_251	05FA
GotoChannel_252	05FB
GotoChannel_253	05FC
GotoChannel_254	05FD
GotoChannel_255	05FE
MakeChannelDefault	0600
GotoNextChannel	0700
TxCWIDNow	0820
FanTestNow	0850
ResetBaseStation	0870
CustomAction_1	0C00
CustomAction_2	0C01
CustomAction_3	0C02
CustomAction_4	0C03
CustomAction_5	0C04
CustomAction_6	0C05
CustomAction_7	0C06
CustomAction_8	0C07
CustomAction_9	0C08
CustomAction_10	0C09
CustomAction_11	0C0A
CustomAction_12	0C0B
CustomAction_13	0C0C
CustomAction_14	0C0D
CustomAction_15	0C0E
CustomAction_16	0C0F
CustomAction_17	0C10
CustomAction_18	0C11
CustomAction_19	0C12

Task Manager Action Name	Action Tag
CustomAction_20	0C13
DecrementCounter_1	1040
DecrementCounter_2	1041
DecrementCounter_3	1042
DecrementCounter_4	1043
DecrementCounter_5	1044
DecrementCounter_6	1045
DecrementCounter_7	1046
DecrementCounter_8	1047
DecrementCounter_9	1048
DecrementCounter_10	1049
DecrementCounter_11	104A
DecrementCounter_12	104B
DecrementCounter_13	104C
DecrementCounter_14	104D
DecrementCounter_15	104E
DecrementCounter_16	104F
IncrementCounter_1	1050
IncrementCounter_2	1051
IncrementCounter_3	1052
IncrementCounter_4	1053
IncrementCounter_5	1054
IncrementCounter_6	1055
IncrementCounter_7	1056
IncrementCounter_8	1057
IncrementCounter_9	1058
IncrementCounter_10	1059
IncrementCounter_11	105A
IncrementCounter_12	105B
IncrementCounter_13	105C
IncrementCounter_14	105D
IncrementCounter_15	105E
IncrementCounter_16	105F
ResetCounter_1	1060
ResetCounter_2	1061
ResetCounter_3	1062
ResetCounter_4	1063
ResetCounter_5	1064
ResetCounter_6	1065
ResetCounter_7	1066
ResetCounter_8	1067
ResetCounter_9	1068
ResetCounter_10	1069

Task Manager Action Name	Action Tag
ResetCounter_11	106A
ResetCounter_12	106B
ResetCounter_13	106C
ResetCounter_14	106D
ResetCounter_15	106E
ResetCounter_16	106F
ExternalChannelSelectDisable	1810
ExternalChannelSelectEnable	1820
ExternalChannelSelectToggle	1830
ClearFlag_1	1C10
ClearFlag_2	1C11
ClearFlag_3	1C12
ClearFlag_4	1C13
ClearFlag_5	1C14
ClearFlag_6	1C15
ClearFlag_7	1C16
ClearFlag_8	1C17
ClearFlag_9	1C18
ClearFlag_10	1C19
ClearFlag_11	1C1A
ClearFlag_12	1C1B
ClearFlag_13	1C1C
ClearFlag_14	1C1D
ClearFlag_15	1C1E
ClearFlag_16	1C1F
SetFlag_1	1C20
SetFlag_2	1C21
SetFlag_3	1C22
SetFlag_4	1C23
SetFlag_5	1C24
SetFlag_6	1C25
SetFlag_7	1C26
SetFlag_8	1C27
SetFlag_9	1C28
SetFlag_10	1C29
SetFlag_11	1C2A
SetFlag_12	1C2B
SetFlag_13	1C2C
SetFlag_14	1C2D
SetFlag_15	1C2E
SetFlag_16	1C2F
ToggleFlag_1	1C30
ToggleFlag_2	1C31

Task Manager Action Name	Action Tag
ToggleFlag_3	1C32
ToggleFlag_4	1C33
ToggleFlag_5	1C34
ToggleFlag_6	1C35
ToggleFlag_7	1C36
ToggleFlag_8	1C37
ToggleFlag_9	1C38
ToggleFlag_10	1C39
ToggleFlag_11	1C3A
ToggleFlag_12	1C3B
ToggleFlag_13	1C3C
ToggleFlag_14	1C3D
ToggleFlag_15	1C3E
ToggleFlag_16	1C3F
IntercomDisable	2010
IntercomEnable	2020
IntercomToggle	2030
LoopbackDisable	2410
LoopbackEnable	2420
LoopbackToggle	2430
PowerSaveDisable	2810
PowerSaveEnable	2820
PowerSaveToggle	2830
ReceiverDisable	2C10
ReceiverEnable	2C20
ReceiverToggle	2C30
StartTimer_1	3070
StartTimer_2	3071
StartTimer_3	3072
StartTimer_4	3073
StartTimer_5	3074
StartTimer_6	3075
StartTimer_7	3076
StartTimer_8	3077
StartTimer_9	3078
StartTimer_10	3079
StartTimer_11	307A
StartTimer_12	307B
StartTimer_13	307C
StartTimer_14	307D
StartTimer_15	307E
StartTimer_16	307F
StopTimer_1	3080

<b>Task Manager Action Name</b>	<b>Action Tag</b>
StopTimer_2	3081
StopTimer_3	3082
StopTimer_4	3083
StopTimer_5	3084
StopTimer_6	3085
StopTimer_7	3086
StopTimer_8	3087
StopTimer_9	3088
StopTimer_10	3089
StopTimer_11	308A
StopTimer_12	308B
StopTimer_13	308C
StopTimer_14	308D
StopTimer_15	308E
StopTimer_16	308F
TransmitterDisable	3410
TransmitterEnable	3420
TransmitterToggle	3430
TXKEYDisable	3810
TXKEYEnable	3820
TXKEYToggle	3830
OverTheAirAlarmDisable	4010
OverTheAirAlarmEnable	4020
OverTheAirAlarmToggle	4030
OverTheLineAlarmDisable	4410
OverTheLineAlarmEnable	4420
OverTheLineAlarmToggle	4430
SubaudDecodeDisable	4810
SubaudDecodeEnable	4820
SubaudDecodeToggle	4830
SubaudEncodeDisable	4C10
SubaudEncodeEnable	4C20
SubaudEncodeToggle	4C30
CWIDDisable	5010
CWIDEnable	5020
CWIDToggle	5030
LineControlledBaseDisable	5410
LineControlledBaseEnable	5420
LineControlledBaseToggle	5430
TalkThroughRepeaterDisable	5810
TalkThroughRepeaterEnable	5820
TalkThroughRepeaterToggle	5830
DeactivateDigitalOutput_1	5C10

<b>Task Manager Action Name</b>	<b>Action Tag</b>
DeactivateDigitalOutput_2	5C11
DeactivateDigitalOutput_3	5C12
DeactivateDigitalOutput_4	5C13
DeactivateDigitalOutput_5	5C14
DeactivateDigitalOutput_6	5C15
DeactivateDigitalOutput_7	5C16
DeactivateDigitalOutput_8	5C17
ActivateDigitalOutput_1	5C20
ActivateDigitalOutput_2	5C21
ActivateDigitalOutput_3	5C22
ActivateDigitalOutput_4	5C23
ActivateDigitalOutput_5	5C24
ActivateDigitalOutput_6	5C25
ActivateDigitalOutput_7	5C26
ActivateDigitalOutput_8	5C27
ToggleDigitalOutput_1	5C30
ToggleDigitalOutput_2	5C31
ToggleDigitalOutput_3	5C32
ToggleDigitalOutput_4	5C33
ToggleDigitalOutput_5	5C34
ToggleDigitalOutput_6	5C35
ToggleDigitalOutput_7	5C36
ToggleDigitalOutput_8	5C37
TxRelayDisable	6010
TxRelayEnable	6020
TxRelayToggle	6030
AuxiliarySupplyDisable	6410
AuxiliarySupplyEnable	6420
AuxiliarySupplyToggle	6430

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