

TECHNICAL MANUAL

**OPERATORS, ORGANIZATIONAL, DIRECT SUPPORT,
AND GENERAL SUPPORT MAINTENANCE
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)**

FOR

**PATTERN GENERATOR PG-404
(STELMA MODEL PG-404)**

This manual contains copyright material reproduced by permission of Stelma, Inc.

TECHNICAL MANUAL }
 No. 11-6625-2814-14&F }

HEADQUARTERS
 DEPARTMENT OF THE ARMY
 WASHINGTON, DC, 17 April 1981

**OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT,
 AND GENERAL SUPPORT MAINTENANCE
 (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)
 FOR
 PATTERN GENERATOR PG-404
 (STELMA MODEL PJ-404)
 Current as of 24 September 1980**

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN.: DRSEME-MQ, Fort Monmouth, NJ 07703.

In either case, a reply will be furnished direct to you.

Table of Contents

	Paragraph	Page
CHAPTER 1. INTRODUCTION		
SECTION I. General		
Scope	1-1	1-1
Index of Publications	1-2	1-1
Maintenance Forms, Records, and Reports	1-3	1-1
Reporting Equipment Improvement Recommendations (EIR)	1-4	1-1
Administrative Storage	1-5	1-1
Destruction of Army Electronics Materiel	1-6	1-1
II. Description and Data		
Purpose and Use	1-7	1-1
Description	1-8	1-1
CHAPTER 2. SERVICE UPON RECEIPT AND INSTALLATION		
SECTION I. Preparation for Use		
Unpacking	2-1	2-1
Electrical Connections	2-2	2-1
II. Installation Instructions		
Operating the Pattern Generator	2-3	2-1
Preliminary Setup	2-4	2-2
Operating Procedures	2-5	2-2
Interpreting Indications	2-6	2-2
Battery Charging Procedure	2-7	2-3
CHAPTER 3. PRINCIPLES OF OPERATION		
General	3-1	3-1
Overall Function Description	3-2	3-1
Time Base Generator	3-3	3-1
Distortion Generator	3-4	3-1
Address Counter	3-5	3-4
Fox Message Generator	3-6	3-4
Shift Register	3-7	3-4
Output Circuits	3-8	3-5
Polar Output Circuit	3-9	3-5
Power Supply Inverter	3-10	3-5
High-Level Output Circuit	3-11	3-5
Battery Test Circuit	3-12	3-6

This manual is an authentication of the manufacturer's commercial literature which, through usage has been found to cover the data required to operate and maintain this equipment. Since the manual has not been prepared in accordance with military specifications and AR 310-3, the format has not been structured to consider levels of maintenance.

	Paragraph	Page
CHAPTER 4. MAINTENANCE INSTRUCTIONS		
Maintenance Practices	4-1	4-1
Test Equipment Required	4-2	4-1
Performance Test.....	4-3	4-2
Repair.....	4-4	4-3
Time Base Oscillator Frequency Adjustment	4-5	4-7
Strapping Option.....	4-6	4-7
APPENDIX A. REFERENCES.....	4-6	4-7
APPENDIX B. COMPONENTS OF END ITEM LIST (Not applicable)		
APPENDIX C. ADDITIONAL AUTHORIZATION LIST (Not applicable)		
APPENDIX D. MAINTENANCE ALLOCATION		
SECTION I Introduction.....		D-1
II. Maintenance Allocation Chart for Pattern Generator PG -404		D-3
III. Tool and Test Equipment Requirements for Pattern Generator PG-404		D-4
APPENDIX E. REPAIR PARTS LIST		
SECTION I General.....		E-1
II. Parts Number-National Stock Number Cross Reference Index.....		E-5
APPENDIX F. EXPENDABLE SUPPLIES AND MATERIALS LIST (Not applicable)		

LIST OF ILLUSTRATIONS

<i>Figure</i>	<i>Title</i>	<i>Page</i>
1-1	Pattern Generator, Model PG-404	0-1
2-1	Pattern Generator--Front Top, and Back Views.....	2-4
3-1	Pattern Generator, Block Diagram	3-2
3-2	Pattern Generator, Timing Diagram.....	3-3
4-1	Pattern Generator, Wiring Diagram	4-5
4-2	Timing and Data Register Assembly A, Component Location Diagram	4-5
4-3	Distortion and Message Generator Assembly A2, Component Location Diagram	4-6
4-4	Pattern Generator, Top View, Component Location	4-9
4-5	Location Of Strapping Terminal and Resistor R23 Through R26 Assembly	4-9
FO-1	Timing and data Register Assembly A1, Schematic Diagram.....	Located in
FO-2	Distortion and Message Generator Assembly A2, Schematic Diagram.....	back, of manual

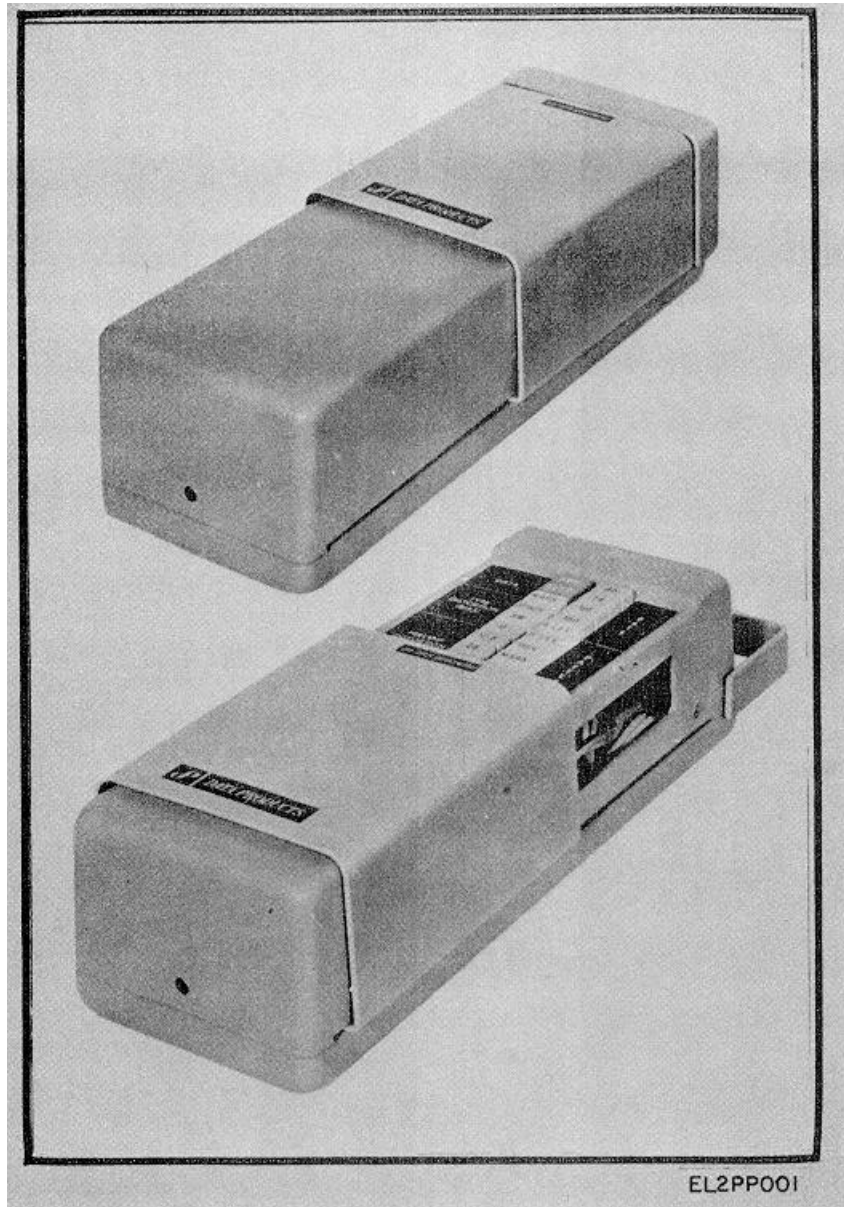


Figure 1-1. Pattern Generator Model PG-404.

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope

This manual describes Pattern Generator (Stelma Model PG-404) as a compact, portable, alternating current battery-operated test set that generates various test signal. This manual provides instructions for operation, maintenance, and performance testing. Throughout this manual, the PG-404 is referred to as Pattern Generator.

1-2. Indexes of Publications

a. *DA Pam 310-4.* Refer to the latest edition of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

b. *DA Pam 310-7* Refer to DA Pam 310-7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

1-3. Maintenance Forms, Records, and Reports

a. *Reports of Maintenance and Unsatisfactory Equipment.* Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750, The Army Maintenance Management System.

b. *Report of Item and Packaging Discrepancies.* Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/DLAR 4140.55/NAVMATINST 4355.73/AFR 400-54/MCO 4430.3E.

c. *Discrepancy in Shipment Report (DISREP) (SF 361).* Fill out and forward Discrepancy in Shipment

Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33BAFR 75-18/MCO P4610.19C and DLAR 4500.15.

1-4. Reporting Equipment Improvement Recommendations (EIR)

If your Pattern Generator needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Tell us why a procedure is hard to perform. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, NJ 07703. We'll send you a reply.

1-5. Administrative Storage

Administrative storage of equipment issued to and used by Army activities will have preventive maintenance performed before storing. When removing the equipment from administrative storage, the performance test and adjustment procedure should be performed to assure operational readiness. Original packing case may be used when repacking equipment for shipment for repair.

1-6. Destruction of Army Electronics Materiel

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

Section II. DESCRIPTION AND DATA

1-7. Purpose and Use

The Pattern Generator PG-404 is a compact, portable, ac/battery-operated test set that generates various telegraph test signal patterns having predetermined and controllable characteristics. The Pattern Generator is designed for use with associated data measuring instruments (such as Data Products' Data Analyzer DA-404) to test and evaluate performance of teletype-writer and data communication systems or equipment. The unit is illustrated (fig. 1-1) with its cover open and closed.

1-8. Description

a. Basically, the Pattern Generator consists of four principal sections: sign pattern generator, distortion generator, output circuits, and power supply.

(1) Signal Pattern Generator. The unit can generate the following telegraph output signal patterns:

(a) Continuous Mark or Space.

(b) Reversals-alternate Mark and Space bit in a serial stream.

(c) FOX message-a 5-level format and (strap selectable) one or two 7-levels or one 8-level format.