

NetLinux Module Interface Specification

for

Pray Time Notifier

TABLE OF CONTENTS

Introduction3

Overview3

Implementation3

Port Mapping.....4

Channels5

Command Control.....6

String Feedback.....11

LIST OF TABLES

Table 1 - Port Mapping4

Table 2 – Virtual Device Channel Events.....5

Table 3 – Send Command Definitions10

Table 4 – String Feedback Definitions.....13

Revision History

Date	Version	Comments
01-10-15	1.0.0	Initial release
01-06-20	1.1.0	- Adding more calculation methods - Changing the minute adjustment to seconds instead of minutes to make the calculated times more accurate

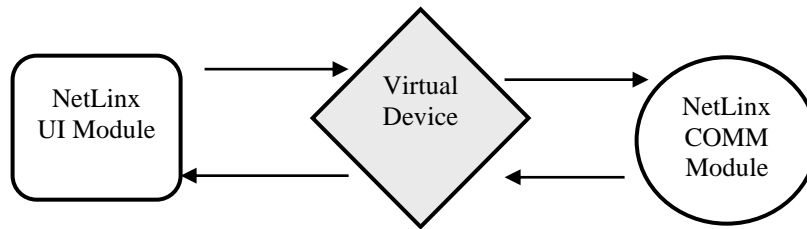
Introduction

This is a reference manual to describe the interface provided for the Pray Time Notifier NetLinx module for the AMX NetLinx system.

Overview

The COMM module translates between the standard interface described below to manage and control/configure the Pray Time Notifier module

The following diagram gives a graphical view of the interface between the interface code and the NetLinx Module.



Implementation

To interface to the AMX Pray Time Notifier module, the programmer must perform the following steps:

1. Define the virtual device ID that the module will use to communicate with the main program and user interface. NetLinx virtual devices start with device number 32768.
2. The NetLinx PrayTime_Notifier_V1_1_0.tko module must be included in the program with a DEFINE_MODULE command. This command starts execution of the module and passes in the following key information: the virtual device ID for communicating to the main program.

An example of how to do this is shown below.

DEFINE_DEVICE

dvTouchPanel = 10001:1:0 // The touch panel used for output

vdvPrayTimeNotifier = 33001:1:0 // The virtual device use for communication between the
// module interface and main program

DEFINE_MODULE 'PrayTime_Notifier_V1_1_0' Comm1(vdvPrayTimeNotifier)

Port Mapping

This module uses single virtual devices to calculate pray times for different cities if required.

Virtual Device	Channels	Levels	Control	Feedback
32768:1:0	All	None	All	All

Table 1 - Port Mapping

Channels

The UI module gets feedback from the Prayer Time Notifier module via channel events. The channels supported by the module are listed below. These channels are associated with the virtual device(s) and are independent of the channels associated with the touch panel device.

Note: An ‘*’ indicates an extension to the standard API.

Channel	Description
1*	PULSE: Pray time for Fajr is now - provides feedback only
2*	PULSE: Pray time for Sunrise is now - provides feedback only
3*	PULSE: Pray time for Dhuhr is now - provides feedback only
4*	PULSE: Pray time for Asr is now - provides feedback only
5*	PULSE: Pray time for Sunset is now - provides feedback only
6*	PULSE: Pray time for Maghrib is now - provides feedback only
7*	PULSE: Pray time for Isha is now - provides feedback only

Table 2 – Virtual Device Channel Events

Command Control

The Interface code will manage/configure the pray time notifier module via command events (NetLinx command *send_command*) sent to the module. The commands supported by the module are listed below.

Command	Description
?CalculationMethod	Request the current pray times calculation method. ?CalculationMethod
CalculationMethod-<MethodID>	Set the pray times calculation method. <MethodID> : 1 = Custom Setting 2 = Shia Ithna Ashari (Jafari) 3 = University of Islamic Sciences, Karachi 4 = Islamic Society of North America (ISNA) 5 = Muslim World League (MWL) 6 = Umm al-Qura, Makkah 7 = Egyptian General Authority of Survey 8 = Egyptian General Authority of Survey (bis) 9 = Institute of Geophysics, University of Tehran 10 = Fixed Isha Angel Interval 11 = UAE General Authority of Islamic Affairs 12 = Kuwait 13 = Qatar 14 = Algerian Minister of Religious Affairs and Wakfs 15 = Tunisian Ministry of Religious Affairs 16 = Diyanet Isleri Baskanligi, Turkey 17 = JAKIM (Jabatan Lemajuan Islam Malaysia) 18 = MUIS (Majlis Ugama Islam Singapura) 19 = SIHAT/KEMENAG (Kementerian Agama RI) 20 = UOIF (Union Organization Islamic de France) 21 = France - Angel 15 22 = France - Angel 18 23 = Spiritual Administration of Muslims of Russia CalculationMethod-5
?JuristicMethod	Request the current pray times Juristic Method for Asr calculation. ?JuristicMethod
JuristicMethod-<MethodID>	Set the pray times Juristic Method for Asr calculation. <value> : 1 = Shafii (standard) 2 = Hanafi JuristicMethod-1

FajrAngle-<Angle>	<p>Set the Fajr angle for the pray times custom calculation method.</p> <p><Angle> : 0..n = Fajr calculation Angle</p> <p>FajrAngle-18</p>
MaghribAngle-<Angle>	<p>Set the Maghrib angle for the pray times custom calculation method.</p> <p><Angle> : 0..n = Maghrib calculation Angle</p> <p>MaghribAngle-4</p>
IshaAngle-<Angle>	<p>Set the Isha angle for the pray times custom calculation method.</p> <p><Angle> : 0..n = Isha calculation Angle</p> <p>IshaAngle-18</p>
DhuhrMinutes-<Minutes>	<p>Set the minutes after mid-day for Dhuhr.</p> <p><Minutes> : 0..n = number of minutes</p> <p>DhuhrMinutes-15</p>
MaghribMinutes-<Minutes>	<p>Set the minutes delay for Maghrib.</p> <p><Minutes> : 0..n = number of minutes</p> <p>MaghribMinutes-5</p>
IshaMinutes-<Minutes>	<p>Set the minutes delay for Isha.</p> <p><Minutes> : 0..n = number of minutes</p> <p>IshaMinutes-10</p>
CustomParams-<FajrAngle>,<AngleOrMin>,<MaghribParam>,<AngleOrMin>,<IshaParam>	<p>Set the pray times calculation parameters to the passed custom values.</p> <p><FajrAngle> : 0..n = Fajr Angle</p> <p><AngleOrMin> : 0 = Next parameter is Angle 1 = Next parameter is Minutes</p> <p><MaghribParam> : 0..n = Maghrib Angle/Minutes</p> <p><AngleOrMin> : 0 = Next parameter is Angle 1 = Next parameter is Minutes</p> <p><IshaParam> : 0..n = Isha Angle/Minutes</p> <p>CustomParams-18,1,0,0,17</p>
?HighLatitudesMethod	<p>Request the current Adjusting Methods for Higher Latitudes.</p> <p>?HighLatitudesMethod</p>

HighLatitudesMethod-<MethodID>	<p>Set the Adjusting Methods for Higher Latitudes.</p> <p><MethodID> :</p> <p>1 = No adjustment 2 = middle of night adjustment 3 = 1/7th of night adjustment 4 = angle/60th of night adjustment</p> <p>HighLatitudesMethod-2</p>
?TimeFormat	<p>Request the current time format.</p> <p>?TimeFormat</p>
TimeFormat-<TimeFormatID>	<p>Set the time format.</p> <p><TimeFormatID> :</p> <p>1 = 24-hour format 2 = 12-hour format 3 = 12-hour format with no suffix 4 = floating-point number</p> <p>TimeFormat-2</p>
?TimeZone	<p>Request the current time zone.</p> <p>?TimeZone</p>
TimeZone-<TimeZone>	<p>Set the time zone.</p> <p><TimeZone> : $\pm 0..n$ = time zone offset</p> <p>TimeZone-4</p>
?Coordinates	<p>Request the current latitude and longitude coordinates parameter.</p> <p>?Coordinates</p>
Coordinates-<Latitude>,<longitude>	<p>Set the latitude and longitude coordinates parameter for the location to calculate pray time for.</p> <p><Latitude> : Any floating-point value <longitude> : Any floating-point value</p> <p>Coordinates-25.264520,-55.311667</p>
?MinuteAdjustment	<p>Query the current adjustment minutes for all times.</p> <p>?MinuteAdjustment</p>

MinuteAdjustment- <FajrMin>,<SunriseMin>,<DhuhrMin>,<AsrMin>,<SunsetMin>,<MaghribMin>,<IshaMin>	<p>Set the pray times minutes adjustment, these values (in seconds) will be added/subtracted from the calculated pray times to adjust the times as required</p> <p><FajrMin> : ±0..600 = adj. minutes for Fajr <SunriseMin>: ±0..600 = adj. minutes for Sunrise <DhuhrMin> : ±0..600 = adj. minutes for Dhuhr <AsrMin> : ±0..600 = adj. minutes for Asr <SunsetMin> : ±0..600 = adj. minutes for Sunset <MaghribMin>: ±0..600 = adj. minutes for Maghrib <IshaMin> : ±0..600 = adj. minutes for Isha</p> <p>If any of the values is not passed with the command, the old value will be used</p> <p>MinuteAdjustment-0,-1,,5,10,,0</p>
?DEBUG	<p>Request the state of the debug feature.</p> <p>?DEBUG</p>
DEBUG-<value>	<p>Set the state of debugging messages in the UI module and the Comm. module.</p> <p><value> : 1 = set only error messages on 2 = set error and warning messages on 3 = set error, warning & info messages on 4 = set all messages on</p> <p>DEBUG-1</p>
REINIT	<p>Re-initializes the module to calculate pray times again.</p> <p>REINIT</p>
?VERSION	<p>Query for the current version number of the module.</p> <p>?VERSION</p>
ENABLENOTIFIER-<value>	<p>Enable/disable pray notifier; if notifier enabled the module will trigger event when pray time is reached.</p> <p><value> : 0 = Disable 1 = Enable</p> <p>ENABLENOTIFIER-1</p>
?PRAYTIMES	<p>Request the current date pray times.</p> <p>?PRAYTIMES</p>

<p>ACTIVATE- <LicenseKey>,<ActivationKey></p>	<p>Set activation key for the module to activate the module to work with the intended master, if module activated with a valid license and activation keys, all the prayer times will be calculated and you will get notification when their times comes, otherwise prayer times will be calculated only for one week</p> <p>NOTES:</p> <ul style="list-style-type: none"> - Please visit http://ultcontrol.com/modules/pray-times/ to get your license and activation keys <p><LicenseKey> : License key string <ActivationKey> : Activation key string</p> <p>ACTIVATE-THELICENSEKEY,THEACIVATIONKEY</p>
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Table 3 – Send Command Definitions

String Feedback

The NetLinx module provides feedback to the Interface code for **Prayer times calculation** via string events. The strings supported are listed below.

Command	Description
CalculationMethod-<MethodID>	<p>Returns the pray times calculation method.</p> <p><MethodID> :</p> <ul style="list-style-type: none"> 1 = Custom Setting 2 = Shia Ithna Ashari (Jafari) 3 = University of Islamic Sciences, Karachi 4 = Islamic Society of North America (ISNA) 5 = Muslim World League (MWL) 6 = Umm al-Qura, Makkah 7 = Egyptian General Authority of Survey 8 = Egyptian General Authority of Survey (bis) 9 = Institute of Geophysics, University of Tehran 10 = Fixed Isha Angel Interval 11 = UAE General Authority of Islamic Affairs 12 = Kuwait 13 = Qatar 14 = Algerian Minister of Religious Affairs and Wakfs 15 = Tunisian Ministry of Religious Affairs 16 = Diyanet Isleri Baskanligi, Turkey 17 = JAKIM (Jabatan Lemajuan Islam Malaysia) 18 = MUIS (Majlis Ugama Islam Singapura) 19 = SIHAT/KEMENAG (Kementerian Agama RI) 20 = UOIF (Union Organization Islamic de France) 21 = France - Angel 15 22 = France - Angel 18 23 = Spiritual Administration of Muslims of Russia <p>CalculationMethod-5</p>
JuristicMethod-<MethodID>	<p>Returns the pray times Juristic Method for Asr calculation.</p> <p><value> : 1 = Shafii (standard) 2 = Hanafi</p> <p>JuristicMethod-1</p>
HighLatitudesMethod-<MethodID>	<p>Returns the Adjusting Methods for Higher Latitudes.</p> <p><MethodID> :</p> <ul style="list-style-type: none"> 1 = No adjustment 2 = Middle of night adjustment 3 = 1/7th of night adjustment 4 = Angle/60th of night adjustment <p>HighLatitudesMethod-2</p>

TimeFormat-<TimeFormatID>	<p>Returns the current time format.</p> <p><TimeFormatID> :</p> <p>1 = 24-hour format</p> <p>2 = 12-hour format</p> <p>3 = 12-hour format with no suffix</p> <p>4 = floating-point number</p> <p>TimeFormat-2</p>
Coordinates-<Latitude>,<longitude>	<p>Returns the current latitude and longitude coordinates parameter used in the module.</p> <p><Latitude> : Any floating-point value</p> <p><longitude> : Any floating-point value</p> <p>Coordinates-25.264520,-55.311667</p>
MinuteAdjustment-<FajrMin>,<SunriseMin>,<DhuhrMin>,<AsrMin>,<SunsetMin>,<MaghribMin>,<IshaMin>	<p>Returns the current pray times minutes adjustment, these values (in seconds) will be added/subtracted from the calculated pray times to adjust the times as required</p> <p><FajrMin> : adj. minutes for Fajr</p> <p><SunriseMin>: adj. minutes for Sunrise</p> <p><DhuhrMin> : adj. minutes for Dhuhr</p> <p><AsrMin> : adj. minutes for Asr</p> <p><SunsetMin> : adj. minutes for Sunset</p> <p><MaghribMin>: adj. minutes for Maghrib</p> <p><IshaMin> : adj. minutes for Isha</p> <p>MinuteAdjustment-0,-1,,5,10,,0</p>
PrayTimes-<Fajr>,<Sunrise>,<Dhuhr>,<Asr>,<Sunset>,<Maghrib>,<Isha>	<p>Returns the current date pray times.</p> <p><Fajr> : Time for Fajr Pray</p> <p><Sunrise>: Time for Sunrise</p> <p><Dhuhr> : Time for Dhuhr Pray</p> <p><Asr> : Time for Asr Pray</p> <p><Sunset> : Time for Sunset</p> <p><Maghrib>: Time for Maghrib Pray</p> <p><Isha> : Time for Isha Pray</p> <p>Coordinates-25.264520,-55.311667</p>
DEBUG-<value>	<p>Returns the state of debugging messages in the UI module and the Comm. module.</p> <p><value> : 1 = set only error messages on</p> <p>2 = set error and warning messages on</p> <p>3 = set error, warning, and info messages on</p> <p>4 = set all messages on</p> <p>DEBUG-1</p>

VERSION-<version>	<p>Returns the version number of the module.</p> <p><version> : xx.yy.zz = module version number</p> <p>VERSION-1.0.0</p>
ACTIVATED-<ActivationState>	<p>Returns the activation state of the module license key.</p> <p><ActivationState> : YES = Module is activated NO = Module is NOT activated</p> <p>ACTIVATED-YES</p>

Table 4 – String Feedback Definitions