

# TMSTimer

## Custom Layout Documentation

### 1. Introduction

The "Custom Layouts" feature is an option available in TMSTimer commencing with version 4.06 (Beta 1). Custom layouts allow the user to control and customise what information about the timers is displayed on the screen and in what sequence that information is presented across the screen.

The built-in layout as shown below consists of: Screen line, Timer Name, Date and Time, Duration (in minutes), Type and Service with a logo if available.

TMSTimer v4.03		All by Time: 25 timers			Fri 6 Jul 07:42	
No.	Timer Name	Time and Date		Dur	Type	Service

From the example below, it can be seen that the custom layout now consists of: Screen line, Timer start date and time, End time, Duration, Frequency, File name, Logical Channel Number and Logo.

TMSTimer v4.06 (B1)		All by Time: 25 timers			Sat 21 Jul 16:03	
No.	Start Date/Time	End	Dur.	Freq	File Name	LCN Logo

This functionality is achieved by the use of "layout files". Each layout file contains the configuration information necessary to build a custom layout.

Details of the layout file format required to customise the timers layout display is described in section 2. A fully annotated example of a layout file and the screen that it produces is shown in section 4. A number of sample layouts are also included with the TAP.

#### 1.1 Installation

- Copy the TAP into the "/ProgramFiles" directory to start with. (Once your customised layout files have been created and tested, the TAP can be moved into "/ProgramFiles/AutoStart".)
- Copy at least "default.lay" into "/ProgramFiles/Settings/Custom Layouts". (There are some sample layout files bundled with the TAP.)
- Optionally, copy "name.lay", "service.lay" and "time.lay" into "/ProgramFiles/Settings/Custom Layouts". These layouts are used to display timers using the various sort options already built into TMSTimer.
- Optionally, if you have timers set to record from the AV input ports, copy the new "av-?????.jpg" files into your logos directory.

**Please Note:** In version 4.06 Beta 2, the location for the layout files has changed from "/ProgramFiles/Settings/TMSTimer" to "/ProgramFiles/Settings/Custom Layouts".

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## 2. Layout File Format

The layout file is a tab-delimited text file containing up to 3 fields per line in the following format:

**Key**<tab>**Alignment**<tab>**Parameter** [ <cr> ] <n1>

### 2.1 Key

<b>Key</b>	<b>Description</b>
COL	Column heading to be displayed at the top of the timer list on screen. The alignment and value of the heading must also be present.  Example: COL<tab>C<tab>Column One<n1>  Display a column with the title "Column One" centred within its boundary.
VAR	Field (variable) from a timer record to be displayed.  Example: VAR<tab>D<tab>NAME<n1>  Display the file name of the timer in the body of the display, aligned to the left with overflow dots "." to the right if the name is too long to fit the allocated column width.
LIT	Literal string to be displayed.  Example: LIT<tab>&<tab> : <n1>  Join the text ":" to the following VAR or LIT.
END	End of File marker. All other arguments are ignored.

### 2.2 Alignment

<b>Alignment Symbol</b>	<b>Description</b>
L	Align text to the left.
R	Align text to the right.
C	Align text to the centre.
D	Align text to the left with "." to the right for overflow.
&	A pseudo-alignment meaning concatenate with the following field or literal.

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### 2.3 Parameter

For "COL" keys, the parameter represents the column heading text.

For "LIT" keys, the parameter represents the value of the literal text to display.

For "VAR" keys, the parameter represents a field from the timers list as described in the following table:

Parameter	Description
NUM	Timer number. This is the internal array index.
LINE	Line number of the display. This is the line number on the screen.
DDD	Timer start short day name. "Mon", "Tue", etc.
DD	Timer start day of the month. "8".
DZ	Timer start day of the month, zero-padded. "08".
MM	Timer start month.
MMM	Timer start short month name. "Jan", "Feb", etc.
YYYY	Timer start date, full 4 digit year.
YY	Timer start date, last 2 year digits.
SH	Timer start hour (24hr format).
S2	Timer start hour (12hr format).
SZ	Timer start hour (12hr format), zero-padded.
SM	Timer start minute.
SP	AM/PM for timer start time.
EH	Timer end hour (24hr format).
E2	Timer end hour (12hr format).
EZ	Timer end hour (12hr format), zero-padded.
EM	Timer end minute.
EP	AM/PM for timer end time.
DUR	Full duration of the timer in whole minutes.
DUH	Duration of the timer in whole hours.
DHZ	Duration of the timer in whole hours, zero-padded.
DUM	Duration of the timer in remaining minutes to be paired with a "DUH".
FREQ	The abbreviated frequency of the timer. Daily=ED, Weekly=WK, etc.
TYPE	The type of timer. Rec=R, Play=P.
NAME	Timer file name, with the ".mpg" suffix removed. Note that the width allocated to the file name is what is left over from the total screen width once all of the other fields have been accounted for.
SNAM	Service name for the timer. The width of this column is determined by the widest service name of all of the services listed in the timers list.
SNnn	Truncated service name for the timer. "nn" represents the number of "W" characters to base the field width on.
S#	LCN for the timer. "AV", "CV" or "RGB" for AV timers.
#Z	LCN for the timer, zero-padded.
LOGO	LOGO.
TUNER	Tuner number for the timer.
NET	Network associated with the service.
UNIT	Unit ID for remote PVRs.

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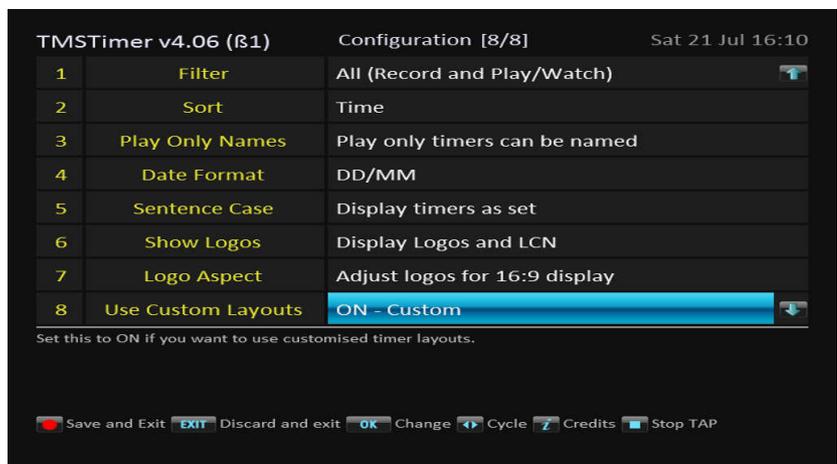
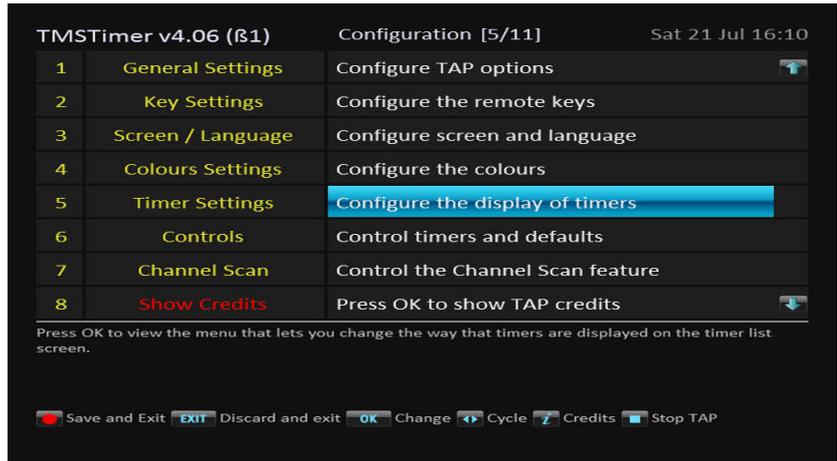
### 3. Enabling Custom Layouts

For minimal Custom Layouts functionality, "default.lay" must exist in the "/ProgramFiles/Settings/Custom Layouts" directory.

There are three other optional layout files, "time.lay", "service.lay" and "name.lay", one corresponding to each of the pre-defined sort sequences within TMSTimer. These files should also be placed in the "/ProgramFiles/Settings/Custom Layouts" directory. If none of these files exist, "default.lay" will be used. If none of the 4 recognised layout files are found, Custom Layouts will be disabled.

#### To enable Custom Layouts:

1. Ensure that you have copied your layout file(s) to the custom layouts directory.
2. Enter the TMSTimer configuration screen.
3. Select "5 Timer Settings".
4. Scroll down to "8 Use Custom Layouts".
5. Change the option from "OFF - Built-in" to "ON - Custom".
6. Press the "Save and Exit" button.

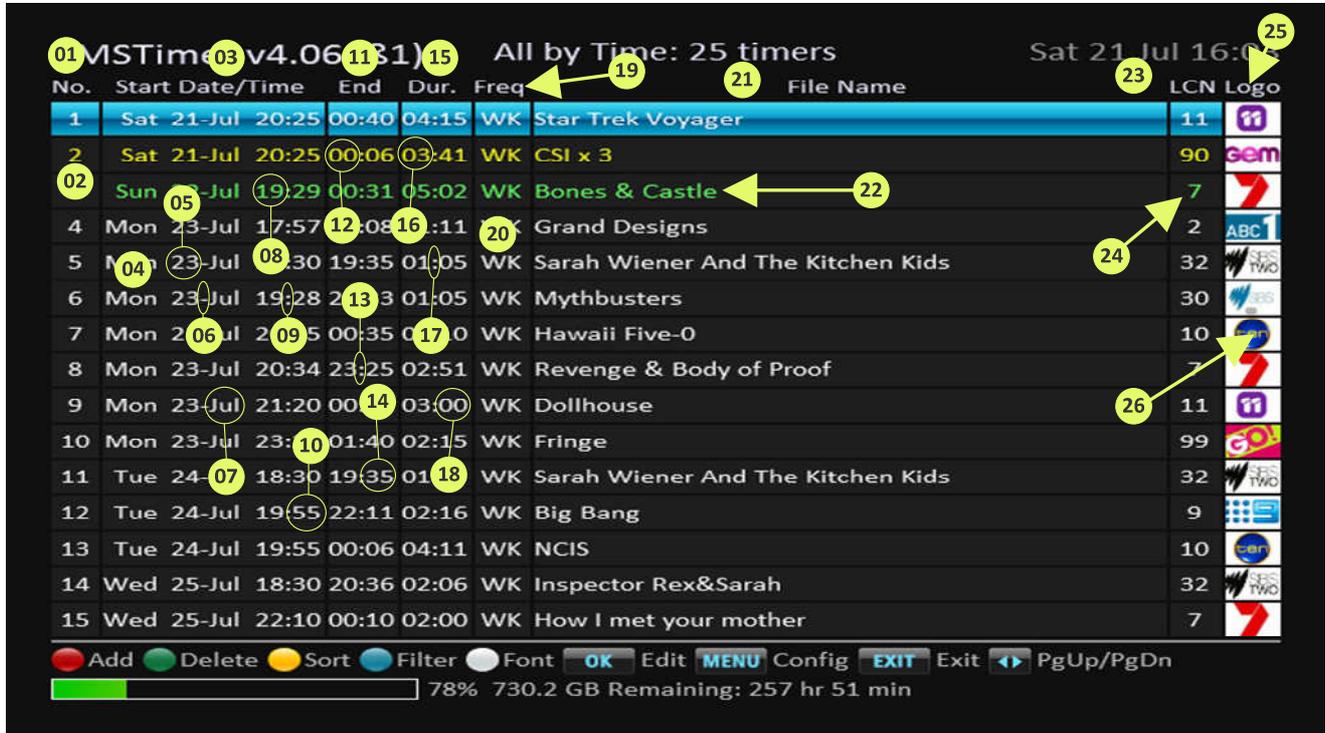


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### 4. Sample Layout file with Annotations

This section shows an annotated custom layout screen and the configuration line numbers of the elements required to create it.



Please note that in the following example "<tab>" represents an actual tab character within the layout file line. Also, blank lines are optional and ignored, they are only present for readability purposes.

#	Configuration Line	Explanation
01	COL<tab>L<tab>No .	Start a new left-aligned column title called "No."
02	VAR<tab>C<tab>LINE	Display the line number centre-aligned in the body of the list.
03	COL<tab>C<tab>Start Date/Time	Start a new centre-aligned column called "Start Date/Time".
04	VAR<tab>R<tab>DDD	Display the short day name of the timer start date right-aligned.
05	VAR<tab>&<tab>DZ	Join the zero-padded timer start date (day only) with the literal "-" and the timer start month (abbreviated format) and display with centre alignment.
06	LIT<tab>&<tab>-	
07	VAR<tab>C<tab>MMM	
08	VAR<tab>&<tab>SH	Join the timer start time (hour only) with the literal ":" and the time start time (minute only) and display with centre alignment.
09	LIT<tab>&<tab>:	
10	VAR<tab>C<tab>SM	
11	COL<tab>C<tab>End	Start a new centre-aligned column title called "End".
12	VAR<tab>&<tab>EH	Join the timer end time (hour only) with the literal ":" and the timer end time (minute only) and display with centre alignment.
13	LIT<tab>&<tab>:	
14	VAR<tab>C<tab>EM	
15	COL<tab>C<tab>Dur .	Start a new centre-aligned column title called "Dur.".
16	VAR<tab>&<tab>DHZ	Join the zero-padded timer duration (hour only) with the literal ":" and the timer duration (minute only) and display with right alignment.
17	LIT<tab>&<tab>:	
18	VAR<tab>R<tab>DUM	

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#	Configuration Line	Explanation
19	COL<tab>C<tab>Freq	Start a new centre-aligned column called "Freq".
20	VAR<tab>C<tab>FREQ	Display the timer frequency in the body of the list centre-aligned.
21	COL<tab>C<tab>File Name	Start a new centre-aligned column called "File Name".
22	VAR<tab>D<tab>NAME	Display the timer file name in the body of the list left-aligned with overflow "..." at the far right.
23	COL<tab>C<tab>LCN	Start a new centre-aligned column called "LCN".
24	VAR<tab>C<tab>S#	Display the service number (LCN) and display with centre alignment.
25	COL<tab>C<tab>Logo	Start a new centre-aligned column called "Logo".
26	VAR<tab>C<tab>LOGO	Display the service logo in the body of the list centre-aligned.
27	END<tab>C	End of file marker.

### 4.1 VARs/LITs and Cultural Preferences

Instead of trying to envision, and code for, every possible permutation in date/time formatting used by various cultures, fields like "Start Time", etc have been separated into their base sub-components (SH, SM, S2, SP, etc) so that they can be reassembled with the use of a "LIT" and "&" into a format that is more suited to the cultural preference of the user.

For example, this allows a start date of "25 December" to be displayed as "25-Dec" or "25/12", or "12/25" or "Dec, 25", or for a duration of 70 minutes to be displayed as "70" or "01:10" or "01h10", etc.

### 4.2 VARs/LITs and Linguistic Preferences

TMSTimer has in-built multi-lingual capabilities. The custom layouts activation menu item also supports the multi-lingual capability of TMSTimer.

The on-screen contents of the layout file are linguistically neutral in so far as TMSTimer will display any content within the "Parameter" of a "COL" or "LIT". For example a column containing the "Start Time" could easily be changed to "Startzeit" or "Aloitusaika", depending on the user's language preference.

### 4.3 Additional Logos

There are three additional logo files included with TMSTimer to cater for AV inputs.

"av-component.jpg" for timers recording from the component input, "av-composite.jpg" for timers recording from the composite input. "av-input.jpg" is used as a fallback if TMSTimer can determine that the timer is for an AV input, but is unable to determine which one.

If you have a specific satellite or cable TV receiver connected to your AV input port that you record from regularly, you could also consider replacing one or all of these logo files with a logo more suited to your satellite or cable provider.

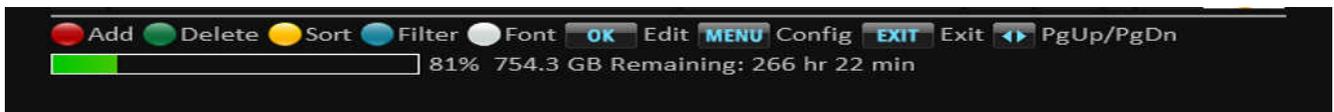
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### 5. Font Sizes

The TMSTimer built-in layout has 9 different font settings available.

- Large Name, Medium Time - 10 lines
- Medium Name, Medium Time - 10 lines
- Small Name, Medium Time - 10 lines
- Large Name, Small Time - 10 lines
- Medium Name, Small Time - 10 lines
- Small Name, Small Time - 10 lines
- Medium Name and Time - 15 lines
- Small Name, Small Time - 15 lines
- Small Name, Small Time - 20 lines



This feature is activated by using the white button whilst the timer list is being displayed. Pressing the white button will cycle through the various font sizes available.

When custom layouts are enabled, TMSTimer applies the fonts as per the usage applied to the built-in layout, however, because all fields are now effectively optional, some font options may display identically. For example, "Large Name, Medium Time" and "Medium Name, Medium Time" will display the same if there is no "NAME" field to display.

### 6. Troubleshooting Custom Layouts

#### 6.1 Custom Layouts enabled but not displaying

If you think you have custom layouts enabled and the built-in layout is still appearing, ensure that you have a layout file named "default.lay" in the "/ProgramFiles/Settings/Custom Layouts" directory. TMSTimer will automatically disable the custom layouts feature if it can not locate at least "default.lay", if this occurs, you will have to re-enable custom layouts.

As the name implies "default.lay" is the default layout used if no others are found. TMSTimer has the ability to sort timers by start time or service or timer name. When custom layouts are enabled, TMSTimer will first look for "time.lay" if your sort order is set to "time" or "service.lay" if your sort order is set to "service" or "name.lay" if your sort order is set to "name". If none of these layout files are found, TMSTimer will then try to open "default.lay". If "default.lay" is not found TMSTimer will disable custom layouts.

#### 6.2 Custom Layouts enabled but don't quite look right

There is only a finite amount of space available on the screen, but it is theoretically possible to construct a layout configuration file that contains too many fields to be correctly displayed on the screen. In addition to this, TMSTimer has the ability to display timers using 9 variations of font size and line spacing.

Try reducing the number of columns and fields that you are trying to display for your sort/font combination.

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### 6.3 Concatenated "VAR" and/or "LIT" producing strange results.

Where you have a series of "VAR" and/or "LIT" keys with a "&" alignment, you need to ensure that the last "VAR" or "LIT" in the series has an alignment other than "&" before you commence a new "COL".

For example, the following may produce erroneous results due to the fact that the "SNAM" field is concatenated with the following field, however, the following line is a "COL":

```
VAR<tab>&<tab>#Z
LIT<tab>&<tab><Space>
VAR<tab>&<tab>SNAM

COL<tab>C<tab>Logo
VAR<tab>C<tab>LOGO
```

### 6.4 PVR constantly rebooting

TMSTimer does some basic testing for malformed layout files, but this testing is not exhaustive. It is theoretically possible that a malformed layout file will cause the PVR to enter a continuous load/crash/reboot cycle.

Should this happen, prevent the TAPs in "/ProgramFiles/AutoStart" from running by pressing the zero key on the remote control unit during boot-up and then remove all of the "LAY" files from the "/ProgramFiles/Settings/Custom Layouts" directory on the PVR.

Make sure that the layout file that you have created is **tab delimited**.

### 6.5 Logos not showing

TMSTimer looks for logo files in 3 locations:

- /ProgramFiles/Settings/Logos"
- /PhotoFiles/Logos
- /PhotoFiles/Settings/Logos

Ensure that your logos are located in one of these directories.

If your logo is located in one of these directories and it still does not display, ensure that it is not corrupt, is in JPG format and the dimensions are not too big.

### 6.6 Field appears too wide

The width of a field is the larger of either the width of its content or the width of its column title. If a field seems too wide for its contents, try reducing the length of its column title.

### 6.7 Log file

TMSTimer also has the ability to log activity into "/ProgramFiles/Settings/Logs/TMSTimer.log". The custom layouts module is designed to write status, warning and error messages to this log file as a layout file is loaded. Enabling logging and then reviewing these logs may also provide some useful troubleshooting information. It is recommended that logging be disabled once troubleshooting is complete.

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### 7. Remote Units

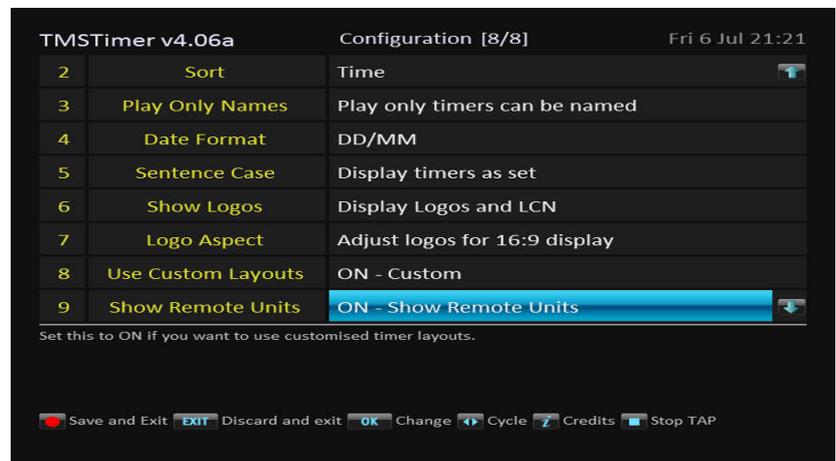
Commencing with version 4.06 (Beta 3), TMSTimer Plus Custom Layouts has the ability to consolidate and display the timers from up to 4 Topfield PVRs on one screen, that is, the PVR running TMSTimer ("Unit A") and up to 3 others, "Unit B", "Unit C" and "Unit D".

To use this feature, "Custom Layouts" must also be enabled in order to display the unit ID on the screen. See the "UNIT" parameter on page 3.

#### 7.1 Enabling Remote Units

To enable Custom Layouts:

1. Ensure that you have copied your remote timer files to layout file(s) to /ProgramFiles/Settings/TMSTimer.
2. Enter the TMSTimer configuration screen.
3. Select "5 Timer Settings".
4. Scroll down to "9 Show Remote Units".
5. Change the option from "OFF - Local Unit" to "ON - Show Remote Units".
6. Press the "Save and Exit" button.



#### 7.2 Unit Filtering

The display of remote units can also be filtered by using the "Subtitle"  key whilst the timer list is displayed.

Pressing the "Subtitle" key will change the filtering options as follows:

All Units -> Unit A Only -> Unit B Only -> Unit C Only -> Unit D Only -> All Units

If a unit does not exist, that display option is automatically skipped. The unit filter is only retained for as long as TMSTimer is running. If you stop (not hide) TMSTimer or power-off the unit, then it will default back to "All Units" the next time you start TMSTimer.

A default filter can be set from the configuration screen. Select "Timer Settings / Default Unit Filter". This default does not take effect immediately and is only applied with TMSTimer loads.

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### 7.3 Remote Units Data

"Unit A" can obtain timer information from other Topfield PVRs by either of the following methods:

#### File Transfer

TMSTimer can read the "timers export" file created by 2 existing TAPS.

#### Pre-TMS PVR Models - PBK

For consolidating timers from pre-TMS PVRs, use the TAP "ProgressBarKeys" (PBK) to export timers to "Timers.txt". Use a file transfer tool like Altair or Antares to copy "Timers.txt" from the pre-TMS PVR via a PC to the TMS PVR running TMSTimers. Advanced users could connect their pre-TMS unit to their TMS unit via USB cable and use "puppy" compiled for TMS from the PVR's command line.

#### TMS PVR Models - TMSTimer

For consolidating timers from other TMS PVRs, use the timers export feature within TMSTimer to create "TimerList.txt" and copy that file to the main PVR running TMSTimers using FTP via a PC or via USB flash drive.

Remote unit timer files should be copied into /ProgramFiles/Settings/TMSTimer. Once the timer export files have been copied to "Unit A", rename the timers export file to "unit?.txt", where "?" is replaced by "b", "c" or "d" depending upon the number of units being consolidated.

Once the remote timer files have been copied, **restart** TMSTimer.

It should be noted that any TAP can be used to export timers provided that the export file is created in the correct format.

#### Services Map

If you are using PBK as a source for your remote timers, you also need to create a service map file. PBK does not export the LCN, only the service name and internal index. To ensure a definite match between the service on the pre-TMS unit and the TMS unit, a map file is required.

The services map file is a tab-delimited text file created on a PC and copied to the unit running TMSTimer with one line for each service in the following format:

```
LCN<tab>Service Name
```

In the previous example, "123<tab>Fred's Free-to-air" means 'when a timer in the remote PBK file is for the service "Fred's Free-to-air" map that to LCN "123" on the unit running TMSTimer'.

#### Network Connection

It is envisioned that future versions will be able to access remote timer information directly over a network or USB connection. But not just yet.

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### 7.4 Local Cache

The timer export files are only read once. Once the timers have been read and processed, they are written to a cache file to boost performance. Likewise, timers for remote units configured for network access (once implemented) will also be written to a local cache.

### 7.5 Date "Rollover"

TMSTimer has the ability to recognise timers dated in the past that exist in either its remote unit timer's cache or in the import files that it processes. If a remote unit has timers in the past that are not "One Time" timers, the timer date will be processed in accordance with the timer's "Frequency" to determine the next future execution date. "One Time" timers in the past will be deleted. This process is known as "Rolling over" the date. Once a timer has been "rolled over", the standard TMSTimer background processing tasks will recognise this and re-write the local cache with the updated timer information.

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### 8. Mini-EPG View

Commencing with version 4.10 of TMSTimer, a new "Mini-EPG" feature has been introduced to provide a graphical representation of the selected timer and the EPG events covered for the duration of that timer.

#### 8.1 Activating the Mini-EPG View

To activate the Mini-EPG, display the standard TMSTimer listing and use the up/down buttons to select a timer. Press the "Info" button to activate the Mini-EPG view for the selected timer.



The Mini-EPG screen is divided into a number of areas:

#### Timer Name & Timer Details

These areas display the name and the details of the timer respectively. The following information is provided: timer type, frequency, day, date, start time, end time, duration, service number and service name. If "Remote Units" are enabled, the unit ID is displayed first.

#### Time Scale Area

The time scale area automatically adjusts to accommodate all events either partially or fully covered by the timer, extended to the nearest 30 minute boundary. Calibration blocks mark off 30 minutes increments.

#### Timer Bar

The red bar approximates the selected timer's start time and duration in relation to the EPG events that it covers. The start time and duration can be edited graphically as described in section 8.2.

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### EPG Events Bar

This area displays the EPG events that have some portion covered by the timer. Partially covered events are presented with a light gray background, whereas fully covered events have a dark gray background.

It is possible to navigate through these EPG events using the left/right navigation keys of the remote control unit. The EPG event currently selected is presented with a yellow background.

Pressing "OK" on a selected EPG event will display a screen showing extended event information.

### Selected Event Time & Name

This area shows the start time and end time of the selected EPG event as well as its name.

### Selected Event Details

This area shows the description of the selected EPG event as well as whatever portion of the extended description can be accommodated on the screen.

## 8.2 Editing a Timer Graphically

The Mini-EPG screen allows the selected timer to be adjusted graphically. Please note: If "Remote Units" are enabled, only timers for "Unit A" can be edited, all others are read-only.

### Changing the Start Time

Jump Back 	Move earlier by 1 minute
Numeral 9	Move earlier by 15 minutes
Jump to End 	Move later by 1 minute
Numeral 7	Move later by 15 minutes

### Changing the Duration

Reverse 	Shorten by 1 minute (off the end)
Channel -	Shorten by 15 minutes (off the end)
Forward 	Lengthen by 1 minute (on the end)
Channel +	Lengthen by 15 minutes (on the end)

### Aligning a Timer to an EPG Event

Cut/AB 	Align timer to an EPG Event
Slow 	Align timer to an EPG Event starting 5 minutes early and running 15 minutes longer.

When moving a timer or changing its duration in a manner that causes the timer to no longer be contained within the existing Time Scale Area, the EPG Events Bar will automatically adjust to reflect the EPG events covered by the new timer start time and duration. The Time Scale Area will automatically re-scale to suite the new time range of the timer and covered EPG events.

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### Changing the Timer Name

When an EPG event has been selected, the timer name can be modified by using either F1 (Red) or F2 (Green).

F1 (Red) Set the timer name to be the same as the selected EPG event.

F2 (Green) Add the name of the selected EPG event to the end of the existing name.

Generally, timer names are restricted to a total of about 120 characters. If this limit is exceeded, the timer name will be truncated so that it remains within the character limit.

If the "PC Safe" feature is enabled with TMSTimer, timer names set using the Mini-EPG view will also be made "PC Safe" by removing illegal PC file name characters.

### Resetting Changes

Pressing the "Recall"  button will reverse any changes made whilst the Mini-EPG screen is being displayed.

### Saving Changes

To save the changes made to a timer, press the "Rec"  button. If changes have been made and the "Exit" button is pressed, the user will be prompted abandon or retain the changes.

## 8.3 Mini-EPG Restrictions, Caveats & Miscellany

Mini-EPG can display timers covering up to 20 events. Timers spanning more than 20 events are displayed, but the event details will be replaced by an error message. This is a practical limitation due to the available screen space and the proportional nature of the EPG event block width.

During testing and development it was shown that the Mini-EPG screen may crash the PVR under extreme circumstances. For example, if a very long timer (10-20 hours) covers 2 very long EPG events (5-10 hours each) surrounding one very short event (1-5 minutes) a crash may occur. The Mini-EPG screen attempts to identify and resolve such situations, however, it was not possible to test all possible permutations. **You have been warned.**

For events with no available EPG information, for example, events too far in the future, an error message will be shown within the EPG events portion of the display. Editing will be disabled.

Most labels have German translations. Unfortunately, the translations were provided by an online tool so they may not be 100% accurate. Feel free to post revised translations to the Australian forum if required.

Mini-EPG may, from time to time, display duplicated EPG events. In testing, this issue has only been experienced when using an ICE TV EPG feed where events have been recently updated. For a short time, both the new and old events are provided to Mini-EPG by the Topfield firmware.

### The Button with Many Names



In the TRF-2460 manual, this button is described as "has different functions per menu". In the TAP API documentation, the button is referred to as "AB". In libFireBird, the button is referred to as "Cut". In Mini-Menu it is used to align a timer to an EPG event.