

OWNER'S GUIDE

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MODEL : 2-9930A

(900MHz CORDLESS TELEPHONE)

TELIAN CORPORATION

FCC ID: NPQ2-9930A
EXHIBIT A(1)
Marstech Report No. 98120D



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INDUSTRY CANADA INFORMATION

NOTICE : The Industry Canada label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operation and safety requirements as prescribed in the appropriate Terminal Equipment equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipments should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution : Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate."

NOTICE : The Ringer Equivalence Number (REN) assigned to each terminal device provides and indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the ringer Equivalence Numbers of all the devices does not exceed 5."

READ THIS BEFORE INSTALLATION

Your telephone conforms to federal regulations, and you can connect it to most telephone lines. However, each device you connect to the phone line draws power from the phone line. We refer to this power draw as the device's ringer equivalence number, or REN. The REN is shown on the label of your phone.

If you are using more than one phone or other devices on the line, add up all the RENs. If the total is more than five, your phone might not ring in rural areas, a total REN of three might impair ringer operation.

FCC STATEMENT

This telephone complies with part 68 of FCC Rules. You must, upon request, provide the FCC Registration Number and the REN to your phone company. These numbers are located on the label of your phone.

Note : You must not connect your phone to any of the followings :

- Coin-operated systems
- Party-line systems
- Most electronic key phone systems

Your telephone operates on standard radio frequencies, as allocated by the FCC. Even though the access protection code prevents unauthorized use of your phone line, it is possible for other radio units operating on similar frequencies within a certain area to unintentionally intercept your conversations and/or cause interference. This lack of privacy can occur with any cordless phone.

CAUTION

"To Reduce the Risk of Fire or Injury to Persons, Read and Follow these instructions."

1. Use only the following type and size battery(ies):
2. Do not dispose of the battery(ies) in a fire.
The cell may explode. Check with local codes for possible special disposal instructions.
3. Do not open or mutilate the battery (ies) :
Released electrolyte is corrosive and may cause damage to the eyes or skin. It may be toxic if swallowed.
4. Exercise care in handling batteries in order not to short the battery with conducting materials such as rings, bracelets, and keys.
The battery or conductor may overheat and cause burns.

IMPORTANT SAFETY INSTRUCTIONS

When using your telephone equipment, basis safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following :

1. Read and understand all instructions.
2. Follow all warnings and instructions marked on the product.
3. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use this product near water, for example, near a bath tub, wash bowl, kitchen sink, or laundry tub. in a wet basement, or near a swimming pool.
5. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
6. Slots and openings in the cabinet and the back or bottom are provided for ventilation, to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on the bed, sofa rug, or other similar surface. This product should never be placed in a built-in installation unless proper ventilation is provided.
7. This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your dealer or local power company.
8. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.
9. To reduce the risk of electric shock, do not disassemble this product, but take it to a qualified serviceman when some service or repair work is required. Opening or removing covers may expose you to dangerous

voltages or other risks, incorrect reassembly can cause electric shock when the appliance is subsequently used.

10. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions ;
 - A. When the power supply cord or plug is damaged or frayed.
 - B. If liquid has been spilled into the product.
 - C. If the product has been exposed to rain or water.
 - D. If the product does not operate normally by following the operating instructions. Adjust only those controls, that are covered by the operating instructions because improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
 - E. If the product has been dropped or the cabinet has been damaged.
 - F. If the product exhibits distinct change in performance.
11. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
12. Do not use the telephone to report a gas leak in the vicinity of the leak.

- SAVE THESE INSTRUCTIONS -

CAUTION :

TO REDUCE THE RISK OF FIRE OR INJURY TO PERSONS, READ AND FOLLOW THESE INSTRUCTIONS.

1. USE ONLY THE BATTERY(IES) INSTRUCTED.
2. DO NOT DISPOSE OF THE BATTERY(IES) IN A FIRE. THE CELL MAY EXPLODE.
3. DO NOT OPEN OR MUTILATE THE BATTERY(IES). RELEASED ELECTROLYTE IS CORROSIVE AND MAY CAUSE DAMAGE TO THE EYES OR SKIN. IT MAYBE TOXIC IF SWALLOWED.
4. EXERCISE CARE IN HANDLING BATTERIES IN ORDER NOT TO SHORT THE BATTERY WITH CONDUCTING MATERIALS SUCH AS RINGS, BRACELETS, AND KEYS.
THE BATTERY OR CONDUCTOR MAY OVERHEAT AND CAUSE BURNS.
5. CHARGE THE BATTERY(IES) PROVIDED WITH OR IDENTIFIED FOR USE WITH THIS PRODUCT ONLY IN ACCORDANCE WITH THE INSTRUCTIONS AND LIMITATIONS SPECIFIED IN THIS MANUAL.

INSTALLATION :

1. NEVER INSTALL TELEPHONE WIRING DURING A LIGHTNING STORM.
2. NEVER INSTALL TELEPHONE JACKS IN WET LOCATIONS UNLESS THE JACK IS SPECIFICALLY DESIGNED FOR WET LOCATIONS.
3. NEVERS TOUCH UNINSULATED TELEPHONE WIRES OR TERMINALS UNLESS THE TELEPHONE LINE HAS BEEN DISCONNECTED AT THE NETWORK INTERFACE.
4. USE CAUTION WHEN INSTALLING OR MODIFYING TELEPHONE LINES.

WARNING :

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS PRODUCT TO RAIN OR ANY TYPE OF MOISTURE.

= FCC AND OTHER INFORMATION =

IF REQUESTED BY THE TELEPHONE COMPANY, INFORM THEM AS FOLLOWS :

- FCC REGISTRATION NO.
(FOUND ON THE BOTTOM OF THE UNIT)
- RINGER EQUIVALENCE
(FOUND ON THE BOTTOM OF THE UNIT)
- THE PARTICULAR TELEPHONE LINE TO WHICH THE EQUIPMENT IS CONNECTED.

THIS UNIT MUST NOT BE CONNECTED TO A COIN OPERATED LINE. IF YOU ARE ON A PARTY LINE, CHECK WITH YOUR LOCAL TELEPHONE COMPANY.

RINGER EQUIVALENCE NO. (REN) :

THE R.E.N IS USEFUL IN DETERMINING THE QUANTITY OF DEVICES YOU MAY CONNECT TO YOUR TELEPHONE LINE AND STILL HAVE ALL OF THOSE DEVICES RING WHEN YOUR TELEPHONE NUMBER IS CALLED. IN MOST, BUT NOT ALL AREAS, THE SUM OF THE REN'S OF ALL DEVICES CONNECTED TO ONE LINE SHOULD NOT EXCEED FIVE (5.0). TO BE CERTAIN OF THE NUMBER OF DEVICES YOU MAY CONNECT TO YOUR LINE, AS DETERMINED BY THE REN, YOU SHOULD CONTACT YOUR LOCAL TELEPHONE COMPANY TO DETERMINE THE MAXIMUM REN FOR YOUR CALLING AREA.

IN THE EVENT TERMINAL EQUIPMENT CAUSES HARM TO THE TELEPHONE NETWORK, THE TELEPHONE COMPANY SHOULD NOTIFY THE CUSTOMER, IF POSSIBLE, THAT SERVICE MAY BE STOPPED. HOWEVER, WHERE PRIOR NOTICE IS IMPRACTICAL, THE COMPANY MAY TEMPORARILY CEASE SERVICE PROVIDING THAT THEY

1. PROMPTLY NOTIFY THE CUSTOMER.
2. GIVE THE CUSTOMER AN OPPORTUNITY TO CORRECT THE PROBLEM WITH THEIR EQUIPMENT.
3. INFORM THE CUSTOMER OF THE RIGHT TO BRING A COMPLAINT TO THE FEDERAL COMMUNICATION COMMISSION PURSUANT TO PROCEDURES SET OUT IN FCC RULES AND REGULATIONS SUBPART E OF PART 68.

THE TELEPHONE COMPANY MAY MAKE CHANGES IN ITS COMMUNICATIONS FACILITIES, EQUIPMENT, OPERATIONS OR PROCEDURES, WHERE SUCH ACTION IS REASONABLY REQUIRED IN THE OPERATION OF ITS BUSINESS AND IS NOT INCONSISTENT WITH THE RULES AND REGULATIONS IN FCC PART 68.

IF SUCH CHANGES CAN BE REASONABLY EXPECTED TO RENDER ANY CUSTOMER TERMINAL EQUIPMENT INCOMPATIBLE WITH TELEPHONE COMPANY COMMUNICATIONS FACILITIES, OR

REQUIRE MODIFICATION OR ALTERATION OF SUCH TERMINAL EQUIPMENT, OR OTHERWISE MATERIALLY AFFECT ITS USE OR PERFORMANCE, THE CUSTOMER SHALL BE GIVEN ADEQUATE NOTICE IN WRITING. TO ALLOW THE CUSTOMER AN OPPORTUNITY TO MAINTAIN UNINTERRUPTED SERVICE.

CAUTION :

TO ASSURE CONTINUED COMPLIANCE WITH FCC RULES, DO NOT MAKE ANY UNAUTHORIZED MODIFICATIONS.

WHEN PROGRAMMING EMERGENCY NUMBERS AND/OR MAKING TEST CALLS TO EMERGENCY NUMBERS :

1. REMAIN ON THE LINE AND BRIEFLY EXPLAIN TO THE DISPATCHER THE REASON FOR THE CALL BEFORE HANGING UP.
2. PERFORM SUCH ACTIVITIES IN THE OFF-PEAK HOURS, SUCH AS EARLY MORNING HOURS OR LATE EVENINGS.

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS B DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE IN A RESIDENTIAL INSTALLATION. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTIONS, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. HOWEVER, THERE IS NO GUARANTEE THAT INTERFERENCE WILL NOT OCCUR IN A PARTICULAR INSTALLATION. IF THIS EQUIPMENT DOES CAUSE HARMFUL INTERFERENCE TO RADIO OR TELEVISION RECEPTION, WHICH CAN BE DETERMINED BY TURNING THE EQUIPMENT OFF AND ON, THE USER IS ENCOURAGED TO TRY TO CORRECT THE INTERFERENCE BY ONE OR MORE OF THE FOLLOWING MEASURES :

1. REORIENT OR RELOCATE THE RECEIVING ANTENNA.
2. INCREASE THE SEPARATION BETWEEN THE EQUIPMENT AND RECEIVER.
3. CONNECT THE EQUIPMENT INTO AN OUTLET ON A CIRCUIT DIFFERENT FROM THAT TO WHICH THE RECEIVER IS CONNECTED.
4. CONSULT THE DEALER OR AN EXPERIENCED RADIO/TV TECHNICIAN FOR HELP.

- IF THERE IS ANY TROUBLE, DISCONNECT THE UNIT FROM THE TELEPHONE LINE AND CONNECT A KNOWN WORKING PHONE. IF THE KNOWN WORKING PHONE OPERATES PROPERLY, HAVE YOUR UNIT REPAIRED BY ONE OF THE SPECIFIED SINWOO TELECOM FACTORY SERVICE CENTERS. IF THE KNOWN WORKING PHONE DOES NOT OPERATE PROPERLY, CONSULT WITH YOUR TELEPHONE COMPANY.
- THE UNIT SHOULD NOT BE PLACED IN ROOM WHERE THE TEMPERATURE IS LESS THAN 5°C(41°F) OR GREATER THAN 40°C(104°F).
- THE UNIT SHOULD BE SITUATED SO THAT THE LOCATION OR POSITION DOES NOT INTERFERE WITH ITS PROPER VENTILATION. ALLOW 4"(10cm) CLEARANCE AROUND THE UNIT.
- WHEN THE UNIT IS NOT USED, TURN THE POWER OFF. WHEN LEFT UNUSED FOR LONG PERIODS OF TIME, THE BASE UNIT SHOULD BE UNPLUGGED FROM THE HOUSEHOLD AC OUTLET.
- THE ANTENNA OF THE PORTABLE HANDSET SHOULD NOT BE TOUCHED DURING USE FOR BEST PERFORMANCE.
- THE POSSIBLE CALLING DISTANCE MAY BE SHORTENED WHEN THE UNIT IS USED IN THE FOLLOWING PLACES : NEAR OBSTACLES SUCH AS HILLS, TUNNELS, UNDERGROUND, NEAR METAL OBJECTS SUCH AS WIRE FENCE.
- DO NOT PLACE HEAVY OBJECTS ON TOP OF THIS UNIT.
- PLACE THE UNIT ON A FLAT LEVEL SURFACE, OR USE THE WALL MOUNTING ADAPTOR FOR WALL INSTALLATION. DAMP BASEMENTS SHOULD ALSO BE AVOIDED.
- DO NOT SUBJECT THIS UNIT TO EXCESSIVE SMOKE, DUST, MECHANICAL VIBRATION, SHOCK, OR DIRECT SUNLIGHT.

CAUTION : Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

1. FEATURES

This section lists the major features and function of the cordless telephone.

1. 32 channel 900MHz Cordless Telephone, automatic selection of the clearest channel.
2. Manual channel change capability
3. Compandor noise suppression circuit
4. Antenna : short rubber antenna on handset, swivel antenna on base
5. Low battery alert for the handset
6. Handset battery charging indicator on the base
7. Out of range alert (handset)
8. Battery life
 - Talk time : 5 hours
 - Stand-by time : 3 days
9. Table/Wall convertible (base unit)
10. Hearing Aid Compative (HAC)
11. Use replaceable handset battery

1.1 CALLER ID FEATURES

1. Caller ID functionality (Type 1)
2. Caller ID with Call Waiting (Type 2)
3. 40 name and number memory
4. 3-line display
5. DELETE keys
6. Dial back from Caller ID record

1.2 Base Keys and indicators

1. page key
2. indicators
 - Charge/Page LED
 - INUSE LED
 - Voicemail LED
3. One RJ-11 jack
4. "T" / "P" Extension switch for Call Waiting ID set to main at factory
5. Charge contacts
6. Swivel antenna
7. Desk/Wall bracket

1.3 Keys

1. Dial keypad
 - PQRS on '7' key
 - WXYZ on '9' key

2. Caller ID display keys

Caller To Access Call Records

- 3. Review (← and →) - single press reviews one record**
- 4. Delete-pressing twice deletes record being viewed To delete all call records press delete twice when viewing ALL xx NEW xx screen**
- 5. TALK key (press once to talk, press again to hang up) putting handset in cradle also hangs up**
- 6. DIAL key**
- 7. REDIAL key**
- 8. CHAN KEY - if channel becomes noisy press chan key to find clear channel**

1.4 Switches

- 1. Receiver volume control switch normal/high on side of handset**
- 2. Handset/Ringer ON/OFF control on bottom front of handset. Factory set to OFF.**

1.5 Miscellaneous

- 1. Antenna**
- 2. Battery charge contacts**
- 3. Battery door**

= SPECIFICATION (PRELIMINARY) =

1. GENERAL

- FREQUENCY (BASE)
(PORTABLE) ☐ TX 902.125MHz ~ 903.675MHz
RX 926.125MHz ~ 927.675MHz
- NUMBER OF CHANNEL : 32 CHANNELS
- CHANNEL SPACE : 50KHz
- USABLE SENSITIVITY : BETTEER THAN -105dBm (SINAD : 20dB)
- RF OUTPUT POWER : -3.0dBm $\pm$ 3.0dBm
- TYPE OF MODULATION ☐ AUDIO : FM
DATA : MSK 1271BPS
- ID CODE : MORE THAN 10^6 (E²PROM)
- BATTERY CAPACITY : CAPACITY : 800mAH (3.6V)
TALK TIME : 5 HOURS
STAND BY TIME : 3 DAYS
- ADAPTOR : 9.0V DC / 500mA
- WEIGHT ☐ HANDSET (INCLUDING BATTERY) : 256g
BASE : 406g

2. TELEPHONE

- OFF-HOOK RESISTANCE : MAX 330 Ω (ON 20mA LOOP CONDITION)
- ON HOOK IMPEDANCE : MIN 30K Ω (FREQUENCY 15.8Hz ~ 68Hz)
- RETURN LOSS (600ohm) : MIN 12dB
- TRANSMISSION
(CCITT) - 0Km ☐ SLR : +10 dB $\pm$ 3dB
RLR : -3.0 $\pm$ 3dB
S.T : MIN + 9.5dB
- FLASH TIME : 600ms $\pm$ 10%
- DTMF DURATION : 100ms $\pm$ 10ms
- DTMF LEVEL ☐ HIGH GROUP : -5 $\pm$ 2dBm
LOW GROUP : -7 $\pm$ 2dBm
TWIST : LESS THAN 4dB
- I.D.P : 100ms $\pm$ 10ms
- L.N.D : 31 DIGITS
- MEMORY : 24 DIGITS X 20 LOCATIONS
- PAUSE TIME : 3.8 SEC
- RING TURN-ON VOLTAGE : LESS THAN 40 V_{rms}