

# OPERATION MANUAL

## Tone Amplifier AM5xs



### **Main Features:**

Standard Audio Tone Technology with Variable Interrupt Rate  
'qTrace' Tracer Tone Technology Provides Visual Accurate Wire Location  
'Touch' Button Technology  
Quick Change Battery  
Low Battery Indication  
High Impact Resistance  
Fully Sealed to IP67  
Two Year Warranty

### **Probe AM5xs**

Five Sensitivity Levels  
Digital Circuit Indication (10-350kHz)  
Selectable Filter Mode (Normal or 800-1500Hz Pass)  
Quick Change Probe Tip for Conductive/Inductive Pickup  
Headset 17A Connection with Auto Power-up

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Issue 2.02; 17/5/2012

## Introduction

The JSD TestPhone AM5 Tone Amplifier product provides a means of tracing the audible signal generated by the TG5 Tone Generator product across a copper cable network. The product features five (5) sensitivity levels with selectable band-pass filtering and either contact or inductive pickup of the audible signal which is amplified and reproduced on the internal loudspeaker or external Headset. Digital signals [25-250kHz] present on the copper cable network are also identified and indicated with both audible and visual indicators. The product also features 'qTrace' technology which allows the individual discrimination and visual indication of up to four 'qTrace' tones.



### Powering `ON` the Probe

The AM5xs is switched `on` by pressing the [**ON/OFF SENS+**] button for two (2) seconds, whereupon a **BEEP** will be generated, the amplifier is switched on at the maximum sensitivity level and the '**ON LO BAT**' indicator will flash slowly.

### Normal Tone Tracing (Audio Indication)

To trace the tone bring the probe tip close to the wire and listen for the tone being reproduced in the loudspeaker.

### Band Pass Filter

To activate the internal band pass filter (attenuating signals below 800Hz and above 1500Hz) switch `on` the AM5xs by pressing the [**ON/OFF SENS+**] button for two (2) seconds and continue holding the button for a further three (3) seconds (5 seconds in total). Confirmation of the activation will be the '**ON LO BAT**' indicator flashing fast. To deactivate the band pass filter switch the AM5xs `off`.

### `qTrace` Tone Tracing (Visual Indication)

Trace the signal by bringing the probe tip to within 100mm of the wire and observing the '**qTrace**' indicators on the AM5xs. A maximum of four (4) '**qTrace**' tones may be identified.

This function will be particularly useful when used in conjunction with a number of TG5xs units to identify individual pairs.

### Range

The AM5xs will detect a standard tone generated from the TG5xs at 12 miles and q Trace Tones at up to 15 miles.

### Sensitivity

The AM5xs is switched on at maximum sensitivity level. The sensitivity may be reduced by momentarily touching the [**ON/OFF SENS+**] button. There are five levels of sensitivity before the unit will revert to the highest setting. To prevent distortion, only use a level adequate to hear the tone.

## Data Circuits

If the AM5xs is presented to a circuit that is carrying data, the AM5xs will identify the presence of the data by illuminating the '**DATA**' indicator and producing a **BEEP-BOP** tone in the loudspeaker every two (2) seconds.

## Headset Operation

A Headset 17A or 18A Safety Helmet Version may be inserted into the rear socket of the AM5xs. Inserting either headset will switch on the AM5xs if not already active, and will mute the internal loudspeaker.

## Powering `OFF` the Probe

To switch `**off**` the AM5xs the [**ON/OFF SENS+**] button should be touched for longer than two (2) seconds, at which point the amplifier will shut down and the '**ON LO BAT**' indicator will be extinguished. Should the AM5xs remain active for longer than five (5) minutes with no button activity then it will automatically shut down to conserve battery power.

## Battery

### **Insertion**

The product is energised upon insertion of a PP3 battery and will 'sleep' in low power mode until the Probe is switched on. Access to the battery compartment can be gained by removing the two screws on the back of the unit. Insert one (PP3/6LR61/1604A Alkaline type) into the battery compartment. The compartment is polarized to prevent wrong polarity. If the unit is not going to be used for a long period of time remove the battery.

### **Replacement**

Should the internal 9V battery be low and require replacing, the product will give a steady illumination on the '**ON LO BAT**' indicator and produce a **BEEP-BEEP-BEEP** audible indication every ten (10) seconds.

## Additional Information

- The q Trace function is based on the DTMF (Dual Tone Multi Frequency) system used on all modern day telephone networks to communicate number entry when making a call to the local exchange and therefore dial a telephone number.
- The conductive tip is the slimmer tip and fitted on the AM5 and the inductive tip can be found separately in the product packaging.

## Connections

17A Headset - pin description - 1 Headset detect, 2 NC, 3 Headset out, 4 Headset out, 5 NC, 6 Ground

## Optional Extra`s

Adaptor Test 49A

Receiver Headset 17A

Receiver Headset 18A

## Visual Indications

<b>ON/ Low battery</b>	Red LED indicator `ON/ LO BAT`	
	OFF	OFF
	Slow flash	ON
	Fast flash	ON and Filter mode activated
	ON	Low battery
<b>`qTrace` indication</b>	4 Yellow LED indicators `TRACE`	
	`1` ON	`qTrace` tone 1 detected
	`2` ON	`qTrace` tone 2 detected
	`3` ON	`qTrace` tone 3 detected
	`4` ON	`qTrace` tone 4 detected
<b>Data indication</b>	Green LED indicator `DATA`	
	OFF	No data detected
	ON	Data detected

## Fault Finding

No Tone	Check output from TG5xs.and test leads
	Incorrect cable
	Disconnected cable /pair
	Pair is short circuited
Tone on one wire	One wire disconnected
Low tone on one wire, full tone on other	High resistance on low tone wire
Mains hum	Switch to band pass filter mode
Hum and tone	Possible earth fault on one or both wires
Noise with tone	Possible Crosstalk. Major cable problem
Cannot kill tone with a short	One wire is part of another pair or one wire is disconnected or is high resistance
Hiss from adjacent pair	Could be data cct e.g. ADSL. Check whether data led is illuminated

## Audible indication

Power ON/OFF or sensitivity change - **BEEP**; Data detected - **BEEP-BOP** every two (2) seconds; Battery low - **BEEP-BEEP-BEEP** every ten (10) seconds

### Tg5xs

#### DC Characteristics

Battery voltage 6V nominal (4x AA/LR6/15A Alkaline)  
 Battery supply current 140uA RMS (OFF), 20mA (ON and idle)  
 200mA (O/P short circuit)

Battery low voltage 5.0V  
 Short indication resistance <= 10kΩ (ohms)

#### AC Characteristics

Output waveform Sinusoidal (1kHz ±80Hz, 900Hz ±80Hz)  
 app. 18-20Ω (ohms) on Direct connection  
 Output impedance 31V p/p 11V RMS  
 Output voltage 470nF 'DIS O/P' output  
 Output capacitance 800mS, 600mS, 400mS and 200mS  
 Interrupt rates

#### General timings

ON/OFF button touch (power) 2 seconds (ON to OFF or OFF to ON)  
 Battery LOW indication period 10 seconds  
 Short detection indication period 0.5 seconds  
 Operating Environment -25°C - +70°C; humidity up to 80%  
 Dimensions 16.0 x 6.5 x 3.0 (cm)  
 Weight 247 (g)

### AM5xs

#### DC Characteristics

Battery voltage 9V nominal (PP3/6LR61/1604A Alkaline)  
 Battery supply current 75uA RMS (OFF), 62mA (ON and idle)  
 250mA (Max sensitivity/input signal)

Battery low voltage 7.5V

#### AC Characteristics

Speaker output power 0.25W into 8R @ 9V  
 Speaker total harmonic distortion 2% @ 0.25W  
 Filter bandwidth 800 - 1500Hz (3dB down)  
 Data detection bandwidth 25 - 250kHz

#### General timings

ON/OFF button touch (power) 2 seconds (ON to OFF or OFF to ON)  
 ON/OFF button touch (filter mode) 5 seconds (OFF to ON)  
 Battery LOW indication period 10 seconds  
 Data detection indication period 2 seconds  
 Operating Environment -25°C - +70°C; humidity up to 80%  
 Dimensions 23.5 x 5.5 x 3.0 (cm)  
 Weight 190 (g)

Supplied by: