



OPERATING MANUAL

6703 RF SYNTHESIZER
#14919-201, Rev A

6703 RF Synthesizer



Timing, Test & Measurement



6703 RF SYNTHESIZER

CHAPTER ONE

Introduction/Product Overview	3
-------------------------------------	---

CHAPTER TWO

Installation	7
--------------------	---

CHAPTER THREE

Operation	9
-----------------	---

CHAPTER FOUR

Specifications	10
----------------------	----



Chapter One

INTRODUCTION/PRODUCT OVERVIEW

This Operating Manual contains procedures and descriptive information for proper installation and operation of the Datum 6703 RF Synthesizer.

The Datum 6703 RF Synthesizer accepts a 10 MHz input from an external frequency reference source and synthesizes three buffered outputs of 10.23 MHz.

OPERATING MANUAL SUMMARY

This Operating Manual is divided into the following chapters:

A. CHAPTER ONE – INTRODUCTION/PRODUCT OVERVIEW

This chapter includes a general description of the Datum 6703 and provides some basic product information.

B. CHAPTER TWO – INSTALLATION

Describes initial inspection and installation.

C. CHAPTER THREE - OPERATION

Describes the function of the indicators.

D. CHAPTER FOUR – SPECIFICATIONS

Provides detailed specifications for of the Datum 6703.

PURPOSE OF EQUIPMENT

The Datum 6703 RF Synthesizer uses Datum's high performance synthesizer and distribution technology. The 1 U (1.75" high) module houses a set of telecom synthesizers and framing/formatting output circuits. Several shelves may be daisy chained to provide additional independently buffered outputs. The level of the input signal is monitored, providing a visual indicator of input signal presence as well as a summary fault (form-C relay) for each shelf.

A complete list of performance characteristics is provided in Chapter Four.



INSTRUMENT IDENTIFICATION

The model number 6703 may be followed by a slash (/) and a three-digit number to indicate an option that is supplied within the instrument.

PREPARATION FOR SHIPMENT

To turn off the Datum 6703 prior to shipment, remove the AC power from the plug on the rear panel. Package the instrument in its original packing if possible. If the original packing materials are not available, pack in a reinforced cardboard carton using foam to take up any space inside the carton. Do not use foam popcorn or crushed paper for packing.

If the instrument is being returned to Datum, contact the Service Department at 1-800-938-9888 for product return information.

TYPOGRAPHICAL AND OTHER CONVENTIONS

This Operating Manual uses the following conventions:

Acronyms and Abbreviations – Terms are spelled out the first time they appear in this Operating Manual. Thereafter, only the acronym or abbreviation is used. In addition, the glossary defines the acronyms and abbreviations.

Revision Control – The title page lists the revision (Rev) letter and part number of this Operating Manual. Table 1-1 describes the typographical conventions that this Operating Manual uses to distinguish between the different types of information according to how they are used.

TABLE 1-1. TYPOGRAPHICAL CONVENTIONS

WHEN TEXT APPEARS THIS WAY ...	IT MEANS ...
<i>Datum 6703 Operating Manual</i>	The title of a document or the name of a product
Press the Enter key.	A named keyboard key. The key name is shown as it appears on the keyboard. An explanation of the key's acronym or function immediately follows the first reference to the key, if required.
Press the Print Scrn key.	
<i>A re-timing</i> application ...	A term or a word being emphasized.
Datum does not recommend ...	A word or term given special emphasis so that you do not miss the idea being presented.



WARNINGS, CAUTIONS, RECOMMENDATIONS, AND NOTES

Warnings, Cautions, Recommendations, and Notes attract attention to essential or critical information in this Operating Manual. The types of information included in each are explained as follows:



WARNING ...

All warnings have this symbol. Do not disregard warnings. They are installation, operation, or maintenance procedures, practices, or statements that if not strictly observed, may result in personal injury or loss of life.



ELECTRICAL SHOCK HAZARD ...

All electrical shock hazard warnings have this symbol. To avoid serious personal injury or death, do not disregard electrical shock hazard warnings. They are installation, operation, or maintenance procedures, practices, or statements that if not strictly observed, may result in personal injury or loss of life.



CAUTION ...

All cautions have this symbol. Do not disregard cautions. They are installation, operation, or maintenance procedures, practices, conditions, or statements that if not strictly observed, may result in damage to or destruction of equipment or may cause a long-term health hazard.



CAUTION ...

All Electrostatic Discharge (ESD) cautions have this symbol. They are installation, operation, or maintenance procedures, practices, conditions, or statements that if not strictly observed, may result in electrostatic discharge damage to, or destruction of, static sensitive components of the equipment.



RECOMMENDATION ...

All recommendations have this symbol. Recommendations indicate manufacturer-tested methods or known functionality. They contain installation, operation, or maintenance procedures, practices, conditions, or statements that provide you with important information for optimum performance results.



NOTE ...

All notes have this symbol. Notes contain installation, operation, or maintenance procedures, practices, conditions, or statements that alert you to important information which may make your task easier or increase your understanding.



6703

WHERE TO FIND ANSWERS TO PRODUCT AND DOCUMENT QUESTIONS

If you believe that this product is not performing as expected, or if you have comments about this Operating Manual, please contact your Datum representative or sales office

We appreciate your suggestions on ways to improve this Operating Manual. Please mark or write your suggestions on a copy of the page and mail or fax it to ...

Datum – Timing, Test & Measurement
34 Tozer Road
Beverly, MA 01915-5510
US Toll Free: 1-800-938-9888
Phone: +1-978-927-8220
Fax: +1-978-927-4099
E-mail: ttmsales@datum.com

Thank you for providing the information.



NOTE ...

Datum offers a number of applicable training courses designed to enhance product usability. Contact your Datum representative or sales office for a complete list of courses and outlines.



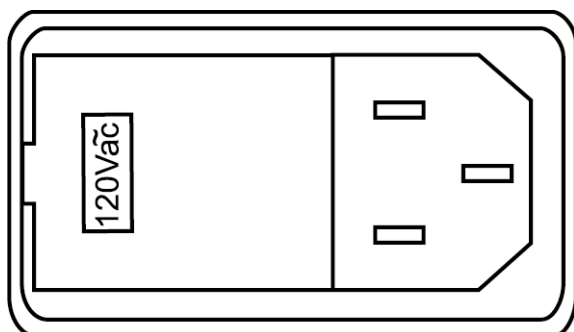
Chapter Two

INSTALLATION

The DATUM 6703 is designed to be mounted in a standard 19-inch equipment rack and take up 1U of vertical space (1.75"). The chassis depth is 10 inches.

The DATUM 6703 is powered from an AC source by a detachable power supply cord. The power cord is the disconnect device. Refer to Chapter Four for power supply requirements. The AC fuses are located inside the AC connector/filter on the rear panel. The hot and neutral lines are fused separately. To change fuses open the cover on the rear panel by applying a screwdriver to the cover slot. Once the cover is open, each fuse holder may be removed for inspection or replacement. Replace only with a 2 A, 250 V fuse as specified in Chapter Four.

FIGURE 2-1. INPUT FILTER/FUSES/VOLTAGE SELECTOR



The DATUM 6703 input voltage is from 90 to 250 VAC.



CAUTION ...

Do not use the voltages labeled "100" or "230," as they are not connected.



SIGNAL CONNECTIONS

The 6703 takes a 10 MHz sinusoidal input to produce three independently buffered sinusoidal outputs at 10.23 MHz.

FIGURE 2-2. SIGNAL CONNECTIONS



With the unit powered and provided with the proper input, the green POWER indicator on the front panel will illuminate. The rear panel 9 pin "D" connector is not functional.



Chapter Three

OPERATION

The Datum 6703 RF Synthesizer functions are described in this chapter.

FIGURE 3-1. 6703B RF SYNTHESIZER REAR PANEL



POWER – LED on the front panel to indicate that power is applied. There is no power switch on the 6703. When power is connected, power is ON.

FUNCTION – The 6703 takes a 10 MHz sinusoidal input (BNC 1) and it produces three independently buffered sinusoidal outputs at 10.23 MHz (BNC 2,3 & 4).

The output frequency accuracy and stability are dependent upon the 10 MHz input's frequency accuracy and stability. The 10.23 MHz synthesizer will phase lock to an input signal of 10 MHz \pm 1000Hz, with amplitude of 0.5 Vrms to 1 Vrms.



Chapter Four

SPECIFICATIONS



NOTE ...

All performance is at an ambient temperature of 25°C.

RF OUTPUTS

Frequency	10.23 MHz
Level	1 V rms (nominal)/50
Connector	BNC

RF INPUT

Frequency	10 MHz
Level	1 V rms (nominal)/50
Connector	BNC

POWER

Operating voltage	90 to 250 VAC
Power	<60W Max, <25W quiescent

Fuses	
AC Input	2A, 250V, slow acting, 5x20mm or 0.25" x 1.25"

MECHANICAL

Height	1.75" (1 U)
Width	19" (including rack mount ears)
Depth	10"
Weight	<10 lbs

ENVIRONMENT

Operating Temperature	0 to 55°C
Relative Humidity	0 to 95%, non-condensing

