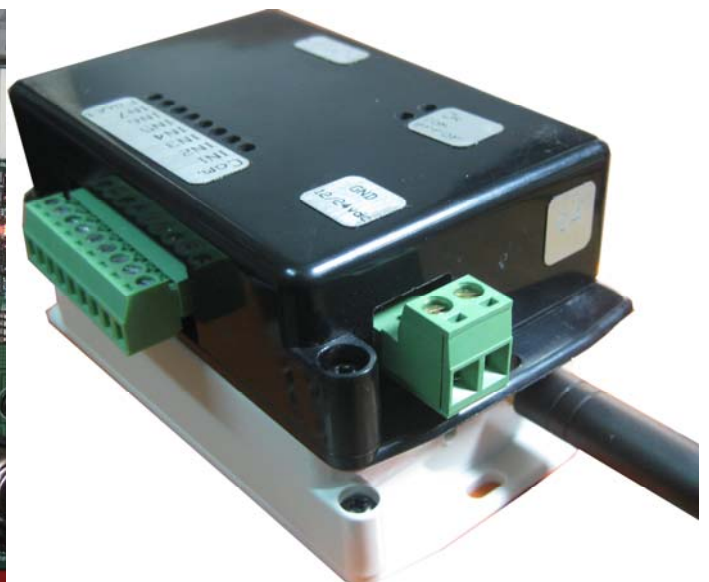


MANUAL

1

WQS Wireless Data Acquisition System

OPERATION MANUAL



Operation Manual User Guide

GERMAN ELECTRONIX

Wireless Data Acquisition System User Guide

© Advanced Control Technology
64, 9 Street, Maadi
Cairo / Egypt
Tel: +20-235-591-753
Fax: +20-235-591-753

| | |
|---------------------------------|----------|
| PACKAGE CONTENT | 3 |
| DISCRIPSTION..... | 3 |
| FEATURES | 3 |
| SPECIFICATIONS | 4 |
| INTERFACES | 4 |
| INSTALLATION | 7 |
| INSTALLATION NOTES | 7 |
| SYSTEM STRUCTURE..... | 9 |

PACKAGE CONTENT

WCT Unit including RF module and Input interface “PCB”.

WCR Unit including RF module, Output interface “PCB”, Relay board.

Flat cables with FC socket.

LED boards

User manual.

DISCRIPSTION

The WQS "Wireless Data Acquisition System "is Multi-Point-to-Point System requires only one "WCR" Receiver and at least one "WCT" Transmitter. The system supports an unlimited number of Transmitters.

The WCT is a transmitter unit that will accept up to 8 digital inputs standard contact closure or an open collector NPN transistor.

Switch status will be transmitted to the WCR unit Receiver.

The WCR RF Receiver receives RF signals from the WCR Transmitter and reconstructs the switch status.

The status will be updated in the receiver every 20 Sec

The system provide up to 10 different channel that allow 90 WCT unit to work in the same location without interfering with each other and with the same scan time 20 sec

FEATURES

10-24 VDC Voltage Input “for WCT transmitter”.

8 Digital Inputs “NPN” type, for Transmitter board

The System consist of 9 WCT units every unit have 8 digital output, total is 72 Digital output per 1 receiver board WCR.

Industrial standard design and quality guarantee

Wall mounting

Reverse Polarity protection

Screw-On SMA Antenna Connector

Status LED Health/Fault/Output

433MHz band 12 km Line of Sight ‘up on request’

Spread Spectrum up to 10 channel

Dry contact Output relay.

LED board indicator for output relay “optional”

SPECIFICATIONS

RF power: $\leq 2\text{W}$ /33dBm;

Receiving current: $< 25\text{mA}$;

Transmitting current: $< 1.5\text{A}$;

Power supply: DC 10-24Vdc for transmitter “WCT” ;5VDC and 24 VDC for receiver “WCR”

Size of RF module box: 80mm×45mm×19mm (without antenna port) “transmitter”.

Size of WCT box: 80mm×45mm×19mm “transmitter”.

Size of WCR board: 236mm×187mm×22mm “receiver”

Size of LED board: 223mm×63mm×15mm “LED board for receiver”

$\leq 6\text{Km}$ (BER=103@1200bps, when antenna is 2m above ground in open area) ;

8 Digital Inputs

9 zones every zone 8 digital output, total 72 Digital output 1A 24 V.

Scan time 20 sec for 9 WCT boards

Scan time 38 sec for 18 WCT boards, in case of 1 RF module for 2 boards “1 channel”.

INTERFACES

Transmitter (figure 2)

- Supply 10 to 24Vdc terminal “pluggable”.
- Input terminal “pluggable”.
- RF. Pin connector.
- Status LED, Green LED indicate health status, Blue LED indicates Fault status
- Inputs LEDs indication of input
- Antenna interface

Receiver (figure 1)

- Supply 5 VDC terminal “pluggable”.
- Supply 24 VDC terminal “pluggable” obligatory to get a contact, relay coils are 24VDC.
- Output terminal bocks
- RF. Pin connector.
- LED board indicator ports “FC socket”
- Status LED, Green LED indicate health status, Blue LED indicates Fault status
- Inputs LEDs indication of input

- Antenna interface

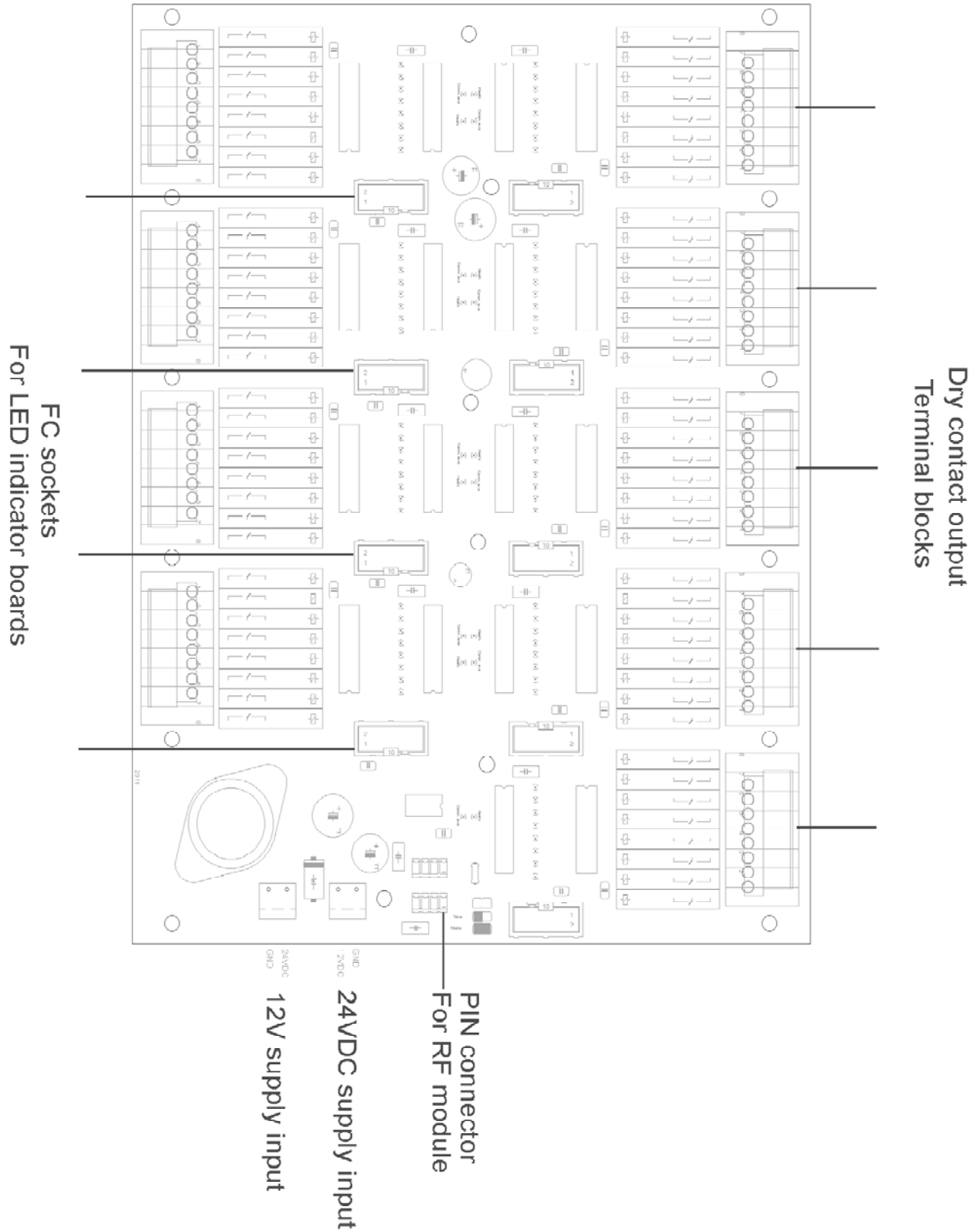


FIGURE 1

-
- THESE PHOTOS CONTAIN 4 WCR BOARDS THIS SYSTEM HOST UP TO 288 DIGITAL OUTPUTS "DRY CONTACT". ,
 - 2 RF MODULE WORK ON 2 CHANNELS
 - SCAN TIME FOR ALL CYCLE IS 20 SEC (IT TAKES 20 SEC TO UPDATE THE SIGNAL FROM WCT).
 - THE TERMINAL BOCKS ARE CLAMP CAGE TO MAKE CONNECTION EASY
 - LED BOARD MOUNTED ON THE DOOR AND CONNECTED WITH FC10 SOCKET WITH THE WCR BOARDS
 - 2 POWER SUPPLY, BACKUP BATTERIES OPTIONAL
-



LED board installed in the front of panel

INSTALLATION

- a) Mount the board of “**WCT**” Transmitter Unit.
- b) Be sure that the antenna is installed in a good place above the ground, (open area is perfect).
- c) Supply the board with 12 VDC from battery or external power supply; be sure from the polarity of connection, the board has reserved polarity protection.
- d) Connect your signal on the board, dry contact signal is recommended.
- e) Mount the board of “**WCR**” receiver unit (relay board), and LED board in a box.
- f) Connect 5VDC for supply and 24 VDC to supply relay circuits as shown in figure 1, connect FC socket to LED board as shown in figure 1
- g) Make sure that all connections are properly

INSTALLATION NOTES

- WCR board has 2 supply inputs one is 5VDC or 5 VDC based on your request we recommend 5VDC, the other supply input is 24 VDC this input supply the relay circuit in the board.
- The 5VDC power supply should be 18 to 20 Amps and it's available in local markets and we can provide it.
- The 24VDC power supply should be 1.8 Amps.
- You must measure the Volt from power supply before connecting it on the circuits it must be 5.5 V you can adjust it from the POT in the power supply



- The installation must be on this sequence to assure perfect result

First: WCR unit must be and installed and powered

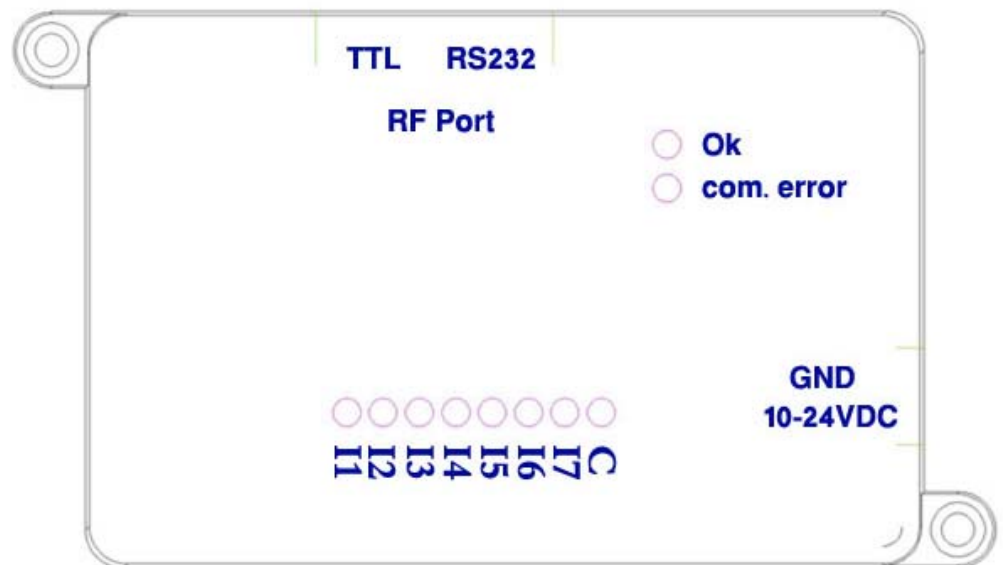
Second: power WCT unit with a small battery to make it portable “12V 2A/h”

Go to the places that you want to install it and make an input in WCT to test it

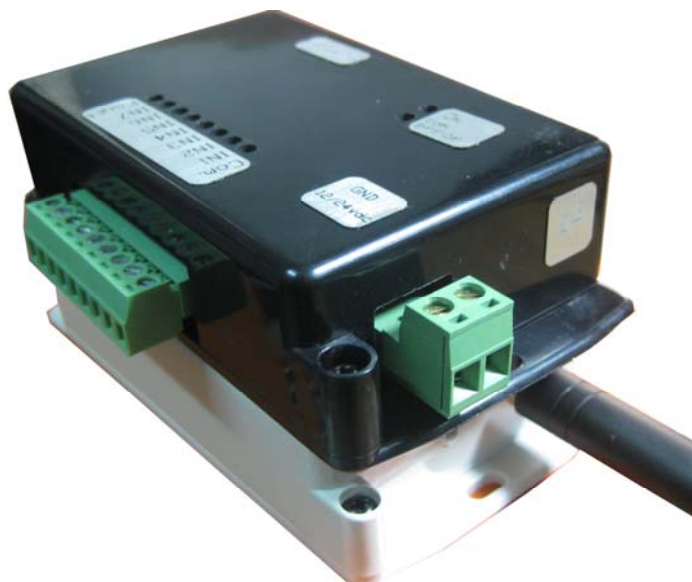
And you should receive an output in WCR unit after 20 sec max.

If you got the result in that place so it's working good if you don't get a result you should change the place try to shift the antenna little bit and give it a light sight view

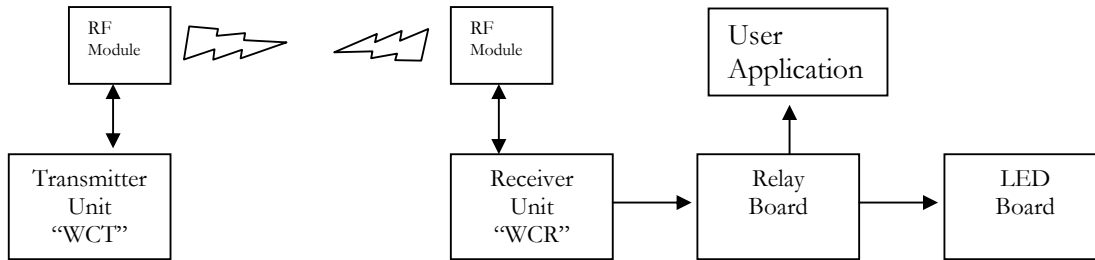
* Concrete and huge metal building has an effect on the signal so you should make the antenna out of building



WCT interfaces figure 2



SYSTEM STRUCTURE



Structure Diagram

