



## DRAKE 1525 EM MICROPHONE

The R. L. Drake Company 1525 EM Microphone has an 'auto-patch' encoder built-in with a dynamic microphone element. The low impedance dynamic microphone provides excellent audio quality throughout the voice frequency range from 300 to 5,000 Hz. The 500 ohm impedance allows use with units designed for dynamic microphones and also with units with high impedance input.

The encoder provides the required dual-tone frequencies for operation with repeaters equipped for 'auto-patch'. The tone encoder is designed with a complementary MOS enhancement mode device, the Motorola MC14410. It is designed to accept digital inputs in a 4 x 3 matrix format, and to digitally synthesize the high and low band frequencies specified by telephone tone dialing systems. The inputs are originated in the Digitran® high reliability keyboard from a 4 x 3 matrix keypad, which generates 4 row and 3 column input signals in a 2 of 7 format. Master clocking for the MC14410 is achieved from a precision 1 MHz oscillator.

The encoder output tone levels are factory adjusted for the correct level when compared with average operator voice levels. Tone levels which are too high or too low may result in erratic or unreliable operation when used with a telephone dialing system. Before making any adjustment in the tone level control, determine if the microphone gain control in the transceiver is correctly set for desired voice level. If necessary, the encoder tone levels may be adjusted by removing the four screws located on the rear of the microphone case, and adjusting potentiometer R6 for desired levels.

Single frequency tones may be generated by depressing two (2) keys in the same row or column simultaneously. The encoder supply voltage is obtained from the transceiver through the microphone jack and plug. A voltage in the range of +7.5 to +15 V must be supplied to pin 4 of the microphone jack. The necessary modifications to R. L. Drake Company transceivers are detailed in the attached schematic diagrams.

The 1525 EM microphone may be used with most FM transceivers. Due to the wide variety of connectors used by various manufacturers, only the microphone wiring connections are shown in detail on the attached schematic. In some cases it may be more practical to install the R. L. Drake Company microphone jack in the transceiver. The matching jack may be purchased from the R. L. Drake Company, Part No. 3281735.

### SPECIFICATIONS:

Microphone Element:	Low impedance – dynamic
Frequency Response:	300-5000 Hz
Output Impedance:	500 ohms
Microphone Output Levels:	-72 dBm per microbar. Approximately 3 mV (-47 dBm) with average voice level.
Encoder Audio Level:	Adjustable from approximately 1 mV to 5 mV with internal potentiometer.
Frequency Tolerance:	Better than ±1% from -20°C to +50°C.
Supply Voltage:	+7.5 to +15 V obtained through microphone cable from transceiver.
Encoder Keyboard:	High reliability Digitran® keyboard.
Dimensions:	2.6" x 3.5" x 1.7" 6.6 x 8.9 x 4.3 cm. Weight: 8 oz. (.227 kg.)

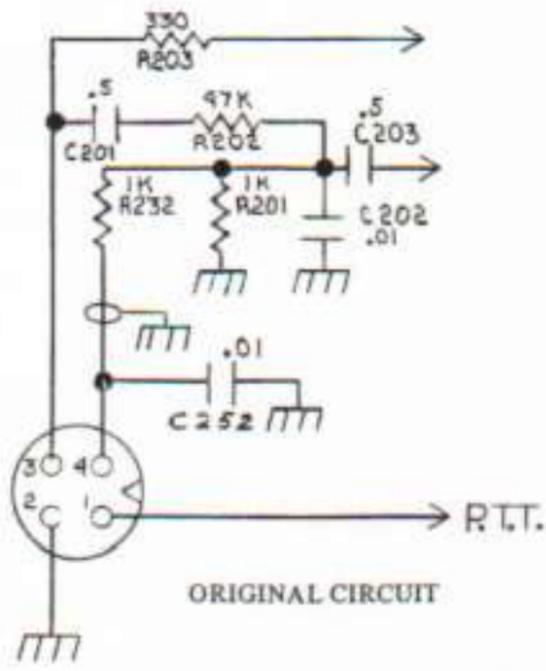
### OUTPUT FREQUENCY TABLE

KEY	LOW		HIGH	
	FREQUENCY		FREQUENCY	
	Hz		Hz	
1	697	plus	1209	When a single digit key is depressed output frequency is a combination of low frequency and high frequency tones indicated in table.
2	697	plus	1336	
3	697	plus	1477	
4	770	plus	1209	
5	770	plus	1336	
6	770	plus	1477	
7	852	plus	1209	
8	852	plus	1336	
9	852	plus	1477	
0	941	plus	1336	
*	941	plus	1209	
#	941	plus	1477	

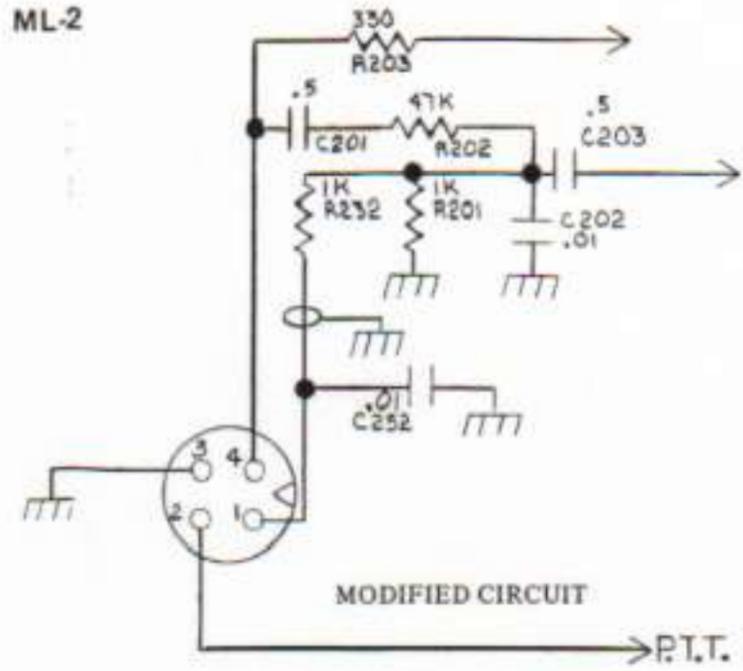
### SINGLE TONE OUTPUT

Single tone output is available by depressing two keys simultaneously in any row or column.

KEYBOARD			
1	2	3	697
4	5	6	770
7	8	9	852
*	0	#	941
1209	1336	1477	Frequency Hz

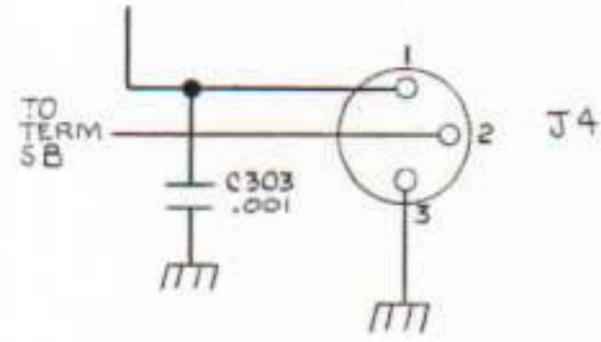


ORIGINAL CIRCUIT



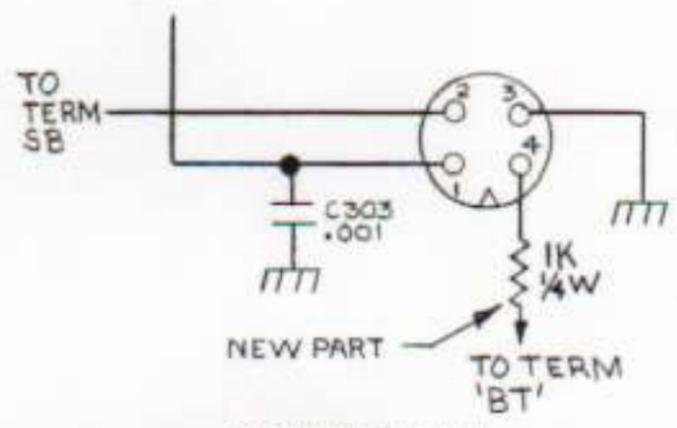
MODIFIED CIRCUIT

ML-2



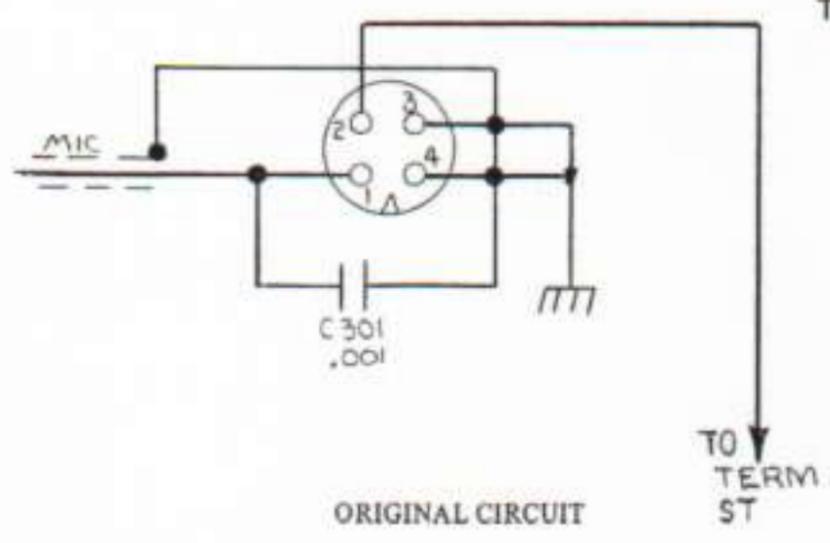
ORIGINAL CIRCUIT

TR-22



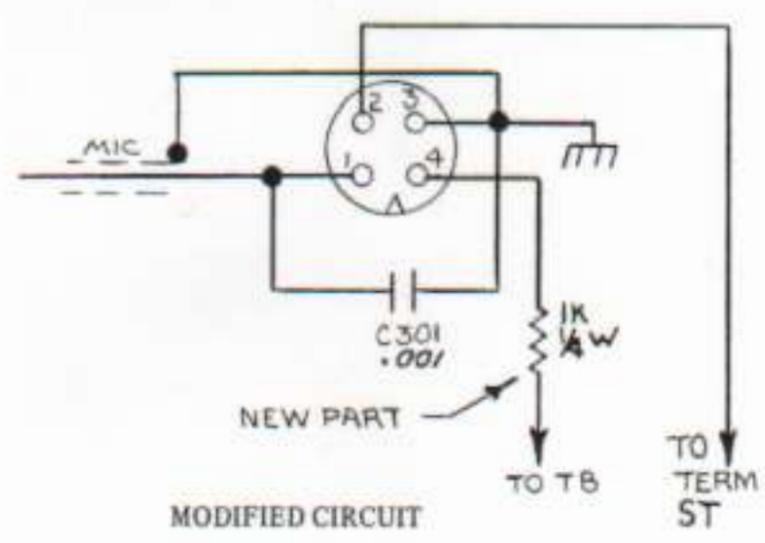
MODIFIED CIRCUIT

NEW PART



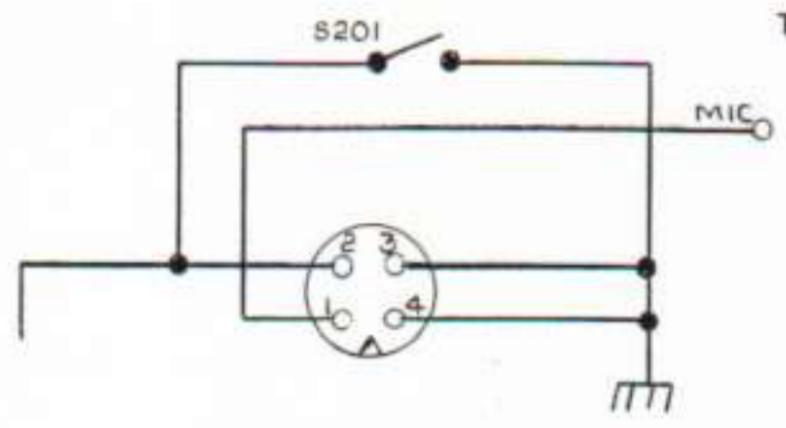
ORIGINAL CIRCUIT

TR-22C



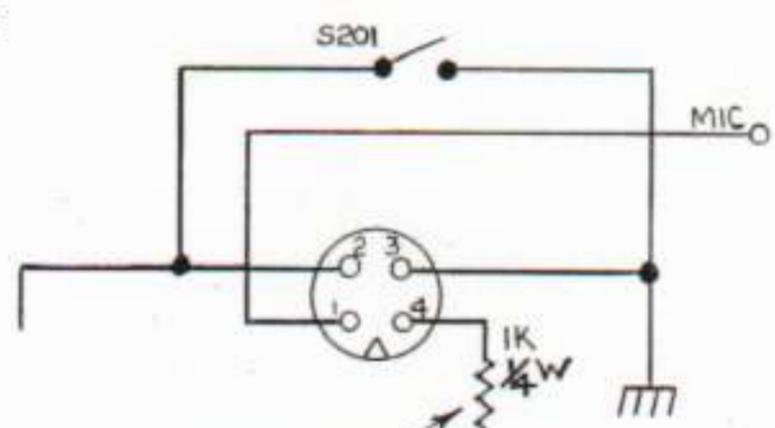
MODIFIED CIRCUIT

NEW PART



ORIGINAL CIRCUIT

TR-72



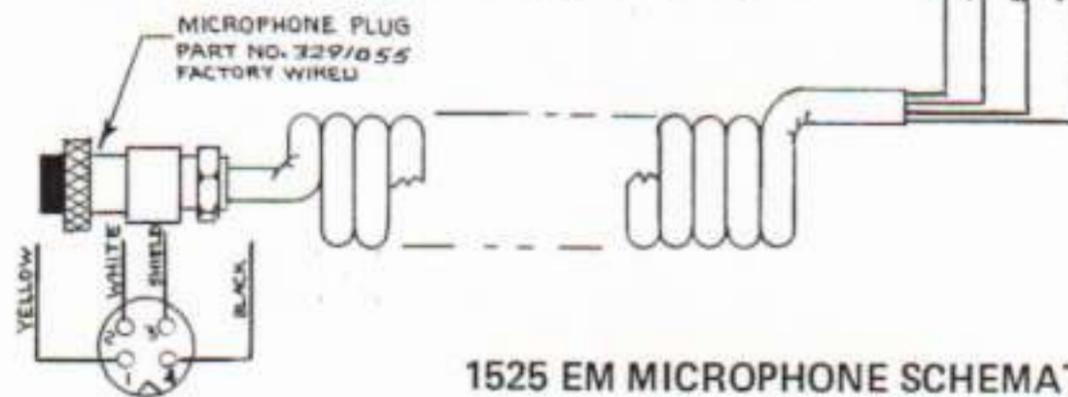
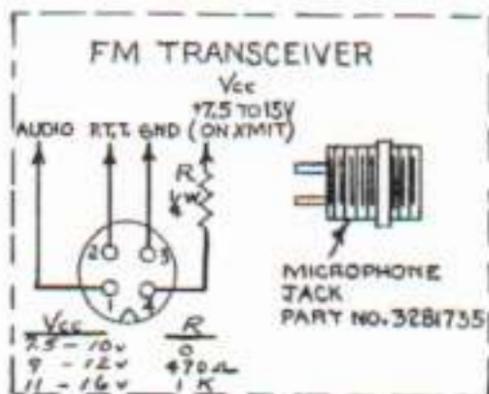
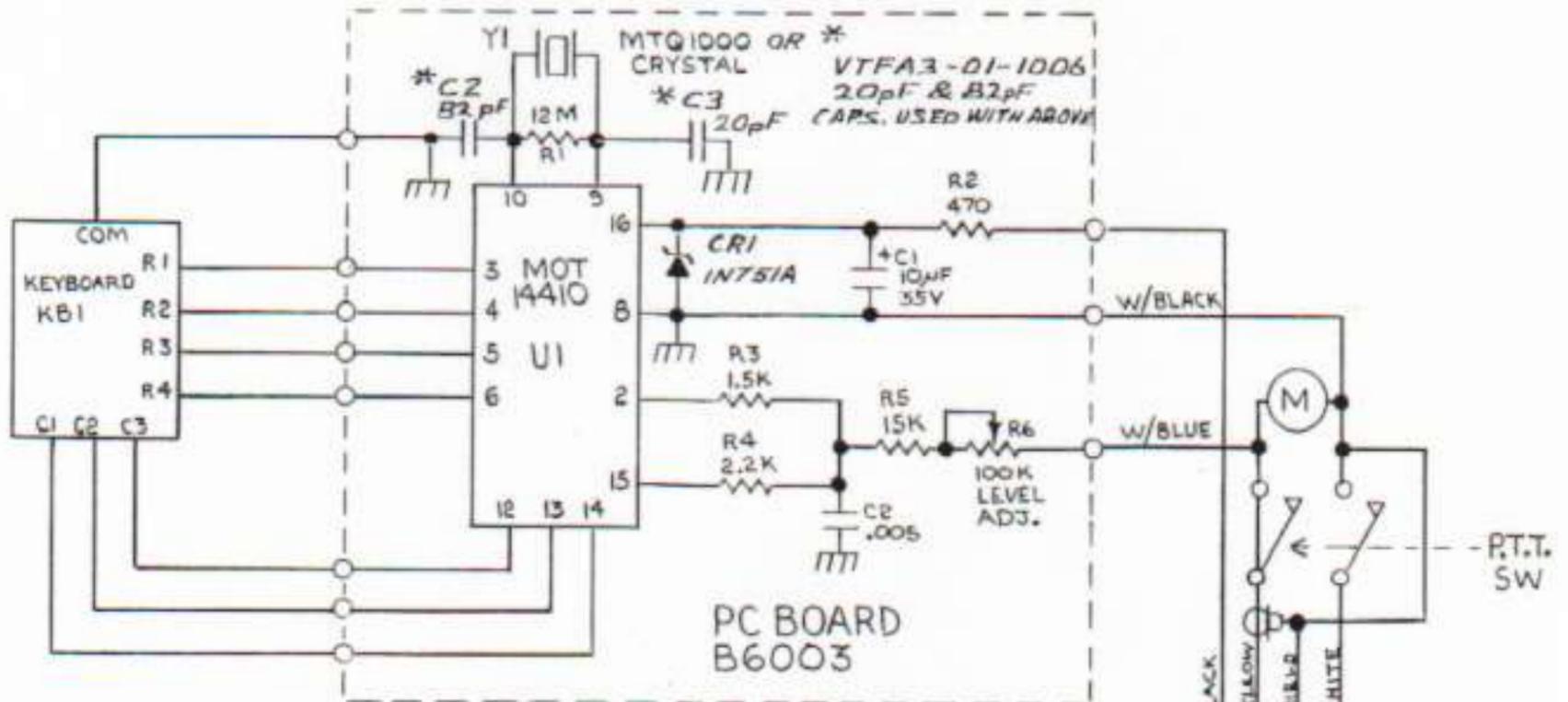
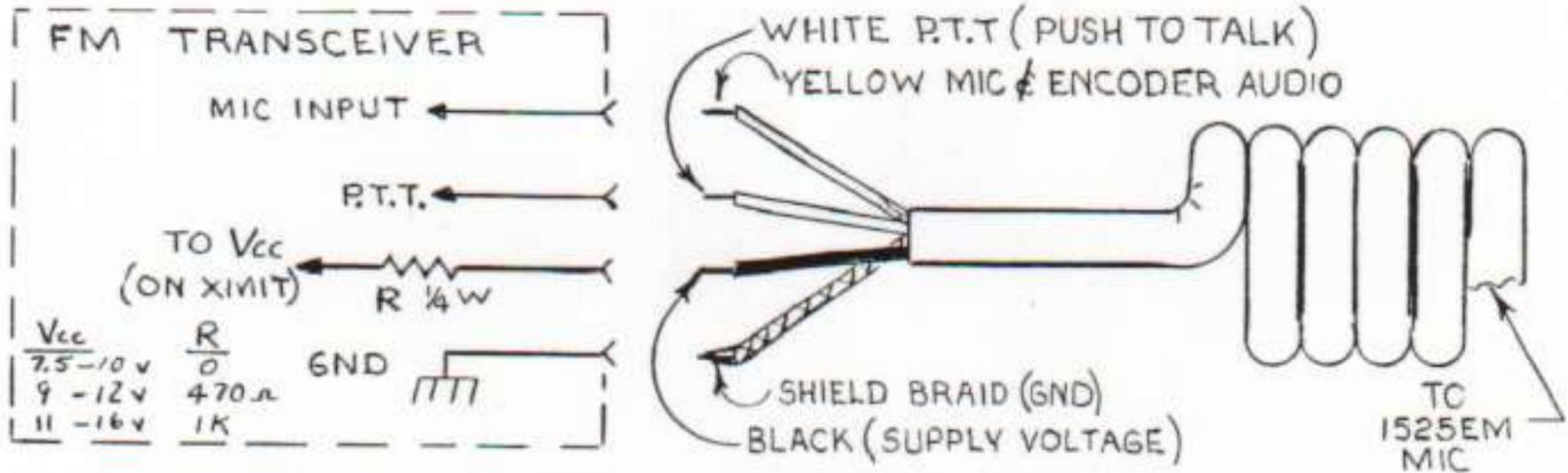
MODIFIED CIRCUIT

NEW PART



TR-33C AND UV-3  
 NO MODIFICATION REQUIRED  
 UNITS ARE FACTORY-WIRED FOR USE  
 WITH DRAKE 1525 EM MICROPHONES

FM TRANSCEIVERS OTHER THAN DRAKE



1525 EM MICROPHONE SCHEMATIC



## LIMITED WARRANTY

*R. L. DRAKE COMPANY warrants to the original purchaser that this product shall be free from defects in material (except tubes and RF output transistors) or workmanship for ninety (90) days from the date of original purchase.*

*During the warranty period the R. L. DRAKE COMPANY or an authorized Drake service facility will provide free of charge both parts (except tubes and RF output transistors) and labor necessary to correct defects in material or workmanship.*

*To obtain such warranty service, the original purchaser must:*

- (1) Complete and send in the Warranty Registration Card.*
- (2) Notify R. L. DRAKE COMPANY or its nearest authorized service facility, as soon as possible after discovery of a possible defect, of:*
  - (a) The model number and serial number, if any;*
  - (b) The identity of the seller and the approximate date of purchase;*
  - (c) A detailed description of the problem, including details on the electrical connection to associated equipment and the list of such equipment.*
- (3) Deliver the product to the R. L. DRAKE COMPANY or the nearest authorized service facility, or ship the same in its original container or equivalent, fully insured and shipping charges prepaid.*

*Correct maintenance, repair and use are important to obtain proper performance from this product. Therefore, carefully read the Instruction Manual. This warranty does not apply to any defect that R. L. DRAKE COMPANY determines is due to:*

- (1) Improper maintenance or repair, including the installation of parts or accessories that do not conform to the quality and specifications of the original parts.*
- (2) Misuse, abuse, neglect or improper installation.*
- (3) Accidental or intentional damage.*

*All implied warranties, if any, terminate ninety (90) days from the date of the original purchase.*

*The foregoing constitutes R. L. DRAKE COMPANY'S entire obligation with respect to this product, and the original purchaser and any user or owner shall have no other remedy and no claim for incidental or consequential damages. Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you.*

*This warranty gives specific legal rights and you may also have other rights which vary from state to state.*

**R. L. DRAKE COMPANY**  
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