Wireless I/O Controller TLM11 WAi11-8

System handbook and use
Version: 3.2

Digital Micro Devices

08-2-2009

White page

Telemando TLM11.

DESCRIPTION.

The wireless TLM11 for rail DIN, has 8 inputs and 8 outputs, in the radio band ISM of 868Mhz for Europe and 902-928Mhz for America, offering security and very high realiability. The radio is bidirectional and microprocessor controllerd, checks and verifies that orders arrive at their destination.

The TLM11 can control status changes inputs / outputs up to 10 times per second with a minimun delay of 20 miliseconds.

Composed of a wireless automat of the last generation, the WAi11, contains modern CPU XM6411, compatible with series RF modules WM11 of DMD.

Completed in box for rail DIN with SMA antenna output.

The output power is 10mW to 868 or 902Mhz, BFSK modulation, with ¼ antennas are possible links 100 to 300 meters depending on ground conditions.

in indoor the range can be reduced depending on the osbtacles and walls, especially if you have equipment on different levels and are built concrete or metal parts.

In these cases it is recommended use a repeater economic RP11. Is preferable to increase the RF power of the equipment.

Version 3.1, has new features and has a powerful hardware renovated Wai11-8 and new firmware: TLM11 V3.1.

For ranges up to 30Km, should be used as the GP900 outdoor antennas, Yagi directional or compact patch of 868-928Mhz SMP-918. (view antennas on www.tienda.dmd.es).

Optionally and to increase the range or safety radiolink you can use a 500mw amplifier bidirectional, reference PAISM05WSH.

This option combined with high gain antennas can exceed the maximum power permitted depending on band and country. Please check local regulations.

In Europe there is a sub-band in the 869Mhz frequency where you can transmit a maximum of +27dBm (500mW).

500mW amplifier

Integrates with DMD sytems DmdOpen of DMD and systems containing RF module WM11 or compatible.

RF module WM11

Wlink11_USB Radiomodem for PC

NORMAL OPERATION MODE.

The basic operation of the remote control in normal mode is being telecommanded from another remote control, a remote terminal, a controller or a PC with a Wlink11s with commands SMS by radio, can activate the outputs or read from inputs in a network of remote controls.

Is used for Domotic, irrigation, garden lights, Remote control water pumps, remote control from PC, Industrial Remote Control, Remote machines, small cranes, etc.

OPERATING POINT TO POINT.

The basic functioning of wireless TLM11 in point to point mode consists of an bi-directional link between two WAi11-TLM11, with 8 input and output ports, in which entries in one activate the outputs of the other and vice versa. Obtaining by radio the equivalent to replaced 16 cables with very reliably.

IN the point to point mode, the led "Link_error" is reponsible for indicating, if there is a problem on the other side (System off, lack of coverage and broken link or nonexistent). Do you test a minimum of 2 meter distance, if you are closer ther are may be errors.

In this mode is possible to monitor the activity from a PC using a Wlink11S, using the command "TRAZA" via radio.

Whenever change the state of an input, immediately notifies the remote control destination. If this was switched off or out of coerage, will attempot to comunicate with the every 0,5 seconds and indicate that there is a problem activating the led "Link_Error" and output "Link_error" until you can communicate properly.

The activation delay of the outputs is approximately 18 milliseconds. And you can make changes to the entries with maximum frequency of 10Hz approximately.

When the equipment is running aif in poin to point mode, firts will identify and send the most important options selected (Point to point, etc.). After will communicate with the linked remote control, to send the status of the inputs to the outputs of the remote equipment.

A equipment can be linked to another and this can be in point to point mode linked to the previous or any other or be in normal mode, can maked multitude of combinations normal point to point with Wlink11s, in network, with mobile terminals, etc.

The point to point mode has a safety timer programmable in tenths of a second (From factory programmed to 6sec approx.) the remote controls communicate with each other every time the timer ends, ensuring and monitoring the correct point to point link. The timer can be disabled if it program to "0000" though for security is appropriate at least make a link every 10 minutes maximum.

INPUTS / OUTPUTS.

The 10 digital inputs, (all or nothing), marked as i1 to i10, are to "0" logical from 0 to 2,2V and to "1" logical from 3 to 24Vcc.

Some entries are also analog, marked as I3 to i9. The analog inputs operate from 0 to 3.30V. Resolution: 5mV.
Function as voltmeters and can be useful in many cases.
Can be read remotely with the command "ADC 3" to "ADC 8".

The inputs are for direct current, not are suitable for alternating current. No opto-isolated.

Are filtered with RC (10k/100nf) and protected with a D. Zener.
They have a common screw terminal (GND or 0V).
Positive Logic. "1" -> voltage higher than 3V, "0" -> lower voltage of 2V.
The input impedance is 10K.
Maimum input frequency: 10Hz.

The 8 digital oitputs (all or nothing), marked as O1A – O1B to O8A –O8B, are activated by relays with two independent contatcs open in resting. Maximum Tension: 48V. Maximum intensity: 1Amp. (See wiring diagram).

If the charge is inductive (one electrovalve) to protect even better output yoy may put a parallel RC of 33Oh and 10NF/400V.

The output OLNKE (Output Link Error or Link error), in all versions is a MOSFET in open collector mode of 24V to 2Amp max.

When the remote control is not linked point to point, **can be used as an output more**, with the command "SET LE" to activate or "RST LE" to disable.

To test the inputs, you can connect a cable from +12V of power suplly to the input. Verify that active in the upper panel the corresponsing green led and if TLM11 is configured point to point will be transmitted immediately and activate the corresponding output on the TLM11 receiver.

POWER SUPPLY.

The power supply of 9 to 24Vcc, in standard version.

It as an efficient converter DC/DC internal and protection from reverse polarity.
Do not diddipates heat and obtained almost all energy from the outside.

Optionally can provide a modern and efficient commutated adapter for 110/220V to 12Vcc.

To 12Vcc, consumption resting is 25-35mA, and all active outputs can reach 150mA.

COMMUNICATION SYSTEM.

The communication system of radio frequency*(RF WM11 module),* available as a modern, powerful and advanced radio modem in the ISM band 868 or 902Mhz/10mW, with BFSK modulation to 38.400 bauds, bidirectional with Unibus11W network protocol, IP addressing, programmable channel and programmable cell coverage.

The module RF of TLM11 V3.1 is included in cpu XM6411 and has the version 4.1 firmware or higher. Is autonomous and it supports all the standard commands WM11.

To increase the range or security by redundancy, in a network of remote controls, you can activated the repeater option in the RF module.

RF Module WM11

The low power radio that manages *(10mW),* no license required to the radio channel and is unlikely to interfere with anyone, also because the transmissions are performing very short duration *(typically 18-50 miliseconds)*.

For more information see the data sheet ofl WM11 in the download area of http://www.dmd.es

CPUs XM12811 or XM6411 used in Wai11-TLM11

FEATURES.

Dimensions: 105 long x 90 wide x 70mm high. Rail DIN.

Weight: 200 grams.

Box: ABS Plastic. Standard Grey color.

Inputs: Digital 10 and analog 8. 0 to 24Vcc. 10K impedance.

Outputs: 8 to relay. Max 48V / 1Amp. 1 with Mosfet transistor 24V/2A.

Consumption: Repose 25-35mA, max 150mA.

Radio system: ISM Band 868 or 902Mhz.WM11. (more information in www.dmd.es)

Antenna: External 50Oh. SMA Connector.

Comunication: Unibus11W network. Via bidirectional radio.

EU Frequency: Europe Version: 868.1Mhz to 869.9Mhz. CE.

US Frequency: North America Version: 902.1 to 927.9Mhz. FCC.

Channels: 19 channels at 100khz 868Mhz. 255 in 902Mhz. No license.

Power /sens: 10mW. –99dBm. Channel 12 by default.

Modulation: BFSK. 38400b.

Addressing: Single IP Address. IP Filters in WM11 and Filters in TLM11.

Range: From 100m to 30Km depending antennas and conditions.

Reset.   Automatic. WatchDog 2seg.

CPU: XM6411 or XM12811 to 12Mhz.

Link_error: Output + Led indicator, bad coverage or stopped equipment.

Compatibility: DmdOpen, rail DIN. RF Systems with WM11.

TLM11 COMMANDS

To configure the TLM11, send commands or receive data on a PC, you need a radiomodem WLINK11_USB or similiar.

TLM11 has multiple commands to configure the remote control, to activate outputs or to read the digital inputs or analog, etc. It is a versatile remote control.

To client request the TLM11 can be configured from the factory and linked point to point by pairs. In this case you not need the command system and can install an test immediately.

It assumes that you have a PC with a Wlink11 connected to Com1 to 57600b,8,N, with version 4.1 or higher, channel 12 by default, NCD=255, PWR>7. You have to use Wlink11_Eval software for windows.

"SMS" Short message significance.

We recommended read the WLINK11 manual.

When the remote control is launched, send a message (SMS) broadcast (To the entire network, IP=000.000):

> **<SMS 102.046**   (102.046 = IP Wireless controller Address)
> **TLM11 V:3.1**   (Identification equipment)

The TLM11, cand send more information on startup, dependng on your computer configuration.

PP – Configures point to point link

Description:

Configure a bidirectional link in real time, between 8 digital inputs of local TLM11 and outputs of a remote equipment, using its IP address.

To activate the Point to Point mode using the command ""PP ON"

Examples:

SMS 102.046,PP=102.031,0060   **Configure Point to point**

Parameters :
102.046 = Wireless controller IP Address to configured.
102.031 = Wireless controller IP Address receiver or link destination.
0060   = Time in tenths of a second. Retransmissions.

Answer:

<SMS 102.046
 PP 102.031,0060, Ok   config. Verification. Point to point

Parameters:
102.046 = Wireless controller IP Address configured.
  102.031 = Wireless controller receiver confirmation IP address or destination link.
  0060   = Confirmation time retransmissions.
  Ok   = Command executed successfully.

Notes:

 The command only configures the TLM11, but no active poin to point mode.

The quipment remote destination TLM11 can be another. It is not necessary to configure the remote TLM11 poin to point mode, if you don't want to enable outputs of TLM11 local with the inputs of the remote equipment.

If the remote equipment is a PC or a microcontroller, you will recive an SMS with the command "OUT=xx". Each time you change an entry or the retransmission timeout.

In the point to point mode, the led "Link_error" indicate if there is any problem on the remote equipment (Equipment Off, Broken link or lack of coverage and nonexistent)

Perform test as a minimum 2 meters distance, if you are closer there can be errors.

In this mode is possible to monitor rhe activity from a PC using a WLINK11S, using the command "TRON" via radio.

PP ON – Active mode point to point

Description:

Active mode point to point.

Examples:

SMS 102.046,PP ON   **Active mode point to point.**

Answer:

<SMS 102.046   102.046 = Wireless controller IP
Address.
PP ON, Ok   Verification activation point to point.

Parameters:
102.046 = Wireless controller IP address activated.

Notes:

The local TLM11 will attempt to communicate the status of your entries to the equipment remote immediately.

At this moment although is stopped an it launched the remote control, will attempt to communicate with the equipment remote.

The command is stored when it occurs a power failure or equipment stop.

To configure point to point mode use the command "PP".

To disable the point to point mode use the command "PP OFF".

In this mode is possible to monitor the activity from a PC using a WLINK11S, using the command "TRON" via radio. Stop trace, "TROFF".

PP OFF – Disables mode point to point

Description:

Disable mode point to point.

Examples:

SMS 102.046,PP OFF   **Disable mode point to point.**

      Answer:

<SMS 102.046   102.046 = Wireless controller IP
address.
    PP OFF, Ok   Verification command.

      Parameters:
      102.046 = Wireless controller IP address to disabling.

Notes:

Local TLM11 will leave communicate the status of your entries to the equipment remote immediately.

The desactivation is stored to a power failure or equipment stop.

To configure point to point mode use the command "PP".

To activate point to point mode use the command "PP ON".

PP? – Read configuration poin to point mode

Description:

Read the programmed configuration in point to point mode.

Examples:

SMS 102.046,PP?   **Read config. Point to point mode.**

Answer:

<SMS 102.046   102.046 = Wireless controller IP address.
PP 097.145,0060   Destination IP = 097.145, 6.0 TX seconds.

Parameters:
102.046 = Wireless controller IP address to activate.
097.145 = IP destination equipment.
0060 = 6.0 second time of retransmission periodically.

Notes:

ST? – Read communications statistics point to point

Description:

Read statistics as number of messages sent, Received Ok and % error.

Examples:

SMS 102.046,ST?   **Read statistics.**

        Answer:

<SMS 102.046   102.046 = Wireless controller IP
Address.
    ST: 990Msg, 10Er, 99% ok   Statistics messages.

        Parameters:
        102.046 = Wireless controller IP address to activate.
         Msg = sent SMS.
         Er = Communication Errors.
         % = Correct in %.

Notes:

TRON – Trace point to point mode

Description:

Activates trace, sending an SMS to the IP 000.000 the value of the current entries, previus entries to change and actual outputs communications of point to point mode.

Examples:

SMS 102.046,TRON **Active trace. In point to point mode.**

Answer:

<SMS 102.046 102.046 = Wireless controller IP address.
PP TRON, Ok Verification command.

<SMS 102.046
<TRZ 102.046,Mensaje_rx,-067dBm Example of trace received at PC.

Parameters:

102.046 = Wireless controller IP address.

Notes:

The trace is a SMS that sends the status of the actual entries, previous state of inputs and actual outputs of TLM11.
"E=Imputs, EA=Inputs_ant, S=hex(Outputs)

The activation of the trace, duplicates the sending of SMS and reduces the bandwidth available on the network, if there are many communications per second. Only use it to check remote control operation at specific moments.

To disable, use the command "TROFF".

1

TROFF – Disable trace point to point mode

Description:

Disables the trace in point to point mode.

Examples:

SMS 102.046,TROFF   **Disables trace. In point to point mode**

Answer:

<SMS 102.046   102.046 = Wireless controller IP
address
PP TROFF, Ok   Verification command

Parameters :

102.046 = Wireless controller IP Address.

Notes:

To activate the trace, use the command "TRON".

OUT – Assigns state outputs or reading outputs

Description:

Assigns the data in Hexadecimal at 8 outputs of TLM11.
Read the status of the outputs in Hexadecimal.

Examples:

SMS 102.046,OUT=0F   **Outputs=0F(hex) = 00001111(bin)**

    Answer:

<SMS 102.046   102.046 = Wireless controller IP
address
  OUT 0F   Verification command

    Parameters:
    102.046 = Wireless controller address IP.
    0F= Outputs value in hexadecimal. Equals 00001111 in binary

SMS 102.046,OUT?   **Read the state of the outputs in hexa.**
          The answer is identical to the previous

Notes:

The OUT command, can be used if the receiver TLM11 command isn't the destiny of another equipment in point to point mode, beacause although will execute the command, the output will return by the tiime the value of emitter equipment inputs linked point to point.

If it can be used on a equipment with point to point mode activated but not be the receiver other equipment in point to point mode. Their otputs are free to use output commands.

It is useful when we want to activate and disable all block outputs with a single command.

Other input-output commands: INP, ADC, SET, RST, TOG.

An ative output or to state "1" equivalent to the output contacts closed.

An output disabled or to state "0" equivalent to output contacts open.

SET – Active Outputs

Description:

Active outputs.

Examples:

SMS 102.046,SET 1   **Output 1 activated**

      Answer:

<SMS 102.046   102.046 = Wireless controller IP
address
  S1   Output activated

SMS 102.046,SET   **Active all outputs**

      Answer:

<SMS 102.046   102.046 = Wireless controller IP
address
  OUT FF   Output activated

Parameters:
102.046 = Wireless controller IP address.
FF= Outputs value in hexadecimal. All activated.

Notes:

The commad SET, can be used if the receiver TLM11 of the command it isn't the destination another equipment in point to point mode, beacuse althoug it will execute the command, outputs will return by time to the value of the inputs the emitter equipment linked in point to point.

If it can be used on a equipment with point to point mode but isn't the other receiver equipment in point to point mode. Their outputs are free to use the exit command.

It is useful when we want to activate and disable all block outputs with a single command.

Other input-output commands: INP, ADC, OUT, RST, TOG.
An active output or to "1" equivalent to contacts of closed output.
An output or to "0" equivalent to contacts of open output.

RST – Stop or outputs disabled

Description:

Stop or outputs disabled.

Examples:

SMS 102.046,RST 1   **Output 1 OFF, stop. State "0".**

       Answer:

<SMS 102.046   102.046 = Wireless controller IP.
address
  R1   Output 1, disabled, poutputs.
,
SMS 102.046,RST   **Stop or disabled all outputs.**

       Answer:

<SMS 102.046   102.046 = Wireless controller IP.
address
  OUT 00   Output disabled.

       Parameters:
       102.046 = Wireless controller IP address.
       00= Output value in hexadecimal. All disabled.

Notes:

The RST command can be used if the receiver TLM11 commands isn't the destiny of another equipment in poin to poin mode, because although it will execute the command, outputs will return by the time to the value of the inputs the emitter equipment linked point to point mode.

If it can be used on a equipment with the point to point mode activated but isn't the other equipment receiver in point to point mode. Their outputs are free to use the output commands.

It is useful when you want to activated and disable all block outputs with a single command.

Other input-output commands: INP, ADC, OUT, SET, TOG.
An active output or to state "1" equivalent to the output contacts closed.
An output disabled or to state "0" equivalent to the output contacts open.

TOG – Inverts state outputs (Toggle)

Description:

Inverts state outputs. If this "1" puts it "0". If it is to "0" change to "1".

Examples:

SMS 102.046,TOG 1   **Invierts state output 1.**

     Answer:

<SMS 102.046   102.046 = Remote control IP Address.
 T1=0   Output 1, disabled, stop.

,

SMS 102.046,TOG   **Invierts state of all outputs.**

     Answer:

<SMS 102.046   102.046 = Wireless controller IP
Address.
 OUT 0A   Actual state outputs in hexa.

    Parameters :
    102.046 = Wireless controller IP address.
    0A= outputs value in hexadecimal.

Notes:

    The command can be used if the receiver TLM11 of the command isn't the destination of another equipment in point to point, because although will execute the command, the output will retun by time value of the inputs the emitter equipment linked point to point.
    If it can be used on a equipment with the point to point mode activated but isn't the receiver of another equipment in mode point to point. Their outputs are free to use the exit command.

    It is useful when you want to activate an disabled all block outputs with single command.

    Other input-output commands: INP, ADC, OUT, SET, RST.
    An activate output or to state "1" equivalent to the output contacts closed.
    An output disabled or to state "0" equivalent to the output contacts open.

INP– Read digital input status

Description:

Read digital inputs status.

Examples:

SMS 102.046,INP 1   **Read input status 1.**

       Answer:

<SMS 102.046   102.046 = Wireless controller IP
address.
  I1=0   Input 1, disabled, stop.

SMS 102.046,INP   **Read the status of the 8 digital inouts.**

       Answer:

<SMS 102.046   102.046 = Wireless controller IP
address.
  INP=04   Actual State digital inputs.

     Parameters:
     102.046 = Wireless controller IP address.
     04= inputs value in hexadecimal. = 00000100 in binary.
     1 to 10: Number of valid input. There are 10 digital inputs.

Notes:

The command INP, can be used even in TLM11 is in poin to point mode or normal.

Other input-output commands: INP, ADC, OUT, SET, TOG.

A digital input is activated or state "1" when the input voltage is greater than 3V.

A digital input is disabled or state "0" when the input voltage is less than 2,2V.

EI – Inverts reading inputs

Description:

Configura the input reading individually per input. Iverted or not. Bit "0" ->input with inverted logic bit "1" normal with logic input.

Examples:

SMS 102.046,EI=0F   **Input. i1 to i4 inverted, i5 to i8 normals**

       Answer:

<SMS 102.046   102.046 = Wireless controller IP
address.
   EI 0F,OK   Verification command.

      Parameters:

      102.046 = Wireless controller IP address.
      0F= Configuration value bits in hexadecimal.

Notes:

The commad Ei, is used to configure the logic state reading of the inputs and invest where neccessary and essential..

No matter the mode of working.

It doesn't affect the voltage reading on the analog inputs.

Other input-output commands: INP, ADC, SET, RST, TOG.

A digital input is active or state "1" when the input voltge is greather than 3V.

A digital input is disabled or state "0" when the input voltge is less than 2,2V.

ADC – Read analog input voltage

Description:

Read the analog voltage input.

Examples:

SMS 102.046,ADC 3   **Read analog input voltage 3.**

Answer:

<SMS 102.046   102.046 = Wireless controller IP.
address
   ADC3=2,820V   EVoltaje analog input 3= 2,820V.

Parameters :
102.046 = Wireless controller IP address.
2,820V= voltage at the analog input.
ADC 3 to ADC 10: Number valid input. There are 8 analog inputs.

Notes:

The ADC command, can be used although the TLM11 this in point to point mode or normal.
The analog inputs are the same as digital except i1 and i2 are only digital. The firts analog input is i3.

Other input-output commands: INP, OUT, SET, TOG.

The valid range form measuring inputs to i3 to i8 is of 0 to 3V with a precision better than 1% and resolution of 5mV. Higher ranks are limited by the protection circuits hardware and aren't measuarable.

You can read indistinctly an input as digital or measure the voltage that is in the same without wiring changes.

To measure more voltage (max. 48V), is used a voltage divider of 1/10 to measure 30V and 1/20 to measure 60V

You can measure current uo to 50Amp, with a current sensor DMD.(Consult).

SMQ – Check quality of the radio link

Descirpction:

Take a test and check the radio link quality. See data sheet WM11.

Examples:

SMQ 102.046,PRUEBA CALIDAD   **Read analog input voltage 3.**

Answer:

< SMS 102.046 -054, OK   **Message received by default with CMS=0 (See CMS command).**

< SMS 102.046 -052 -054, OK   **Message reived with a CMS=16. Here you can to see the two RSSI in dBm.**

Parameters:

102.046 = Wireless controller IP address.
QUALITY TEST = Text for testing.
-054 = Coverage value received in dBm. (See handbook Wlink11).

Notes:

Send text message to the receiving equipment with a the destination IP address indicating that returs a SMS with the received RSSI.

The message must be terminated with <CR LF> when the eco of the serial port is enabled.

RFC – RF Channel assignment

Description:

Assigns channel Radio (RF).

Examples:

SMS 102.046,RFC=10,G   **Assigns channel 10.**

   Answer:

<SMS 102.046   102.046 = Wireless controller IP
address.
  RFC 10,G   Verification command.

   Parameters:

   102.046 = Wireless controller IP address.
   1 to 19 = Number of valid RF channel.
   ,G = Records in memory nonvolatile

Notes:

The channeling in the remote control is in spaced channels 100Khz so that effects of a Wlink11s in the 869Mhz band the channels are:

RF Channel	Frequency Khz
1	868.100
2	868.200
3	868.300
4	868.400
5	868.500
....	
19	869.900

you can use multiple systems for remote control on the same channel because with the IP address they don't bother.

Once you chance chanmels have to change the channel Wlink11s to continue communicating with remote control and of others TLM11 on the network if necessary. *For more information, see manual Wlink11s or Data sheet WM11 in* www.dmd.es.

2

FIP – Filters IP address

Description:

Add authorized equipment in filter IP addresses in SMS received.
According to the command you can send the list of equipment authorized.

Examples:

SMS 102.046,FIP=01,123.600   **Included on the L.E.A. pos 1 the IP 123.600**

    Answer:

<SMS 102.046   102.046 = Wireless controller IP address.
FIP=01,123.600, Ok   Verification command.

    Parameters:
    102.046 = Wireless controller IP to activated.
     01= position in the list. From 01 to 99.
    123.600 = Authorized IP.

SMS 102.046,FIP?   **Lauthorized Equpiment List (L.E.A.)**

    Answer:

<SMS 102.046   102.046 = Wireless controller IP address.
FIP 01,123.600   **equipment 1º authorized**
FIP 02,038.209   **equipment 2º authorized**
Ok   Finalization reply

Notes:

Filter IP addresses in the SMS received and only responds to SMS whose equipment are included in the list of equipment authorized.
The firts direction which must include it is the control Wlink11 and other of another auxiliary Wlink11 to follow him authorizing to communicate with the equipment.

The list of authorized equipment(LEA) is memorized before a power failure or equipment stoppage.
To activate filtering IP addresses use the "FIP ON" command.
To see the list of IP's, use the FIP? Command.
To disable filtering IP addresses use the "FIP OFF" command.

FIP ON – Activate IP Filter

Description:

Activate filtering IP addresses in SMS received.

Example:

SMS 102.046,FIP ON   **Active IP filtering**

      Answer:

<SMS 102.046   102.046 = Wireless controller IP
address.
    FIP ON, Ok   Verification command

      Parametrers:
      102.046 = Wireless controller IP address to configured.

Notes:

Filter IP addresses in the SMS received and only responds to SMS whose equipment are listed of equipment authorized.

It is used for other equipment external to the network can interact with the TLM11. Exist another way to filter through the RF module. See data sheet WM11.

The first direction is which must include in the control of Wlink11 and other of another auxuliary Wlink11 so you can authorize and so to communicate with the equipment.

You need to have some IP memorized in the list of authorized equipments.

The command is memorized before a power failure or stoppage of the equipment.
To disable filtering IP addresses use the "FIP OFF" command.
To see the list of IP's, use the command FIP?
Use the "FIP=xx,123.097" to include more Ips listed.
Attention: You may at some point, because of a configuration error you can't access TLM11 to commands, beacuse its Wlink11 not included in the list of authorized equipment. In this case, there is a back door to override hardware form wired IP filters. Bridge with string 09 and GND. You can now send commands, no matter what your IP. Reconfigure and don't forget to remove jumper.

FIP OFF – Disables IP Filter

Descripton:

Disables filtering IP addresses in SMS received.

Examples:

SMS 102.046,FIP OFF   **Disables IP filtering.**

      Answer:

<SMS 102.046   102.046 = Wireless controller address
IP.
FIP OFF, Ok   Verification command.

      Parameters:
      102.046 = Wireless controller IP address configured.

Notes:

The command is memorized before a power failure or equipment failure.

To activate filtering IP addresses use the "FIP ON" command.

Attention: You may at some point, because of a configuration error not yourself you can access commands TLM11, because its Wlink11 not included in the list of equipment authorized. In this case there is a back door to cancel hardware, so wired IP filters. Bridge with a string 09 and GND.You can now send commands, no matter what your IP. Reconfigure and don't forget to remove the jumper.

ADVICE FOR USE. COVERAGE.

When using the wireless TLM11 point to point mode, if you walk away too or other equipment is disconnected will light the red led indicating "Link_error" or link failure.

If you need to increase coverage up to several kilometers, you should use external antennas type GP900(Omnidirectional) or directional Yagi type or type patch as the modern SMP-918-9 (see www.dmd.es). Verify that respecs the rules of radio frequency local so as not pass the output powe antenna.

The range of the radio system depends on the installation of the antenna in Wireless controller, the location and configuration, but normally is configured for optimal coverage (96%) within a radius than 100-300m ¼ low cost, can reach up to 30Km with SMP-918-9, which covers the majority of the needs. If you need more coverage or some peculiarity specifies when in doubt, please consult your dealer or if you prefer consult factory.

The wireless controller works similar to a mobile phone, but with much less power, it is possible that somewhere in the local coverage area on occasion it may work somewhat slower or flashing led Link_errorat some moments, if you leave the weak link. To prevent this, use antennas with more gain. Sometimes just changing something the antenna position to preven it. Perform quality RF test with a Wlink11s if you think that's the problem or observe the variations of graph coverage.

Don't use the equipment to less than 1 meter from a mobile phone in operation or Wlkie, it is posible to work slower or cna't communicate. Verify that **normally mobile not interfere** with the terminal since mobile work at frequencies of 900 or 1800Mhz and terminal works at 868Mhz, but it isn't recommended to work near a mobile beacuse they usually have to 0.5W to 2W RF power and can momentarily saturate the remote control receiver.

The wireless controller don't interfere for anything to the mobile phones, because the RF power of termminals is very small: 10 mW.

CONNECTION DIAGRAMS.
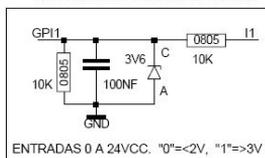
Point to point version and relays at the outputs:
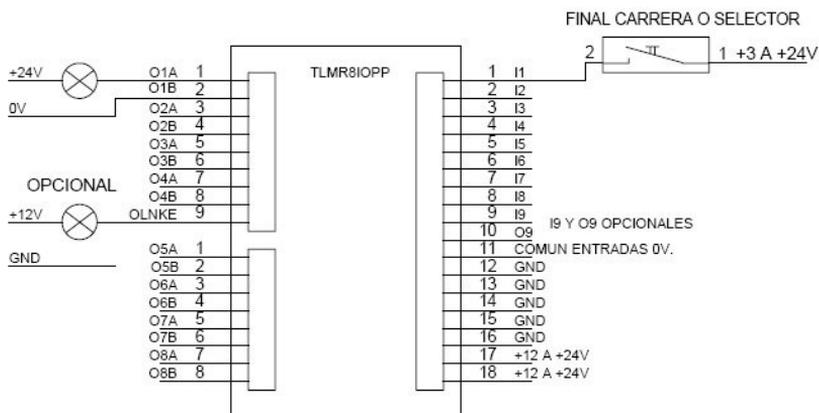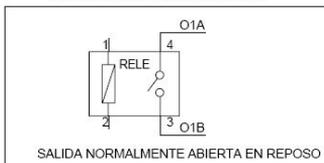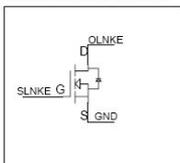
CONNECTION DIAGRAMS.

Point to point version and open collector outputs:
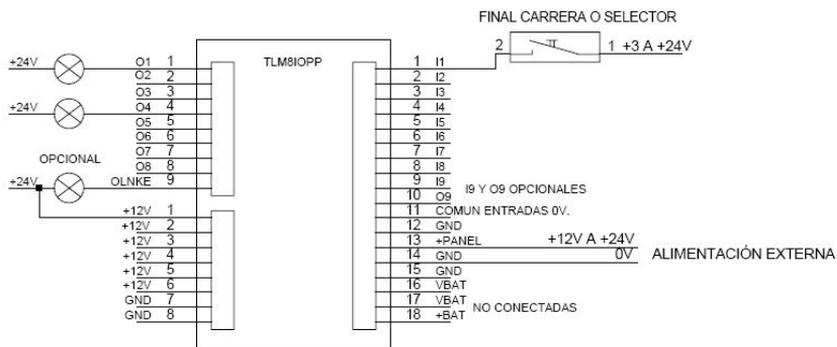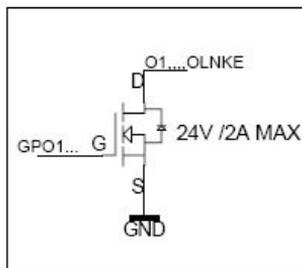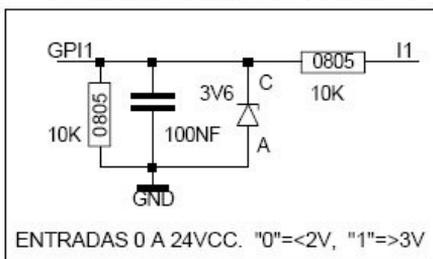
IMPROVEMENTS AND VERSIONS.

Version 1.1 06-06-2005:

Point to point system. Improvement of the input frequency and interactivity in RF of 1.3Hz to 15Hz.

Version 1.1b 10-06-2005:

Command is included "TRAZA" in manual and index is corrected.

Version 1.2c 20-07-2005:

Circuits are updated.
Include inputs leds.
It is included link_error output with TR mosfet open collector.

Version 1.67 27-12-2005:

Changes in the software:
Command outputs activate "[PB=0F".
When change inputs shipping with identification of OP for point to point links with Wlink8s.

Version 1.68 4-5-2006:

Bug: When this in a long time reception without communicatig, need to calibrate the PLL or stops communicating. It makes a Initsys_rf every 10 seconds.

Version 1.69 6-11-2006:

Correction reception command ATTLP=xxx.xxx,B,data.

Automatic detects if data is hexa or binary (by long buffer) to be compatible with older systems (ONLY Wman8T V2.0 remote control).

IMPROVEMENTS AND VERSIONS.

Version 1.70 22-5-2007:

Programmable input value (normal or inverted)
Added commands:
Invest entries: **ATSMS=102.046,C,[EI=00]**

Version 1.80 20-6-2007:

Link_Error delayed to 24 seconds

Version 1.90 24-7-2007:

Inversion programmable outputs
Added Commands:
Invest outputs: **ATSMS=102.046,C,[OI=00]**

Version 2.00 05-9-2007:

Bug correction inversion inverted outputs

Version 2.10 03-10-2007:

Bug correction inversion inverted outputs
Bug correction refreshment programmable

23-11-2007:

Manual modifications. Include wiring examples in different versions.

Version 3.00 15-01-2008:

New hardware. New cpu wireless XM6411 or XM12811 with much more power.
Compatible DmdOpen. The system is programmable in Bascom_AVR or C, for developers.
The RF system (WM11) is independent of the cpu control.

Version 3.31 15-05-2008:

Firmware for TLM11, completely rewritten. New commands, higher performance in general, long range, greater security, statistics, etc...

Version 3.32 8-02-2009:

New command "OUT?". Reading outputs to shape the state of the outputs with other equipment.

Copyrights

Hardware & Software copyright (c) 2005-2009 Digital Micro Devices, s.l.

Handbook system copyright (c) 2005-2009, Digital Micro Devices, s.l.

Digital Micro Devices

C/ Federico Garcia Lorca, 5
46136 Museros (Valencia)
Spain
Phone. Att. Client: 615 18 50 77 (Only spanish)
Web: www.dmd.es
DMD Shop Web: http://tienda.dmd.es
Email: dmd@dmd.es

3