KPC-2.8 Touch Panel

Configuring the KPC-2.8

Unlike other Axium keypad products, a simple configuration performed locally on the KPC-2.8 is not possible. This is because such a simple local configuration would be severely restrictive and to unlock the touch panel's full potential, a much more capable PC-based designer application is required. The designer application is called Axium Keypad Manager 3.0.

In order to connect the KPC-2.8 to a computer running AKM, the front cover must be removed to expose the mini-USB port. Once connected, Windows will recognize that a new device has been connected and the USB installation process will commence. This process has been outlined at the end of the Axium Keypad Manager manual.

The Axium Keypad Manager is then used to configure the touch panel. This is covered in detail in the Axium Keypad Manager manual.

Learning Infra-red Commands

The KPC-2.8 is capable of learning infra-red commands. However IR commands are always learnt into buttons, which are not available on an unconfigured KPC. Therefore the first step of the process is to load a configuration with at least one button into the KPC. The configuration can be something basic for the sole purpose of providing some buttons serving as targets for the learning process, or it could be a finalized configuration, which is only missing a couple of commands that need to be learnt before it is complete.

Once a configuration is uploaded to the KPC, the next step is to select the page with the button(s), which is to be used for the learn process. Learn mode is then activated by pressing the learn button. This is a real physical button, accessible only when the front cover has been removed and is located below the display on the left hand side. Learn mode can be terminated at any time by pressing the learn button again. Once learn mode is activated, the message "Please select an on-screen button..." will flash and the user must then press a button on the page. The selected button will be linked to the learnt infra-red command. To assist in knowing which buttons have been programmed, all unprogrammed buttons are shown with a red "X" in their top left corners while in learn mode.

After a button has been selected, a square will be drawn around it and the message "Submit IR command. Press the learn button again to cancel." will appear. The remote control should be held at a distance of approximately 5 cm (2 inches) directly in front of the detector, which is located to the right of the learn button. Some experimentation may be required to find the best distance as weaker or stronger emitters may require a shorter or a longer distance from the detector to achieve optimum results. The learn process takes about one second and if all goes well, the message "Learn OK" is displayed, followed by the flashing prompt for selecting the next button for the next learn operation. Note that after a successful or failed learn operation, the user can immediately select the next button and does not need to wait for any messages to first disappear. Also note that learnt commands should always be tested as bad reception cannot always be detected.

The learnt infra-red command will be linked to the "Primary / short press" action of the selected button. "Long press" actions can only be programmed using Axium Keypad Manager. If buttons on other pages are to learn IR commands, the user must exit learn mode using the learn button and navigate to the required page and then re-select learn mode.

After commands have been learnt into a KPC, it makes sense to download the configuration into Axium Keypad Manager and save the learnt commands into the user database. The user must provide appropriate names for the newly learnt commands as they will initially be unnamed. Their allocations to buttons can assist in remembering which commands are which.

Applets

Applets are mini applications which extend the basic KPC firmware to provide interaction with specific types

of equipment. Most applets generally display the status of a connected piece of equipment and although they often provide interaction and feedback through their buttons classes and possibly through embedded volume controls, they have no user interface of their own that require any further explanation. However some applets have complex user interfaces and are even capable of navigating through their own menu/page structures. Setting up applets is explained in the Axium Keypad Manager manual.

Autonomic, iPort and Vantage DMM Applets

The Autonomic, iPort and Vantage DMM applet's user interface provides most of the same pages found on many other systems such as iPods and should require no further explanation. With the exception of the playback page, the pages all provide lists for selecting records from the database.

List Navigation

Moving the selection up and down through lists is accomplished by touching the screen and then moving up or down. If the list is longer than the number of visible lines, scrolling will begin when the selection is moved beyond the top or bottom of the list. The scrolling speed can be controlled by increasing or decreasing the distance of the touched position from the original position. To avoid excessive update times, only the selected line is updated while scrolling. Scrolling can be stopped at any time by releasing the screen, at which time the display will be updated in full. Alternatively the user can use up, down, page up and page down buttons if this method of navigation is preferred (use buttons with the corresponding applet specific button classes).

A thin scrollbar is displayed on the right hand side if the list is longer than the screen. The thumb size reduces as the list increases in length indicating the number of pages in the list. Touching the scrollbar will move the current position to anywhere in the list. This is possible despite the thin track width because touches extending up to about 5mm left of the scrollbar are also regarded as scrollbar input.

The selected record can be entered using the Enter button (i.e. a button with the "Enter" class) or by "double clicking" the applet. A double click is done by touching the applet twice in rapid succession in approximately the same place. It is not necessary to touch the selected record.

The applet's back button is used to return to the previous list. In playback mode this also returns from the playback page to the previously displayed list but after 10 seconds of idle time the playback page will be automatically re-selected. If the back button is pressed but there is no previous list to display, the previous page will be displayed and the applet will be unloaded.

Playback

If the selected record is a song and it is entered, playback will commence with the selected song in its play list. The play button will also start playback of the play list represented by the selected record. Playback is not possible from the top level menu.

Aside from starting playback, the play button can pause and resume playback when pressed briefly. Using a long press, playback will be stopped.

The track+ and track- buttons will skip to the next or previous track if pressed briefly. Using a long press, fast forward or rewind will occur as long as the button is held down. The Vantage DMM applet also responds to touches on the song progress bar.

Clock Applet

The clock applet does not display the time and date if it is not known. In this case use the mode and +/-buttons (use button classes under Applets – Clock) to set the time. The AX-R4 will retrieve the time and date from the internet if it has access and it is configured to do so.

Daylight saving is handled automatically using the local time zone definitions from the PC used for uploading the configuration to the KPC. If the rules defining when daylight saving begins or ends are changed, ensure that Windows is updated with the new time zone definitions (Windows Update should take care of this) and upload the configuration again.

The clock applet can be used as a screen saver which activates when the display is dimmed and disappears again when the display is touched. This is done by creating a page containing only the clock applet and assigning the page to the "Dim action" under "Settings". The dimmed brightness setting must be set high enough so that the clock can be seen. The "Screen saver mode" option in the applet should be selected and the applet frame should take up the entire page. This allows the time to be moved around on the display and reduces burn-in.

DLO Homedock Pro and ReQuest F-Series Applets

The DLO Homedock Pro and the ReQuest generates all of the menus and lists. This has the following implications:

- Navigation within lists and menus is the same as when controlling the device directly using its remote control. Navigating by touching the list, as is possible in the iPort, Autonomic and Vantage DMM applets, is not possible.
- Scrollbars for long lists are not available.
- Only a limited number lines of text are supported. Smaller applet frames are either not allowed or have certain restrictions. Large frames are not allowed because they are of no advantage.
- Not all of the options in the "Settings" menu on the DLO Homedock pro are relevant to the applet.
- The "Now Playing" menu option on the DLO Homedock pro has no function. However a playback screen will automatically be displayed when a track is playing. The "Left" button (which behaves much like a "Back" button) can be used to return to the previous menu in which case, the playback screen will be restored ten seconds after the last button press.

Vantage Lighting Applet

The Vantage applet does not provide a user interface or any feedback directly in the applet frame. Instead the applet performs background processing and all interaction is via buttons using appropriate buttons classes and volume controls, which are placed inside the applet frame.

The Vantage applet can execute tasks and can directly control loads. In both cases, the VID of the controlled object needs to be assigned in the button or volume control. In the case of tasks, the task triggers needed by the task need to be set up. Please refer to the Vantage documentation and InFusion Design Center for more information.

Applets with a Tuner Component

The Integra Receiver, Integra Tuner and the T118RDS applets have a list of radio frequencies, station names and images. This enables the applets to display station names (if this information is not already available from the device) and an image representing the radio station.

In order for the mapping to work, the frequency entered into the stations list must be written exactly how the frequency is displayed in the applet, e.g. "FM 91.80". The exception to this is in the Integra Receiver Applet when displaying a DAB station. Frequencies are not used in this case so instead the station name in the list must match the name reported by the receiver. An entry under "Frequency" is still required and must be "DAB" followed by something such as a number so that each entry is unique.

The images are assigned to a station by dragging the image into the area labelled "Icon" below the stations list.

Acknowledgements

The first applets were embedded into the KPC firmware. However it was soon clear that this approach, while easy to implement, was too restrictive and limited the total number of available applets to the amount of available program memory. In order to extend the KPC with a potentially unlimited number of applets, we needed a small but powerful virtual machine to execute external program code uploaded by AKM as part of a

configuration. The Pawn programming language was our final choice for providing this flexibility and we would like to acknowledge and thank Thiadmer Riemersma for his work in developing the ingenious Pawn programming language, compiler and abstract machine. See http://www.compuphase.com/pawn/pawn.htm for more information.