

TW-MEC-01

GUIDE TO THE KEYBOARD - DISPLAY INTERFACE SYSTEM TAURUS SERIES



INTRODUCTION

This is a guide for the configuration and management of Taurus wireless systems through the keyboard - display interface system present on **TW-MEC-01** network devices.

Another way to configure Taurus systems is through the TauREX software configuration tool; for the TauREX software and its user guide refer to your system supplier.

SYSTEM COMPATIBILITY

Conventional control panels are compatible with TW-MEC-01 modules. Check this issue with your system and the control panel's supplier.

OVERVIEW OF TAURUS SYSTEMS

Taurus systems are always composed by a central node device (TW-MTI-01 or TW-MEC-01), a certain number of child devices (detectors, call points, sounders, etc.) and, if the wireless coverage area needs to be extended, one or more expansion nodes (TW-ME-01).

The model of the central node selected by the installer depends by the control panel's type; if the control panel is intelligent and uses the Vega protocol, a **TW-MTI-01** model has to be chosen; if the control panel is conventional, the choice must fall on the **TW-MEC-01** model.

Communication ranges of the wireless devices are limited: add TW-ME-01 devices to the system to cover completely the fire protected area.

Child devices are linked to TW-MTI-01, TW-MEC-01 and TW-ME-01 network devices.

Purpose of the installation process is to integrate the wireless Taurus system with the control panel.

SYSTEM LIMITATIONS

Maximum number of network devices	16		Table 1
Maximum number of TW-ME-01 s in cascade connection	8		
Maximum number of child devices linkable to a single network device	32		
Maximum number of child devices linkable to a single system	128	Please mind that your installation standards may limit the maximum number of fire security devices per single wireless system	\bigwedge

WIRELESS CHANNELS

The Taurus system has a total of 66 wireless channels or frequency ranges that can be used for communicating data.

Wireless channels in TauREX software and on network device's user displays are indicated by decimal numbers.

These channels are paired in fixed predefined patterns (see appendix A at the end of this manual for their list).

Channel pairs have specialized uses:

- Field channels: used by network devices (TW-MTI-01, TW-MEC-01 and TW-ME-01) for communicating with their child devices (detectors, call points, etc.).
- Network channels: used by network devices (TW-MTI-01, TW-MEC-01 and TW-ME-01) to communicate between each other.

All child devices use a local field channel pair.

All network devices use a local field channel pair and a global network channel pair.

The reason for this channel's pairing system policy stems from the necessity to grant wireless connection security by having a "spare channel" in case the other one fails.



THE UNIQUE IDENTIFIER

The unique identifier is a 8 alphanumeric character sequence that univocally identifies every Taurus device that comes out of the factory; it is written in every device's permanent memory.

Unique identifier can be indicated as UID, UUID or Unique ID.

It is labelled below the QR code on each Taurus device and it is encoded in the QR code.

CREATING WIRELESS SYSTEMS WITH ONLY THE CENTRAL NODE

When a system with only a central node (TW-MTI-01, TW-MEC-01) is created, the central node requires just the programming of system parameters and the linking of its local child devices.

CREATING WIRELESS SYSTEMS WITH THE CENTRAL NODE AND EXPANDERS

Creating a Taurus system with a central node and one or more expanders is a bit more complex but not difficult; some actions are added to the things that need to be done:

- Program the global Taurus system's settings on the central node.
- Add "virtual" expanders into the central node's memory.
- Link the expander devices to the system. During this operation, all possible messaging routes between expanders and the central node are
 discovered and programmed into the system. This operation is indicated on the user display as "AutoLearn / Discovery". This operation is
 completely automatic.
- Add "virtual" child devices into the central node's memory.
- Link the child devices to their network devices.

ROUTING

Examples of possible message routing paths between Expander # 2 and the central node can be as the following:



- Certain possible routes will not be used depending on the radio visibility of certain intermediate network / node devices.

- Routes can use one or both channels of the system's channel pair. As an example: a segment of the route can use channel 1, another segment can use the channel 2 and a further other segment can use channel 1 and 2 alternatively.
- Messages are sent through routes in either direction.
- The user cannot establish routes directly in any way.
- The user cannot have a graphic schematic overview of the discovered route system (this is possible through TauREX software, though).
- The user cannot disable selected segments of automatically discovered routes (this is possible only through TauREX software, though).

CHILD DEVICES LINKING

Child device's linking is the action of bonding a detector, call point, sounder, etc. to a parent network device (TW-MTI-01, TW-MEC-01, TW-MEC-01).

A child device will communicate exclusively with its assigned parent network device.

A child and its parent device have in common one field channel pair (two wireless channels).

Through the keyboard - display user interface you can link:

- one single child device; "Link by switch" linking mode is triggered directly by the user through the child device's onboard switch.
- One or more child devices; "Wakeup link" linking mode is triggered by the user through the central node's keyboard display. Every link
 operation is triggered for every child device by acting on the central node's user interface.

LINK BY SWITCH

You can link one single child device, individually.

You make the system search for the child device, then you manually trigger linking by using the switch mounted on the child device.

WAKEUP LINK

Child devices are all set manually in a particular state through their onboard switch; their unique identification code has been memorized, manually, in the central node memory; linking is triggered, manually, from the keyboard - display of the central node for each child device.

On all child devices, you act on the switch only at the beginning of the operation.



System and devices setting and management is only possible from the central node of the Taurus system (TW-MTI-01, TW-MEC-01).



You can use TW-ME-01's user interface only for local diagnostic purposes and for setting the device in "Discovery mode".





Keypad buttons are:

- Up Pulls up the display's menu selection. If applied to a value, the selected digit is increased.
- **Down** Pushes down the display's menu selection. If applied to a value, the selected digit is decreased.
- Left Returns to the previous menu. If editing a value, sets the cursor to the left digit.
- Right
 Enters into the next submenu.

 Some options require exclusively the "Enter" key to gain access to the next submenu.

 If editing a value, sets the cursor to the right digit.
- Enter Enters into the next submenu. Confirms the selected setting.
- Exit Returns to the previous menu.

THE USER'S DISPLAY

In a normal condition (no faults and no fire alarms) the display will look like this:

	Sys: 037
	N: 09/45
TM-ConvExp	F: 55/25

Displayed data has the following meaning:

TM-ConvExp Indicates that this device is a TW-MEC-01.

- Sys: 037 Indicates the number that identifies the Taurus wireless system (system code); in this case 037.
- N: 09/45 "Network" channels; system-wide wireless network numbered channels that are used by this network device to exchange data with the other network devices of the system; in this example, channel 9 and channel 45 are indicated.
- F: 55/25 "Field" channels; local wireless network numbered channels that are used by this network device to exchange data with local child devices; in this example, channel 55 and channel 25 are indicated.

SETTING SYSTEM PARAMETERS

System parameters (system code, channels for the network devices...) can be set as follows:



[Edit system settings]

•••

The [Edit system settings] window permits to select and edit the following system parameters:

[System code]	This is the system identification number. Values range from 1 to 254.
[Net Channels]	Here you can select the network channel pair. Standard pair values are found in appendix A at the end of the manual.
[External jamming]	Display Only: when external radio jamming occurs, the event is notified only on the display. Generate Fault: when external radio jamming occurs, the event is notified to the control panel.
[Tone period [s]]	Timespan value used for the purpose of synchronizing the output of the sounders. Refer to the tables in appendix C to obtain the correct value to insert in this field. Values range from 1 to 7.
[Default tone]	Primary tone: Taurus sounders, when activated, emit the preselected tone number from the primary tone set. Secondary tone: Taurus sounders, when activated, emit the preselected tone number from the secondary tone set. Primary and secondary tone sets are better explained and listed on the Taurus sounder's instruction manuals.
[Edit password]	Password view: you can edit the numeric password value for viewing the settings of the device. Values range from 0000 to 9999. Password edit: you can edit the numeric password value for changing the settings of the device. Values range from 0000 to 9999.

The Save option when preceded by an arrow, permits you to save the changes made:

[Edit system settings] →Save





SETTING THE EXPANDER PARAMETERS - CENTRAL AND EXPANSION NODES

Setting the expander parameters permits you to specifically characterize the network device (TW-MTI-01, TW-MEC-01, TW-ME-01) you are installing or maintaining.



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SETTING THE EXPANDER PARAMETERS - CENTRAL AND EXPANSION NODES (CONTINUED)

[PSU	configuration]

TW-MTI-01, TW-MEC-01 and TW-ME-01 require EN 54-4 compliant power supply units; TW-MEC-01 can be power supplied by the control panel (as long as the power supply is EN 54-4 compliant). Power supply's input supervision signals can be enabled and characterized in the [PSU configuration] window.

Mains	Mains fault. Disable: no fault check; Open: fault raised when input signal is in high impedance; Low: fault raised when input signal is in a low state.
Batt fault	Battery fault. Disable : no fault check; Open : fault raised when input signal is in high impedance; Low : fault raised when input signal is in a low state.
Charger fault	Battery charger fault. Disable : no fault check; Open : fault raised when input signal is in high impedance; Low : fault raised when input signal is in a low state.
Batt O/C	Open battery circuit fault. Disable: no fault check; Open: fault raised when input signal is in high impedance; Low: fault raised when input signal is in a low state.

The Save option when preceded by an arrow, permits you to save the changes made:





On the contrary, TW-ME-01s in the system, if their settings are modified, need expander specific remote programming.

Remote expander programming is explained in this manual.



Saving setting's changes may require some further programming or linking actions, as requested by the device.

FURTHER ACTIONS MAY BE REQUIRED AFTER CHANGING CERTAIN SETTINGS

Modifications on system and expanders settings may imply that you will have to take further programming or re-linking actions.

These actions will be notified to you from the onboard interface, nevertheless some words will be spent here:

- if you change certain system settings, all expanders need a programming action to be performed on each of them.
- If you change certain expander settings that are not expander 1 (that is not the central node), you will need to perform a "program expander"
 action for that expander; programming is not automatic and must be made manually.
- Modification of the field channel pair on a network device, makes necessary to program that network device and link again its child devices (if any, already linked).
- Modification of the field channel pair of the central node, makes necessary to link again its child devices (if any, already linked).

Notification for further actions follows the selection of the Save command and is notified to the user via the following screens:

- system settings change:

Save will require to program all expander

Yes No

All expanders need to be programmed.

- Remote expander (not expander 1, the central node) settings change:

Save w new pr	ill requi ogram	ire
	Yes	No
That specific	expander	needs programming

- Field channel pair of a remote expander modified:



- Field channel pair of the central node modified:

Save will require new link.

Yes No

Link the central node's child devices again.

Yes and No options mean:

Yes No You confirm your changes.

You do not confirm the changes you made. You can discard them by exiting the changes menu.



PROGRAMMING A REMOTE EXPANDER

After remote expander's settings have been modified, follow this procedure to complete the modification with its appropriate programming action:



ADDING AND LINKING DEVICES

In order to add one or more devices to the Taurus system, perform the following steps in sequence:

- 1) Add one or more virtual devices to the system.
- 2) Link the real device or devices to the system.

ADDING A VIRTUAL DEVICE

To add a device:



The Select Exp. By Num. and the Sel. by Virtual addr. options permit you to select a specific network device (central node included).

Select Exp. By Num. The required network device is searched through its sequential number (1 to 16).

Sel. by Virtual addr. The required network device is searched through its virtual address.

You will use one of the following two windows:

Select expander Expander:1 MGGG0000 Children: 0

then:

[Set device params]

-

Select virtual address Address: 1 MGGG0000 Children: 0

ADDING A VIRTUAL DEVICE (CONTINUED)

The [Set device params] window permits you to change these parameters:

Туре	The type of the device that has to be added (detector, call point). See appendix B at the end of the manual.
Subtype	The specific type of device: if Type is a Detector , the subtype can be, for example, Optical . See appendix B at the end of the manual.
UUID	Indicates the specific unique identifier of the device. If you will be linking a single device "by switch", specifying this value is not necessary. If you are linking through "wake up", this value is mandatory.
Virtual address	This value is automatically assigned to the virtual device according to the virtual address of the TW-MEC-01 (this is normally 1); nevertheless you can specify another address, as required. Values span from 2 to 240.
LED Communication	Child device's LED blinks every time there is a communication with its parent network device. With Yes this feature is enabled. With No this feature is disabled. Take into account that LED activity runs out the child device's batteries and you will need to change them more often.
LED Fault	Child device's LED switches on in case of a fault. With Yes this feature is enabled. With No this feature is disabled. Take into account that LED activity runs out the child device's batteries and you will need to change them more often. Even if this feature is disabled, fault messages will be routed to the control panel just the same.
Link fault time	This value specifies the amount of time after which the parent network device raises a link fault for this child device. Values span from 180 to 255 seconds.
Opt. Ch. Sens.	Used only for optical detectors. You can set here the alarm sensitivity level for environmental smoke detection. Can be High, Medium or Low .
Output Ch. En.	Used only for output modules. You can enable or disable here the 12V / 24V output channel. With Yes this channel is enabled, otherwise No disables it.
Out. Supervised	Used only for output modules. Enables or disables the supervision on the 12V / 24V output channel. With Yes the supervision feature is enabled, otherwise No disables it. If supervision is enabled, short / open events are signalled to the control panel.
Out. Voltage	Used only for output modules. Using this option you can set the voltage of the 12V / 24V output channel. 12V for 12 volts or 24V for 24 volts.
Relay Ch. En.	Used only for output modules. Here you can enable or disable the relay output channel. With Yes this channel is enabled, otherwise No disables it.
Rel. Supervised	Used only for output modules. Enables or disables the supervision on the relay output channel. With Yes the supervision feature is enabled, otherwise No disables it. If supervision is enabled, short / open events are signalled to the control panel.



According the device type / subtype you select, the set of personalization options vary.

The Save option when preceded by an arrow, permits you to save the child device's virtual profile:



You can now link the child device to the system, but if needed you can postpose this operation. It is possible for you to modify or delete the recorded devices; these operations are described in this manual.

LINKING A REAL DEVICE - LINK BY SWITCH

A child device is made part of the Taurus system only through the linking operation.

After a virtual child device has been added, perform the following procedure:



LINKING A REAL DEVICE - WAKEUP LINK

A child device is made part of the Taurus system only through the linking operation.

After one or more virtual child devices have been added, perform the following procedure:

1) Be sure that the child device or all the child devices you intend to link through "wakeup mode" are all powered up, unlinked, reset and their switch set in "wakeup" position (OFF or opposite the ON position). The use of the child device's switch, its power on and

troubleshooting procedures are explained on the child

- 2) Virtual child devices must have the unique identifier code inserted.
- 3) Perform the following procedure on the keyboard display system:



[Link device] Link by switch Wakeup link

Select the Wakeup link option.

LINKING A REAL DEVICE - WAKEUP LINK (CONTINUED)

Linking for the selected device starts:





DELETING A DEVICE FROM THE SYSTEM

You can delete devices from the system, either virtual or linked.



REPLACING A DEVICE - THROUGH LINK BY SWITCH

When you need to replace a device:



(17

REPLACING A DEVICE - THROUGH WAKEUP LINK

When you need to replace a device:



REPLACING A DEVICE - THROUGH WAKEUP LINK (CONTINUED)

Device replacement continues automatically:



device's manual.

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ADDING A VIRTUAL EXPANDER

The first step of creating a system with one or more expanders consists in adding virtual expanders to the central node; a similar operation was done with the child devices.



In the last window you are requested to insert the unique identification (UUID) of the expander device you want to add to the system; use the **Up**, **Down**, **Left**, and **Right** keys; when you have finished, press **Enter**.

If the virtual expander is successfully added, the following acknowledgment window appears:

[Add Expander] Expander added !

Press button to exit

Repeat this procedure for every TW-ME-01 you need to add to your system.

LINKING A REAL EXPANDER - AUTOLEARN / DISCOVERY

Second and last step for adding a TW-ME-01 is the "Autolearn / discovery" operation.

The real device (or devices) will be effectively linked to the system:



The last window requests you to select the wireless channel that will be used for this "Autolearn / discovery" operation.

You can select channel A, B or C.

Use the less congested one. If channel A gives problems then use channel B; if channel B gives problems then use channel C.

It is suggested you use the survey kit for Taurus systems (TW-SKT-01) to find out which of the three channels is freer.

The "discovery channel" you set here must be the same "discovery channel" you set on the other TW-ME-01 devices.

Made the "discovery channel" selection press Enter:

Is network 2nd path discovery required?

Yes no

It is suggested to select Yes that requires mandatorily a backup route for the wireless messages to and from every single TW-ME-01 and the central node. Press Enter.

Ensure every expander is in discovery mode, then press select to start discovery

You are now requested to set all involved TW-ME-01 in "Discovery mode"; refer to TW-ME-01's interface guide for this procedure.

Set all involved TW-ME-01s in "Discovery mode".

Press Enter.



LINKING A REAL EXPANDER - AUTOLEARN / DISCOVERY (CONTINUED)

Autolearn / discovery starts:



The involved TW-ME-01 devices are now integrated in the Taurus system.



DELETING AN EXPANDER FROM THE SYSTEM

If you want to delete an expander, whether linked or not linked, follow this procedure:



If you delete one TW-ME-01 but you have got other of them in the system, you will have to reperform an "Autolearn / discovery" operation, as described in this manual.



If you delete one TW-ME-01 but you have got other of them in the system, you will have to reperform an "Autolearn / discovery" operation, as described in this manual.

EVENT NOTIFICATION ON THE DISPLAY

A series of event types are notified on the display. Event's textual data is accompanied with its corresponding pictogram on the top of the display.

	٠	
n: 001 / 002 Addr. 004 - Ri Detector Opti Alarm	F.03:01 cal	
This example indicate	s a fire event for a child device.	
n:	The sequential number of the even sequentially. Scroll through the notifications we Read as: event 1 of a total of 2 e	nt and the total items of the event queue; more than one event can be visualized h the Up and Down keys. ents.
Addr RF	This row indicates which device Addr. is the virtual address. RF is the expander's sequential expander (in this case 1).	affected by the event. umber (in this case 3) and the sequential number of the child device relative to that
Detector Optical	The device type affected by the	vent.
Alarm	The child device is in alarm.	
n: 002 / 002 RF Addr.03:00 Taurus Expar Tamper	l D Ider	
This example indicate	s a tampering attempt on expande	3.
n:	The sequential number of the ev	nt and the total items of the event queue; more than one event can be visualized

 n:
 The sequential number of the event and the total items of the event queue; more t sequentially.

 Scroll through the notifications with the Up and Down keys.
 Read as: event 2 of a total of 2 events.

 RF Addr.
 This row indicates which device is affected by the event.

 RF Addr.
 RF Addr. is the expander's sequential number (in this case 3).

Taurus Expander The device type affected by the event.

Tamper The expander front cover has been opened, triggering this tampering attempt notification.

Pictograms are shown for giving an immediate idea of the nature of the problem:



Picture 5

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APPENDIX A - STANDARD CHANNEL PAIRS

In this appendix section you can find the lists of the standard channel pairs used by the Taurus system.

Field channel pa	airs	
1	37	
2	38	
3	39	
4	40	
5	41	
6	42	
7	43	
8	44	
17	53	
18	54	
55	25	
56	26	
57	27	
58	28	
59	29	
60	30	
61	31	
62	32	
63	33	
64	34	
65	35	
66	36	Table 2

Not used channels	
19	
20	
21	
22	
23	
24	Table 4

. . . .

	Network channel pairs		
	9	45	
	10	46	
	11	47	
	12	48	
	13	49	
	14	50	
	15	51	
Table 3	16	52	

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APPENDIX B - CHILD DEVICE'S TYPES AND SUBTYPES

On the keyboard - display interface, child devices are identified through the following Type and Subtype values:

Туре	Subtype	Model's commercial code	
Detector	Optical	TW-DO-01	
Detector	Multicriteria	TW-DM-01	
Detector	Thermal ROR	TW-DT-01	
Detector	Thermal HT	TW-DT-01	
Call point	Normal	TW-CP-R-01	
Input module	Supervised	TW-MI-S-01	
Sounder	Wall SND	TW-MWSO-01 + CWS100	
Sounder	Wall SND VAD	TW-MWSO-01 + CWS100-AV	
Sounder	Base SND	TW-BS-01	
Sounder	BS red VAD	TW-BSB-23R-01	
Sounder	BS white VAD	TW-BSB-23W-01	
Output module	Supervised	TW-MO-SB-01	

Table 5

APPENDIX C - "TONE PERIOD [S]" OPTION SETTING

The following table is valid for the TW-BS-01, TW-BSB-23R-01 and TW-BSB-23W-01:

Tone	Tone designation	Tone pattern description	DIP switch	Tone period [s] setting
0	Silent	No sound	11111	2
1	Warble Tone	800Hz for 500ms, then 1000Hz for 500ms	11101	2
2	Continuous tone	970Hz continuous tone	01011	2
3	Slow Whoop (Dutch)	500-1200Hz for 3500ms, then off for 500ms	10101	4
4	German DIN tone	1200-500Hz swept every 1000ms (1Hz)	00111	2
5	Alternate HF slow sweep	2350-2900Hz swept every 333ms (3Hz)	10010	2
6	Alternative warble	800Hz for 250ms, then 960Hz for 250ms	11110	2
7	Alternative warble	500Hz for 250ms, then 600Hz for 250ms	11100	2
8	Analogue sweep tone	500-600Hz swept every 500ms (2Hz)	10100	2
9	Australian Alert (intermittent tone)	970Hz for 625ms, then OFF for 625ms	10001	2 (*)
10	Australian Evac (slow whoop)	500-1200Hz sweep for 3750ms, then OFF for 250ms	10110	4
11	FP1063.1-Telecom	800Hz for 250ms, then 970Hz for 250ms	00001	2
12	French tone AFNOR	554Hz for 100ms, then 440Hz for 400ms	00101	2
13	HF Back up interrupted tone	2800Hz for 1s, then OFF for 1s	11011	2
14	HF Back up interrupted tone – fast	2800Hz for 150ms, then OFF for 150ms	11001	6
15	HF Continuous	2800Hz continuous	01001	2
16	Interrupted tone	800Hz for 500ms,then OFF for 500ms	01111	2
17	Interrupted tone medium	1000Hz for 250ms, then OFF for 250ms	01101	2
18	ISO 8201 LF BS5839 Pt 1 1988	970Hz for 500ms, then OFF for 500ms	01110	2
19	ISO 8201 HF	2850Hz for 500ms, then OFF for 500ms	01100	2
20	LF Back up Alarm	800Hz for 150ms, then OFF for 150ms	11010	6
21	LF Buzz	800-950Hz swept every 9ms	01010	2 (*)
22	LF Continuous tone BS5839	800Hz continuous	11000	2
23	Siren 2 way ramp (long)	500-1200Hz rising for 3000ms, then falling for 3000ms	00000	6
24	Siren 2 way ramp (short)	500-1200Hz rising for 250ms, then falling for 250ms	00010	2
25	Swedish all clear signal	660Hz continuous	00100	2
26	Swedish Fire signal	660Hz for 150ms, then OFF for 150ms	00110	6
27	Sweep tone (1 Hz)	800-900Hz swept every 1000ms	10111	2
28	Sweep tone (3 Hz)	800-970Hz swept every 333ms (3Hz)	10011	2
29	Sweep tone (9 Hz)	800-970Hz swept every 111ms (9Hz)	01000	2
30	US Temporal Pattern HF	(2900Hz for 500ms ON, 500ms OFF) x3, then 1500ms OFF	00011	2 (*)
31	LF Sweep (Cranford tone)	800-1000Hz swept every 500ms (2Hz)	10000	2

Table 6

(*) The devices, playing this tone, cannot be acoustically synchronized. On the contrary, the visual signals can be synchronized, always (**TW-BSB-23R-01** and **TW-BSB-23W-01**).

The following table is valid for the TW-MWSO-01 + CWS100 and the TW-MWSO-01 + CWS100-AV:

Tone	Tone designation	Tone pattern description	DIP switch	Tone period [s] setting
1	Warble Tone	800Hz for 500ms, then 1000Hz for 500ms	11101	2
2	Continuous tone	970Hz continuous tone	01011	2
3	Slow Whoop (Dutch)	500-1200Hz for 3500ms, then off for 500ms	10101	4
4	German DIN tone	1200-500Hz swept every 1000ms (1Hz)	00111	2
5	Alternate HF slow sweep	2350-2900Hz swept every 333ms (3Hz)	10010	2
6	Alternative warble	800Hz for 250ms, then 960Hz for 250ms	11110	2
7	Alternative warble	500Hz for 250ms, then 600Hz for 250ms	11100	2
8	Analogue sweep tone	500-600Hz swept every 500ms (2Hz)	10100	2
9	Australian Alert (intermittent tone)	970Hz for 625ms, then OFF for 625ms	10001	2 (*)
10	Australian Evac (slow whoop)	500-1200Hz sweep for 3750ms, then OFF for 250ms	10110	4
11	Alternative warble	990Hz for 250ms, then 665Hz for 250ms	00001	2
12	French tone AFNOR	554Hz for 100ms, then 440Hz for 400ms	00101	2
13	HF Back up interrupted tone	2800Hz for 1s, then OFF for 1s	11011	2
14	HF Back up interrupted tone – fast	2800Hz for 150ms, then OFF for 150ms	11001	6
15	HF Continuous	2800Hz continuous	01001	2
16	Interrupted tone	800Hz for 500ms, then OFF for 500ms	01111	2
17	Interrupted tone medium	1000Hz for 250ms, then OFF for 250ms	01101	2
18	ISO 8201 LF BS5839 Pt 1 1988	970Hz for 500ms, then OFF for 500ms	01110	2
19	ISO 8201 HF	2850Hz for 500ms, then OFF for 500ms	01100	2
20	LF Back up Alarm	800Hz for 150ms, then OFF for 150ms	11010	6
21	LF Buzz	800-950Hz swept every 9ms	01010	2 (*)
22	LF Continuous tone BS5839	800Hz continuous	11000	2
23	Silent	No sound	11111	2
24	Siren 2 way ramp (long)	500-1200Hz rising for 3000ms, then falling for 3000ms	00000	6
25	Siren 2 way ramp (short)	500-1200Hz rising for 250ms, then falling for 250ms	00010	2
26	Swedish all clear signal	660Hz continuous	00100	2
27	Swedish Fire signal	660Hz for 150ms, then OFF for 150ms	00110	6
28	Sweep tone (1 Hz)	800-900Hz swept every 1000ms	10111	2
29	Sweep tone (3 Hz)	800-970Hz swept every 333ms (3Hz)	10011	2
30	Sweep tone (9 Hz)	800-970Hz swept every 111ms (9Hz)	01000	2
31	US Temporal Pattern HF	(2900Hz for 500ms ON, 500ms OFF) x3, then 1500ms OFF	00011	2 (*)
32	LF Sweep (Cranford tone)	800-1000Hz swept every 500ms (2Hz)	10000	2

(*) The devices, playing this tone, cannot be acoustically synchronized. On the contrary, the visual signals can be synchronized, always (TW-MWSO-01 + CWS100-AV).