

SECTION I

GENERAL INFORMATION

1.1 INTRODUCTION

This Model 460 Digital STL Transmitter User's Guide is arranged in eight sections, as follows:

Section I: General Information

A general description of the DIGITAL Transmitter, its specifications, general information on the FCC designator, warranty and damage claim procedures, and technical support information.

Section II Getting To Know Your Model 460 and Related Equipment

Overview of the various system components of the DIGITAL Transmitter and related equipment. Control and Indicator functions, basic component functions, and their interconnection.

Section III: Pre-Installation Checkout

Some basic test methodology on the DIGITAL Transmitter and its related equipment. The user should find it useful to perform the tests in this section with all the DIGITAL Transmitter equipment on a lab bench.

Section IV: Programming The DIGITAL Transmitter

Detailed description of setup procedures of various DIGITAL Transmitter system parameters, as well as enabling of optional features.

Section V: Installation

Instruction for installing and adjusting various system components of the DIGITAL Transmitter.

Section VI: Theory of Operation

TBD.

Section VII: Theory of Operation

Basic description of I/O control circuits.

Section VIII: Maintenance and Repair

Describes routine maintenance procedures and tools and equipment requirements.

1.2 EQUIPMENT DESCRIPTION

The DIGITAL Transmitter is part of a combined Digital Studio to Transmitter Link that provides broadcasters with six uncompressed program channels and a data channel to meet the requirements of consolidated operations. It provides the maximum number of high quality program channels over a single RF channel.

The TFT Digital STL consists of a transmitter and receiver pair that accommodates up to three AES/EBU (stereo) inputs or up to six discrete audio channels. The transmitter has a 2-Watt output and delivers them uncompressed in a configurable digital method to the receiver. Sample rates of 32, 44.1, and 48 ks/s are supported. The method of modulation is a function of the number of channels and sample rate and is configurable from a front panel jack that can be connected to a laptop PC. The RF system is frequency agile and set by software in the transmitter and receiver.

The frequency and input/output configuration of both the transmitter and receiver can be set for optimum values of threshold and modulation via a laptop PC that can be connected to a modem. User-friendly software with a graphical user interface (GUI) is provided with each system. The transmitter and receiver can be remotely controlled over an internet or LAN connection.

1.3 SPECIFICATIONS

The DIGITAL Transmitter performance and physical specifications are listed in Table 1.3-1.

Table 1.3-1. DIGITAL TRANSMITTER Specifications

SYSTEM

Frequency 940-960 MHz (other frequencies available)
Step Size 12.5 kHz
Frequency Stability ± 5 ppm (± 0.0005)%
Occupied Bandwidth \leq 500 kHz
I/O AES/EBU (XLR, 110 Ω)
Analog (XLR, 600 Ω)

Linear Channels	Sample Rate (ks/s)	Modulation Type
6	32	256 QAM
4	48	256 QAM
4	44.1	256 QAM
4	32	64 QAM
2	48	16 QAM
2	44.1	16 QAM
2	32	BPSK

Frequency Response 0.5 Hz to 22.5 kHz (48 ks/s)
0.5 Hz to 15 kHz (32 ks/s)
Distortion < 0.005% at 1 kHz
Noise > 92 dB
Dynamic Range 90 dB static
Crosstalk < 80 dB
Time Delay < 1 msec
Data Channel 9600 baud, 9-pin, RS-232

TRANSMITTER

Output Power > 2 Watts (nominal)
Output Impedance 50 Ω
Output Connector Type N (female)
PC Interface Front Panel 9-pin RS-232
Analog Audio Inputs 600/10 k Ω selectable
Analog Levels -10 to +18 dBm adjustable
AES/EBU Inputs 110 Ω (Transformer Balanced)

MECHANICAL AND ENVIRONMENTAL

Dimensions 19 x 3.5 x 17 (inches) 48.3 x 8.9 x 43.2 (cm)
Weight 20 lbs. (9 kg)
AC Power Requirements 120/240 VAC 50/60 Hz
Transmitter 100 Watts
Operating Temperature 0° to +50° C.

1.4 FCC DESIGNATOR

Type Certification under FCC Part 74 has been submitted. The FCC emission designator is 500KD7W. The FCC ID is BIO460.

1.5 WARRANTY INFORMATION

The following warranty policy and limitations are applicable to the Model 460 Digital STL Transmitter.

TFT, Inc. warrants each manufactured Model Digital Studio to Transmitter Link Transmitter to meet published specifications and to be free from defects in material and workmanship. TFT will repair or replace, at its expense, for a period of one (1) year from the date of shipment of equipment, all parts which are defective from faulty material or workmanship. This Warranty does not cover equipment which has been misused and/or altered by the user. Units found to be defective during the warranty period shall be returned to TFT with transportation charges prepaid by the BUYER. It is expressly agreed that replacement and repair shall be the sole remedy of the SELLER with respect to any non-conforming equipment and parts thereof, and shall be in lieu of any other remedy available by applicable law. All returns to the factory must be authorized in advance by TFT. Upon examination by the factory, if any DIGITAL Transmitter Equipment is found to be defective, the unit will be repaired and returned to the BUYER with transportation charges prepaid by TFT during the warranty period. Transportation charges for the Encoder and Decoder units found to be defective within the first 30 days of the warranty period will be paid both ways by TFT. Transportation charges for warranty returns wherein failure is found not to be the fault of TFT or one year after the delivery of the equipment shall be paid both ways by the BUYER. This warranty does not apply to equipment which, in the opinion of the SELLER, has been altered or misused.

NO OTHER WARRANTY IS EXPRESSED OR IMPLIED. TFT IS NOT LIABLE FOR ANY CONSEQUENTIAL DAMAGES.

1.6 CLAIMS FOR DAMAGE IN SHIPMENT

Your instrument should be inspected and tested by the method given in Section 2.2 of this manual as soon as it is received. If the instrument is damaged in any way or fails to operate properly due to transportation damage, file a claim with the carrier or, if insured separately, with the insurance company.

1.7 TECHNICAL SUPPORT

OUR CUSTOMER SERVICE FOR EAS PRODUCTS IS AVAILABLE FROM 8:00AM TO 5:00PM PACIFIC TIME MONDAY THROUGH FRIDAY. PLEASE CONTACT US IF YOU NEED ASSISTANCE

TFT, Inc.
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