EXHIBIT I

FCC TYPE ACCEPTANCE REPORT

ADC TELECOMMUNICATIONS

MODEL ITS-605C

FCC ID-CJJ79XITS-7042

BROAD BAND BOOSTER

Date Filed July 18, 2000

This application is filed in compliance with
Part 2, Part 21 and Part 74
of the FCC Rules and Regulations.

ADC Telecommunications
102 Rahway Road
McMurray, PA 15317

Rev. 1.0

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1.0 IDENTIFICATION OF APPLICANT AND EQUIPMENT

1.1 Applicant:

ADC Telecommunications
102 Rahway Road
McMurray, PA 15317

The above name and address is printed on a label attached to the rear panel of the equipment.

1.2 Equipment and Model Number: ITS-605C

This information is provided on the front panel of the equipment.

1.3 ADC Telecommunications shall manufacture this product in quantities necessary to satisfy market demand.

2.0 TECHNICAL DESCRIPTION - MODEL ITS-605C

2.1 Introduction

The ITS-605C is a wideband linear amplifier intended to be used as a digital multi-channel booster in the MMDS/ITFS frequency band (2500.00 to 2690.00 MHz). The power per channel capability of the unit varies with the number of channels according to specifications.

The 605C is packaged in a weatherproof aluminum outdoor enclosure and uses an external convection cooled design. Functionally, the unit is comprised of a broadband booster, a +15 dB or +25 dB preamplifier and an external power supply. The RF input signal enters the system at the RF input of the pre-amplifier then is fed to the broadband booster tray's RF input where it is filtered and amplified. The broadband booster tray also incorporates automatic level control to maintain the combined output power within the limits of the output amplifiers and control circuitry to disable the broadband amplifier when no input signal is present. The 605C utilizes GaAS FET amplifier modules for amplification of the RF signal.

The unit is supplied complete with mounting hardware.

Parameters and specification for operation of this unit are provided on the following pages, and a complete circuit description and alignment procedure are also included in this report. Refer to the overall system block diagram and the particular referenced schematics in the attached circuit description section of this report.

2.0 TECHNICAL DESCRIPTION

2.2 Technical Specifications

Type of Emissions .... BOOSTER

Frequency Range .... 2500 to 2690

DC voltage and total current of final amplifier stage .... 10 volts DC at 5.48 amps
(Broadband Amplifier tray) (Class A - Not RF power dependent)

Operating Frequency Range .... 2500 to 2690

Total Output Power Capability .... 1.5 Watts (peak envelope)
(250 mWatts total average max)

RF output (average):
- 4 Channels .... 62.5 mW/Channel
- 8 Channel .... 31.25 mW/Channel
- 12 Channels .... 20.8 mW/Channel
- 16 Channel .... 15.6 mW/Channel
- 24 Channels .... 10.4 mW/Channel
- 31 Channel .... 8.0 mW/Channel

Nominal Input Signal Range (average power): .... -53 to -83 dBm/Channel
- Connector .... Type N
- Impeadance .... 50 ohm

Out-of-Band Power .... Per FCC Rules (21.908)
- -25 dB max (at band edges):
- -40 dB max (250.00 KHz above and 250.00 KHz below band edges):
- -50 dB max (3.00 MHz above and 3.00 MHz below band edges):
- -60 dB max (20.00 MHz above and 20.00 MHz below band edges):

Out-of-Band Power (Unoccupied Channel) .... Per FCC Rules (21.908)
- -25 dB max (at unoccupied channel edges)
- -40 dB max (250.0 KHz above and 250.0 KHz below occupied channel edges)
- -50 dB max (3.0 MHz above and 3.0 MHz below occupied channel edges)

Harmonic Products .... -60 dB max

Electrical Requirements

Power Line Voltage .... 60 VAC ±10%, 50/60 Hz

Power Consumption .... 160 Watts

Environmental

Maximum Altitude .... 12,000 feet (3,660m)
Ambient Temperature .... -40° to 50°C

Mechanical

Dimensions: (WxDxH)
- Broadband Booster .... 18" x 21" x 11.5" (45075cm x 53.33cm x 29.25cm)

Weight:
- Broadband Booster .... 60 lbs. (27.3 kgs)

2.0 TECHNICAL DESCRIPTION

2.4 Circuit Description

The ITS-605C Multi-Channel Booster can be subdivided further as follows:

- External Preamplifier
- External Power Supply
- Automatic Level Control
- Bias Circuits
- Amplifier Modules
- Power Detectors
- Control Logic
- Status Indicators
- Power Supplies
- DC/DC Converter

2.0 TECHNICAL DESCRIPTION

2.4 Circuit Description

General

The 605C Broadband Booster is comprised of a remote preamplifier, booster amplifier and external power supply. The preamplifier may be chosen with a gain of 15 or 25 dB and is mounted in an outdoor enclosure suitable for mounting near the receive antenna. The preamplifier output is normally connected through low loss coaxial cable to the input of the booster. The booster includes automatic level control, power amplification stages, DC/DC power converter, and control circuitry. The combined peak envelope output power of the tray is used to develop the automatic level control voltage. The booster unit receives power through a coaxial connector from an external power supply module. The external power supply is supplied with standard 117V/220 VAC power.

Preamplifier

The amplifier stages of the preamplifier are wideband gallium arsenide transistor amplifier stages. The input stage uses low noise devices to maintain a low system noise figure. The second stage uses higher power transistors to insure a wide dynamic range. Both stages are wideband microstrip designs with class A bias and no operation adjustments.

Booster Amplifier

The amplified signal from the preamp enters the booster at J6 on the bottom of the unit and is applied to a circulator then fed to the Broadband Bandpass Filter (2140-1004) which provides the initial selectivity to the system. The output of the filter is fed to a second circulator and then to the input (J1) of the Two Stage Amplifier Module (11576-1126). This module consist of two cascaded GaAs FET amplifiers (ATF10136 driving a FLL 101ME) with an overall gain of approximately 27 dB.

The output of the Two Stage Amplifier Module is fed to the PIN Diode Attenuator Module (1575-1135) which uses a series configuration Pin Diode attenuator circuit. The gain of the attenuator is controlled using a peak detected sample of the output amplifier. By controlling the gain of this attenuator, the output power can be regulated, maintaining a constant output regardless of minor changes in the input signal.

The Output signal from the PIN Diode Attenuator is fed to the Single Stage Amplifier Module which consist of a single GaAs FET (ATF10136) amplifier stage with a gain of approximately 13 dB. The output of this module is applied to a circulator then to the Three Stage Amplifier Module (1516-1107) which consist of three cascaded GaAS FET amplifiers (FLL101ME driving a FLL351ME driving a FLL120 MK) with an overall gain of approximately 37 dB. The output of the Three Stage Amplifier Module is applied to a circulator then fed to the input of a Broadband Filter (2140-1033) then to the input of the Single Stage 10W Amplifier Module (1576-1117 or 1576-1118) which consist of a single GaAs FET amplifier (FLL200IB-3) with a gain of approximately 11 dB. The output of the module (J2) is applied to a circulator then to the RF output jack (J2) on the bottom of the unit. An internal 20 dB microstrip coupler is used to obtain a sample of the RF output. This RF sample connects to the Average Power Detector/Buffer Board (1517-1104).

2.0 TECHNICAL DESCRIPTION

2.4 Circuit Description

The signal enters the Average Detector/Buffer Board at J1 and is applied to a Wilkinson Coupler which splits the signal. One output of the splitter is amplified and fed to the RF sample output jack (J4) of the module, which connects to the RF sample jack (J5) on the bottom of the unit. The other output of the coupler is applied to an average detector circuit that generates an ALC voltage, which is used to control the PIN Diode Attenuator.

The Booster Control Board (1576-1101), provides the capability to control and monitor the operating status of the booster. The board is designed to protect the booster in the event of one of the following faults: over temperature, loss or reduction in output power, loss of input signal and loss of the -5 VDC GaAs FET bias voltage. The Booster Control Board also provides the capability to remotely control and monitor the booster status via the Remote Diagnostics (J8) and External Control (J7) jacks located on the bottom of the unit.

The DC biasing of the FET amplifiers within the various modules is controlled and filtered by daughter boards, which are soldered directly to the main boards. The DC bias drain to source currents are set by adjusting the negative gate to source voltages which are adjusted by potentiometers on the daughter boards.

The 605C booster is powered by an external 60VAC source. The AC source enters the booster at J3 and is applied to the Input Protection Board (1517-1102) which provides over voltage and over current protection using a 3A inline fuse and MOV varistor. The output of the Input Protection Board is connected to a Toroid transformer.

The Toroid transformer provides two 20 VAC secondary windings. The first winding is sent to a full wave bridge rectifier, which supplies a positive 48 VDC to the DC/DC Converter Board (1517-1111). The second winding is supplied to a full wave bridge rectifier circuit located on the ±12V -5V DC Power Supply Board (1576-1102) then to negative 5 volt and negative 12 volt voltage regulators.

The DC/DC Converter Board contains a DC/DC converter IC and the required support circuitry to produce a constant regulated 10VDC output signal that is used to supply the FET amplifiers in the Three Stage Amplifier Module and the Single Stage 10W Amplifier Module via the Two Section Bias Protection Board (1576-1102). An Inhibit input from the Booster Control Board drives a magnetic latching relay, which in tun drives the on/off (enable) input of the DC/DC converter IC. This input is used to shut off the converter IC and remove power from the output amplifiers in the event of an input signal loss.

The Bias Protection Board distributes the -5V gate bias and + 10V drain bias to the Three Stage Amplifier and Single Stage Amplifier Modules. The -5V line from the -5V/±12 Power Supply Board is looped through the board at J2 and J4. This line is also fed to the Booster Control Board, which will disable the DC/DC converter upon loss of the -5V bias.

2.0 TECHNICAL DESCRIPTION

2.5 Alignment Procedure

In the following procedure, the complete Multi-Channel Boaster is adjusted for optimum performance. This alignment procedure is performed by adjusting each circuit for its specified performance while observing the appropriate output parameters of the board or subassembly being adjusted.

Because of the broadband nature of the amplifier stages, this is a straightforward procedure, easily accomplished is RF test equipment is available. In this procedure, the input signals are first connected and each circuit is adjusted in sequence by connecting the test equipment to the specified point.

Equipment required:

1. Spectrum Analyzer (with tracking generator)
2. Network Analyzer
3. Power Meter
4. Multi-channel test signal
5. 30 dB Coupler
6. Attenuators
7. Digital Multimeter (DMM)

1. Connect power to the booster. Terminate the output with a 50W 50Ω load.

2. Set the network analyzer for the following settings:

Start Frequency	beginning of range
Stop Frequency	end of range
Power Level	-45 dB (in combination with attenuators and power level)
Reference Level	0 dB

3. Set S2 on Booster Control board for manual.

4. Calibrate cables from network analyzer for transmission.

5. Connect the RF out cable to J1 RF I/P and the RF In cable to J2 of the Broadband Bandpass Filter. Tune the filter, and verify that it is within specifications.

6. Reconnect rigid to J2 of the filter, and move RF In cable of the analyzer to J2 of the A10 Two Stage Amplifier. Tune the module for gain and output power specifications.

2.5 Alignment Procedure - continued

7. Reconnect J2 to Two Stage Amplifier and move RF In cable of the analyzer to J2 of the PIN Attenuator Module. Turn ALC PIN Attenuator Bias voltage to maximum using R56 on the Booster Control board and measure gain. ALC PIN Attenuator bias voltage should be > 11.5V at FL2 of the module. There should be 4 dB of loss through this module. Reset voltage to 4.0V at FL2 of the PIN Attenuator Module. Response should be within ±0.5 dB. Reconnect J2 to PIN Attenuator Module.

8. Calibrate cables from network analyzer for Ch. 1 for Transmission, and Ch. 2 for Reflection. Connect RF Out cable to J1 of A14 Single Stage Amplifier Module. Connect RF In cable to J2 of module. Tune the module for gain, reflected, and output power specifications. Reconnect rigid to J1 and J2 of the module.

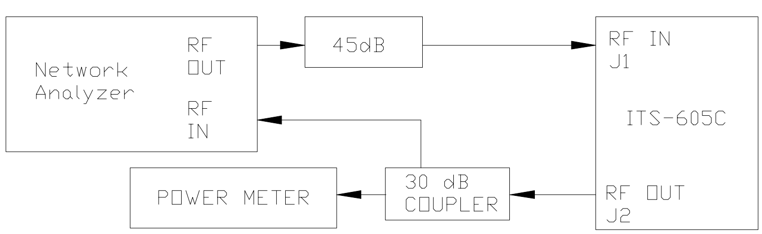
9. Move RF Out cable from the analyzer to J1 of the circulator (A15) and the RF In cable from the analyzer to J2 of the Three Stage Amplifier Module. Tune the Module for gain and output power specifications. Reconnect the rigid to J1 of the circulator and J2 of the amplifier module.

10. Move RF Out In cable from J2 of the Three Stage Amplifier Module to the RF output (J2) of the booster. Tune the Single Stage Amplifier Module (A18) for gain and output power specifications. Reconnect rigid to J1 of the circulator and J2 of the amplifier module.

11. Verify that the voltage at FL2 of the Single Stage Amplifier Module is 10.2V.

12. Connect 45 dB of attenuation on the RF Out port of the network analyzer. Calibrate the cables from the network analyzer to transmission.

13. Connect the calibrated cables as shown in the figure below.



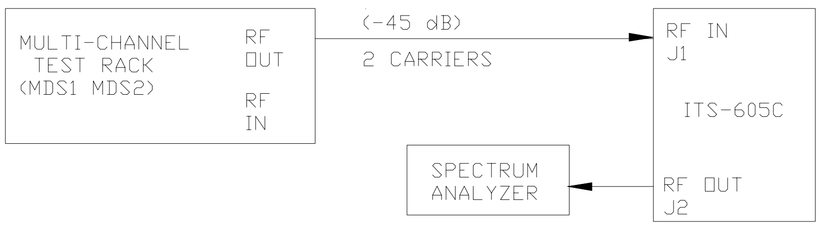
14. Turn PIN Attenuator bias voltage to maximum at FL2 of the PIN Attenuator Module. Measure the open loop gain of the booster. (Note: compensate for the 30 dB coupler). Verify that the open loop gain is within specifications. Reset PIN Attenuator voltage for 4.0V at FL2 of the module.

15. Measure response across the frequency band. Response should be within ±1 dB.

2.0 TECHNICAL DESCRIPTION

2.5 Alignment Procedure - continued

16. Connect the booster as shown below:



17. Record the Peak Power/Ch and the average power with two input carriers.

18. Measure and record the Composite Triple Beat for the booster. Verify CTB meets specifications.

19. Set spectrum analyzer for the following settings:

Span	10MHz
Res BW	300KHz
Sweep	500msec
Atten	0 dB
Reference	Top line of analyzer

20. With one carrier present, set delta marker on carrier peak and disconnect the RF I/P to the booster. Subtract 13 from the absolute value of the difference in level. This is the Carrier to noise level. Verify the level is within specifications.

21. Apply two carriers (MDS1 and MDS2) to the input of the booster.

22. Set voltage on J8 (center pin) on Booster Control Board to 0.2V using R13 on the Average Power Detector board.

23. Switch S2 to ALC, set R42 on Booster Control board for 29 dBm.

24. Decrease input level in 1 dB increments until the output power drops 1 dB. Adjust R57 on the Booster Control board until Low Output LED (DS4) lights.

25. Verify that the Low Output LED turns off when the input level is increased 1 dB.

26. Increase input level until the output level is 0.3 dB higher than the original output power level.. Adjust R55 on the Booster Control board until the Overdrive LED (DS3) lights.

27. Verify that the Overdrive LED turns off when the input level is decreased by 1 dB.

28. Verify that there is a 30 dB ALC range for the booster.

2.0 TECHNICAL DESCRIPTION

2.5 Alignment Procedure--continued

29. Adjust the input signal to the proper level.

30. Set S2 switch on the Booster Control board to manual.

31. Calibrate and connect network analyzer as in step 2, 4, and 5.

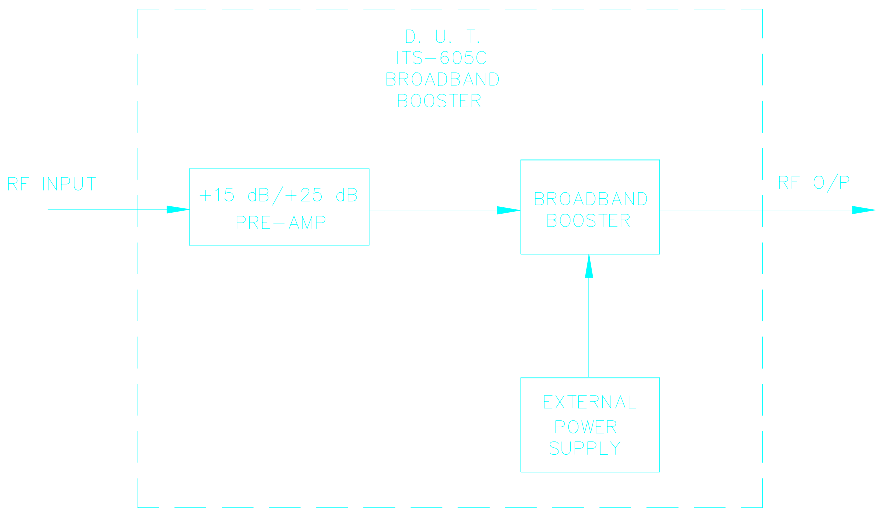
32. Plot the response of the booster and verify the flatness is within specifications.

2.0 TECHNICAL DESCRIPTION

2.6 Block Diagrams

System Block Diagram:

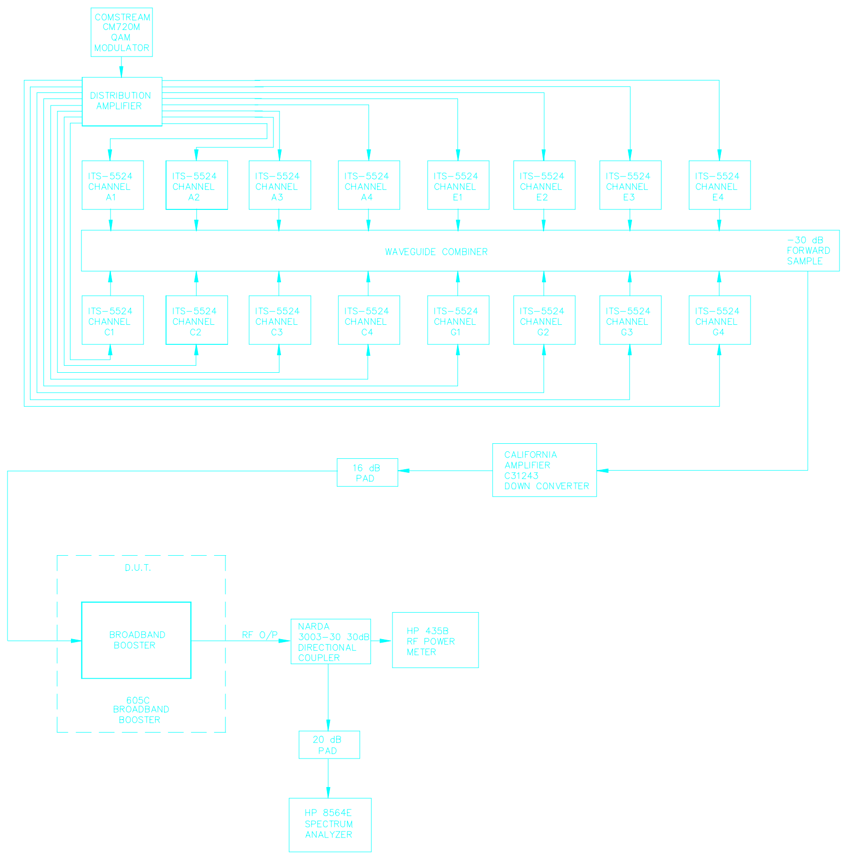
The following is a system block diagram for the ITS-605C Multi-Channel Booster. Detailed Block Diagrams and Schematics are included in Exhibit II.



3.0 ENGINEERING DATA

3.1 RF Power Measurements

The following block diagram illustrates the test equipment set-up for RF power measurement:



Before testing the ITS-605C multi-channel booster, the ITS-5724 transmitters (FCC ID# CJJ79SITS-7026) used to generate the multi-channel input signal to the booster were tested and observed to meet specifications with 64 QAM digital IF input signals. Then, the booster was tested and observed, as illustrated in the following sections, to reliably reproduce the transmitted signals within the rules set forth in the Rules and Regulations.

3.0 ENGINEERING DATA

3.1 RF Power Measurements - continued

With sixteen QAM modulated carriers present (B1, B2, B3, and B4), the output power of the ITS-605C booster was adjusted to full rated output power (250 mW total average) as observed on the power meter. With the power level properly set to 250 mW, all required tests were performed and recorded in the following sections.

Number of channels	Average power/channel	Total Average Power
16	15.6 mW	250 mW

Note: The peak envelope power has been determined and observed to be six times, or 7.8 dB, above the total average power. Therefore, the maximum peak envelope power for the ITS-605C is approximately 1.5 watts. In addition, for multi-channel loading, , a doubling in the number of channels requires a 3 dB back-off in the peak power per channel. Also, in the case of 8 or more channels, the total average power remains constant at 250 mW. The average power per channel is 0.25 watts divided by the number of channels.

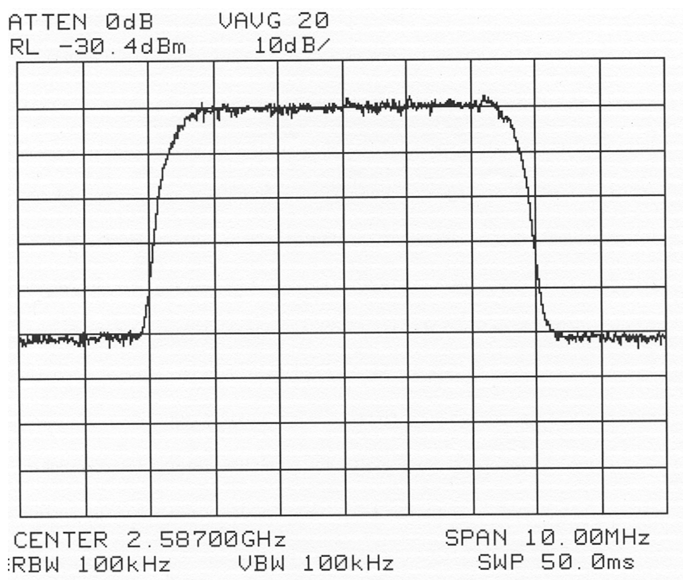
3.0 ENGINEERING DATA

3.2 Occupied Bandwidth

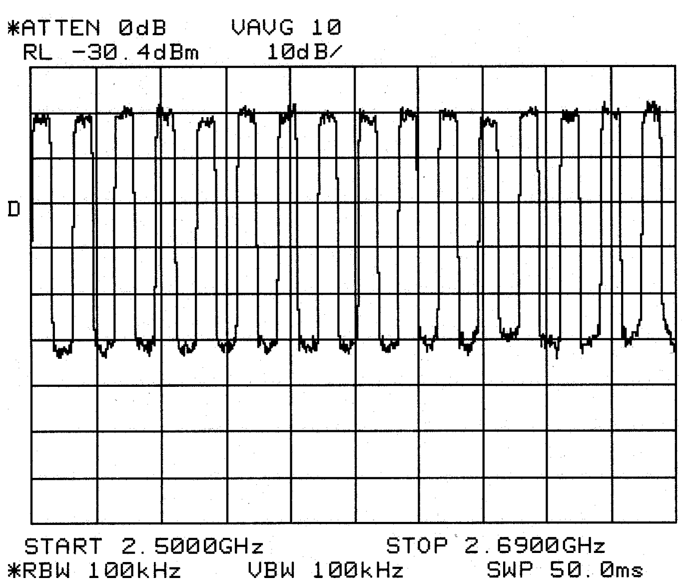
Using the test set-up in Section 3.1, with the booster operating at rated output power and with sixteen input signals (A1, A2, A3, A4, C1, C2, C3, C4, E1, E2, E3, E4, G1, G2,G3, G4) present, the analyzer was set to a span of 10 MHz and a reference level was established (see plot below). Then the analyzer was adjusted to a span of 190 MHz and the occupied bandwidth (2500.0 MHz – 2690.00 MHz) was observed and recorded below.

Note: The 190 MHz bandwidth permits a maximum of thirty one 6MHz channels.

Reference Level Plot/10 MHz Span (250 mW total average):



Occupied Bandwidth Plot/190 MHz Span (250 mW total average):

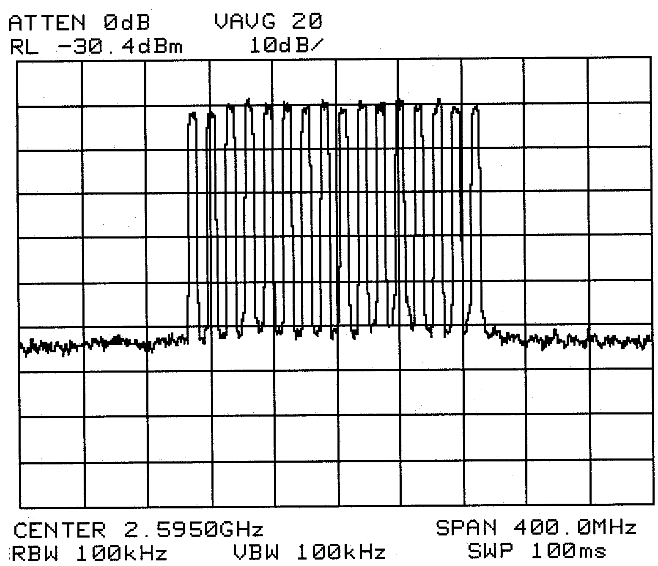


3.0 ENGINEERING DATA

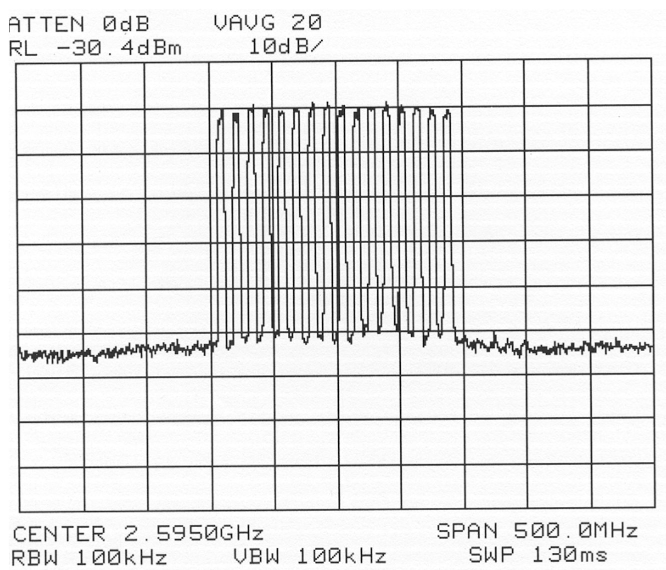
3.3 Out-of-Band Power

Using the test set-up of section 3.1, with the output power adjusted to 250 mW total average and with 16 input signals ranging from the lowest to highest channel frequencies (A1 to G4) the spectrum outside of the specified band was observed and the data was taken at band edges, ±250 KHz from band edge and ±3.0 MHz from band edge. The spectral points were measured at the same resolution bandwidth used to establish the reference level on the analyzer.

Out-of-Band Power Plot/400 MHz Span (250 mW total average):



Out-of-Band Power Plot/500 MHz Span (250 mW total average):



3.0 ENGINEERING DATA

3.3 Out-of-Band Power - continued

2480 MHz (-20 MHz from band edge) Measurement:

When measuring multi-channel QAM input signals, the dynamic range of the spectrum analyzer is reduced with increasing number of input signals. With 16 QAM input signals, the dynamic range of the analyzer is less than 60 dB. Therefore, to make an accurate measurement, bandpass filters tuned to the spectral points of interest were used to limit the input power to the analyzer and thereby increase the dynamic range of the measurement. The out-of-band emission power was then subtracted from the average in band channel power to determine the actual emission level.

Two cable assemblies were used for the following measurements. Cable assembly 1 consisted of two cables and a 20 dB pad (see test setup below). Cable assembly 1 was used to limit the power to the analyzer when measuring average in band channel power. Cable assembly 2 consisted of two cables and a bandpass filter tuned to the spectral point of interest. Cable 2 was used to limit the power input to the analyzer by passing a 12 MHz frequency band centered at the spectral point of interest.

With the bandpass filter of cable 2 tuned to 2480 MHz, the difference in cable loss (L) between cable 1 and cable 2 at 2480 MHz was observed on the network analyzer and recorded.

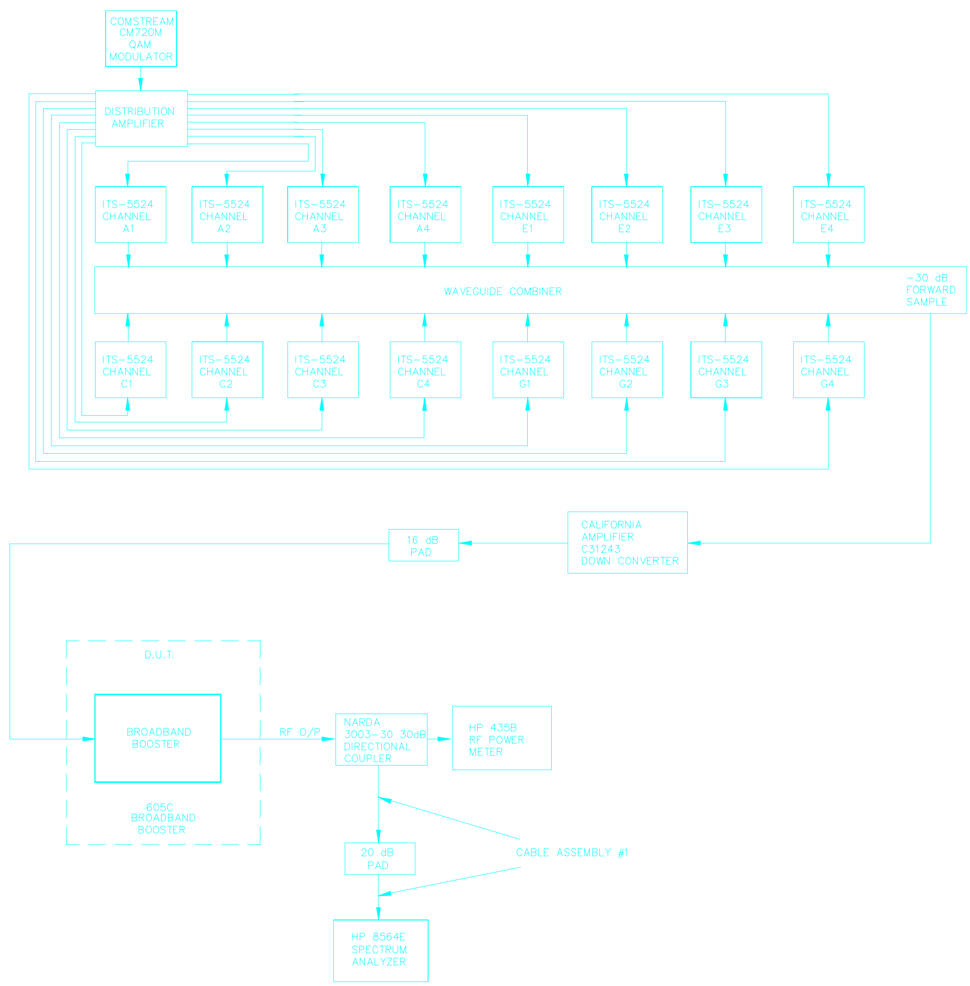
L = Cable1 loss – cable 2 loss = 15.6 dB

The difference in cable loss will be added to the difference in channel signal power (S) and noise power (N) to determine the signal to noise ratio (SNR).

3.0 ENGINEERING DATA

3.3 Out-of-Band Power - continued

Using the test set-up below, the channel signal power of an occupied channel in the center of the band (C4 = 2587 MHz) was measured over a bandwidth of 5.1 MHz using the Channel BW function of the analyzer. The 5.1 MHz BW is the equivalent noise power BW of a QAM signal through a Nyquist filter as used in the modulator. The 5.1 MHz BW is also the half power points of a QAM signal.

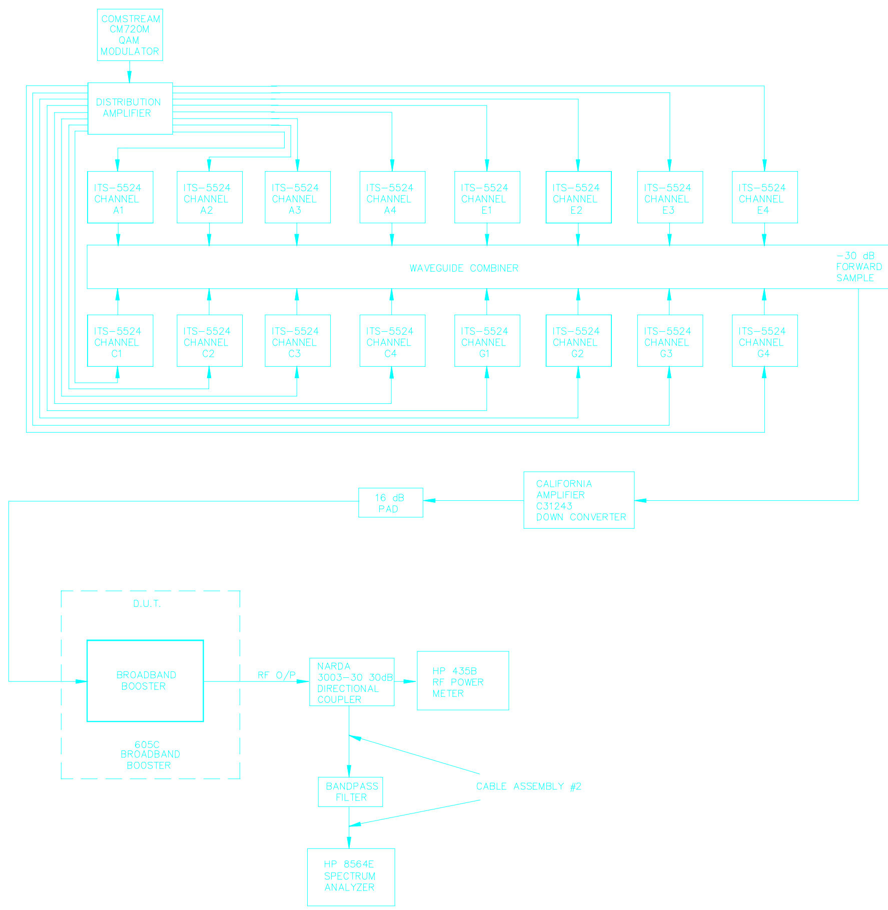


S = channel signal power = -23.7 dBm

3.0 ENGINEERING DATA

3.3 Out-of-Band Power - continued

After replacing cable 1 with cable 2 as shown below, the noise power (N) was measured at 2480 MHz over the same 5.1 MHz used to measure the channel signal power above.



N = NOISE POWER @ 2480 MHz = -68.5 dBm

The SNR is equal to the channel signal power minus the noise power plus the difference in cable loss.

SNR = -23.7 dBm –(-69.3 dBm) + 15.6 dBm = -61.2 dB

Therefore the emission level at the 2480 MHz spectral point is 61.2 dB below the in-band channel signal power.

3.0 ENGINEERING DATA

3.3 Out-of-Band Power - continued

After measuring the emission level at –20 MHz from band edge (2480 MHz), the filter was tuned to +20 MHz from band edge (2710 MHz) and the emission level was observed and recorded following the procedure outlined above.

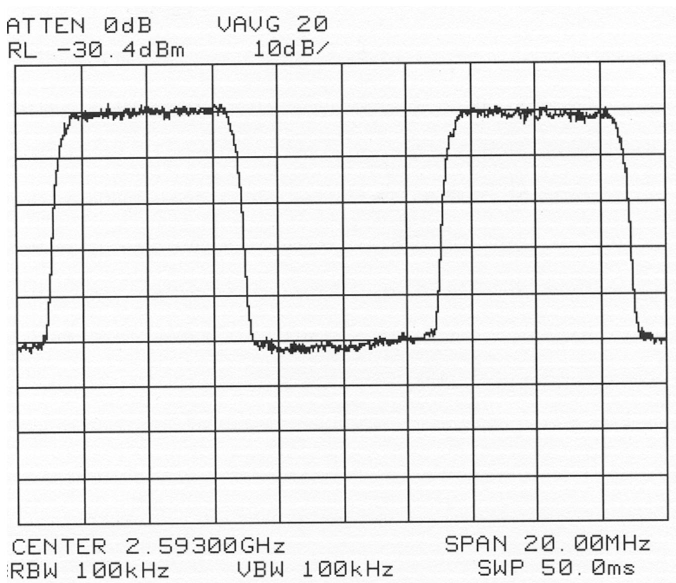
Frequency (MHz)	Source	Level Observed
2500 – 2690	operating band	0 dB (reference)
2500	lower band edge	-50.1 dB
2499.75	-250.0 KHz below band edge	-52.0 dB
2497	-3.0 MHz below band edge	-53.3 dB
2480	-20.0 MHz below band edge	-61.2 dB
2690	upper band edge	-52.5 dB
2690.25	+250.0 KHz above band edge	-52.6 dB
2693	+3.0 MHz above band edge	-53.6 dB
2710	+20.0 MHz above band edge	-61.8 dB
5000 – 5380	2nd harmonic frequencies	-62.0 dB (max)
7500 – 8070	3rd harmonic frequencies	-62.0 dB (max)
10000 – 10760	4th harmonic frequencies	-62.0 dB (max)
12500 – 13450	5th harmonic frequencies	-62.0 dB (max)
15000 – 16140	6th harmonic frequencies	-62.0 dB (max)
17500 – 18830	7th harmonic frequencies	-62.0 dB (max)
20000 – 21520	8th harmonic frequencies	-62.0 dB (max)
22500 – 24210	9th harmonic frequencies	-62.0 dB (max)
25000 – 26900	10th harmonic frequencies	-62.0 dB (max)

3.0 ENGINEERING DATA

3.4 Unoccupied Channel Emissions

Using the test set-up in Section 3.1, with the booster adjusted to 250 mW total average output power and with 16 input signals ranging from the lowest to highest channel frequencies (A1 to G4), the emissions within an unoccupied channel were observed. With the average in band signal set as the reference, the spurious emissions were observed and recorded (see spectrum plot and table below).

Unoccupied Channel Emissions Plot (250 mW total average):



Note: The above plot shows unoccupied channel D4 (2593 MHz center channel)

Frequency (MHz)	Source	Level Observed
2590.00	lower channel edge	0 dB (reference)
2590.25	+250 KHz above lower ch edge	-50.1 dB
2591.00	+1.0 MHz above lower ch edge	-52.0 dB
2592.00	+2.0 MHz above lower ch edge	-53.3 dB
2593.00	center channel (3.0 MHz)	-61.2 dB
2594.00	-2.0 MHz below upper ch edge	-52.5 dB
2595.00	-1.0 MHz below upper ch edge	-52.6 dB
2595.75	-250.0 KHz below upper ch edge	-53.6 dB
2596.00	upper channel edge	-61.8 dB

3.0 ENGINEERING DATA

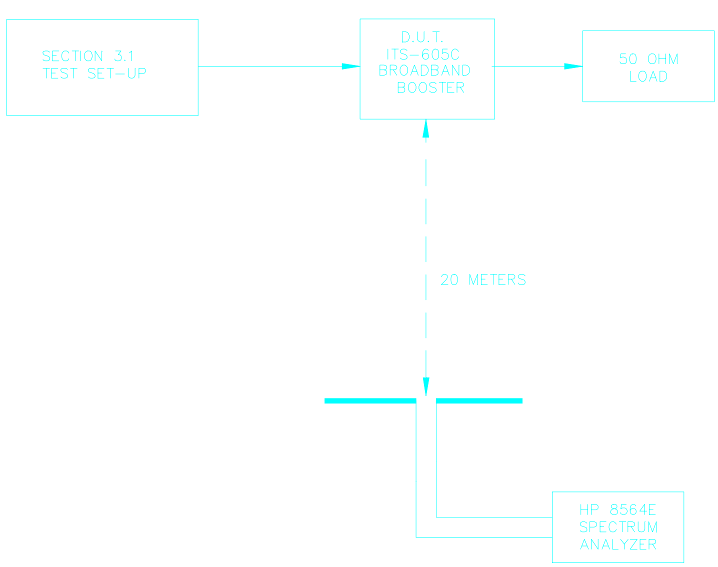
3.6 Radiated Emissions

Using the test set-up below, with the booster operating at full output power (250 mW total average) and with sixteen input signals, the spectrum analyzer was moved 20 meters from the booster and connected to a dipole antenna cut to the center channel frequency of A1 (2503 MHz). This antenna was oriented to maximize the received level, and the data was recorded. The antenna was then cut to the remaining center channel frequencies and the second through the tenth harmonic frequencies and all signals received were maximized by antenna orientation, and their absolute levels were recorded (see table below).

MEASURED LEVELS

Frequency (MHz)	**Source**	**Level Observed (into 50 Ω)**
2500 – 2690	operating band	None Observed
5000 – 5380	2nd harmonic frequencies	None Observed
7500 – 8070	3rd harmonic frequencies	None Observed
10000 – 10760	4th harmonic frequencies	None Observed
12500 – 13450	5th harmonic frequencies	None Observed
15000 – 16140	6th harmonic frequencies	None Observed
17500 – 18830	7th harmonic frequencies	None Observed
20000 – 21520	8th harmonic frequencies	None Observed
22500 – 24210	9th harmonic frequencies	None Observed
25000 – 26900	10th harmonic frequencies	None Observed

Test Set-up:



3.0 ENGINEERING DATA

3.6 Radiated Emissions - continued

Note: The spectrum analyzer had a maximum sensitivity of -100 dBm during these tests.

These levels were then compared to the following reference level:

If all of the transmitter's power (0.25 Watts) was radiated by an isotropic radiator, the power density at 20 meters would be:

$$Pd = Pt/4\pi\, R^2 = 0.25/4\pi\,(20)^2 \cong 49.74x10^{-6}\ w/m^2$$

Using a dipole transmitting antenna increases this by 1.64 to:

$$1.64 * 49.74x10^{-6} = 81.57\ x10^{-6}\ w/m^2$$

If a dipole receive antenna of area 1.64 * $\lambda^2/4\pi$ is used to receive the signal, the received level would be:

$$81.57\ x10^{-6} * 1.64 * \lambda^2/4\pi = 0.1512\ x10^{-6}\ w = -68.2\ dBw = --38.2\ dBm$$

Therefore, with a carrier reference level of –38.2 dBm, and a analyzer measurement threshold of -100 dBm, no measured values exceeded a level of:

-100 dBm -(-38.2 dBm) = <u>-61.8 dBc</u>

3.0 ENGINEERING DATA

3.7 Frequency Stability

The ITS-605C is an on channel repeater - no frequency conversion is applied to the incoming signal. Therefore, the frequency of the RF output signal is equal to the RF input signal frequency.

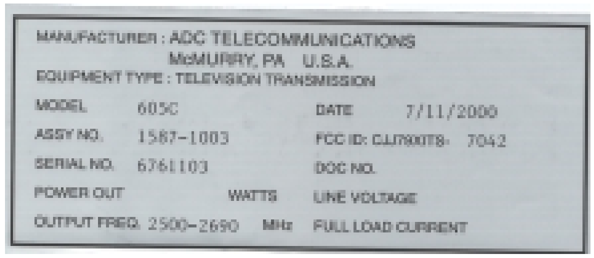
3.0 ENGINEERING DATA

3.8 Test Equipment

MODEL	MANUFACTURER	DESCRIPTION	SERIAL #
8564E	Hewlett Packard	Spect. Analyzer 9 KHz - 40 GHz	3619A02932
8714B	Hewlett Packard	Network Analyzer .01 GHz - 40 GHz	US35490400
3003-30	Narda	30 dB Directional Coupler	08059
3003-10	Narda	10 dB Directional Coupler	09049
435B	Hewlett Packard	RF Power Meter	2702A15167
8482B	Hewlett Packard	30 Watt Power Head	3318A05525
77	Fluke	Digital Multimeter	81000244
8494A	Hewlett Packard	11 dB Step Attenuator	2813A14098
8595B	Hewlett Packard	70 dB Step Attenuator	2520A02366
PSF-MX6-AXX	Lectro	External Power Supply	961205027

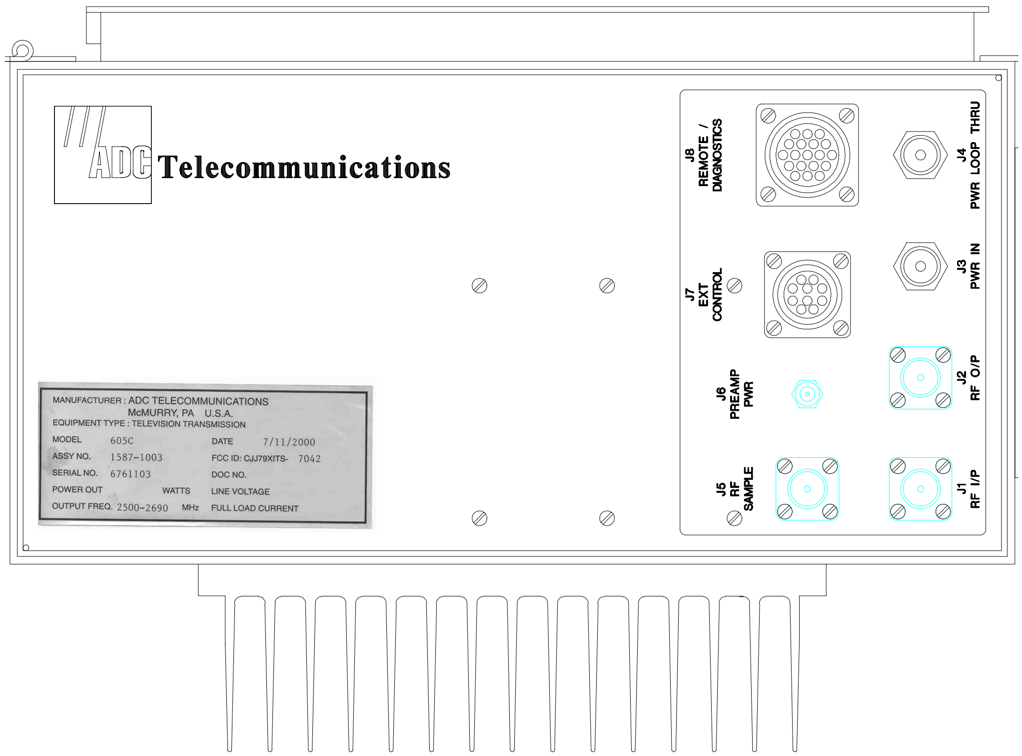
4.0 IDENTIFICATION LABELS/LABEL PLACEMENT AND PHOTOGRAPHS

4.1 Rear Panel Manufacturer Identification/FCC Identification Label:



4.0 IDENTIFICATION LABELS/LABEL PLACEMENT AND PHOTOGRAPHS

4.2 Rear Panel Drawing (Label Placement):



4.0 IDENTIFICATION LABELS/LABEL PLACEMENT AND PHOTOGRAPHS

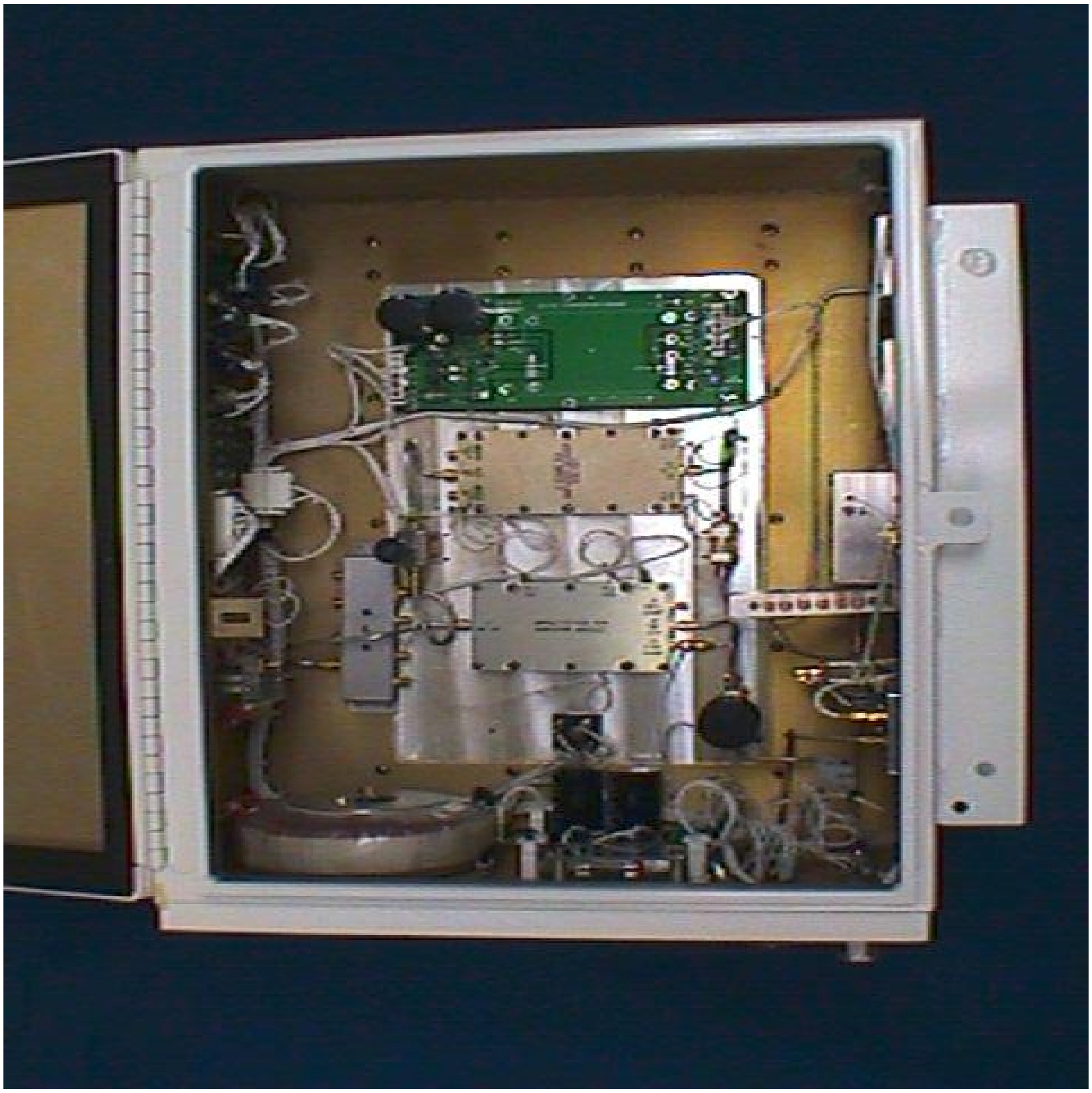
4.3 Rear Panel Drawing (Label Placement):

4.3 Photograph List

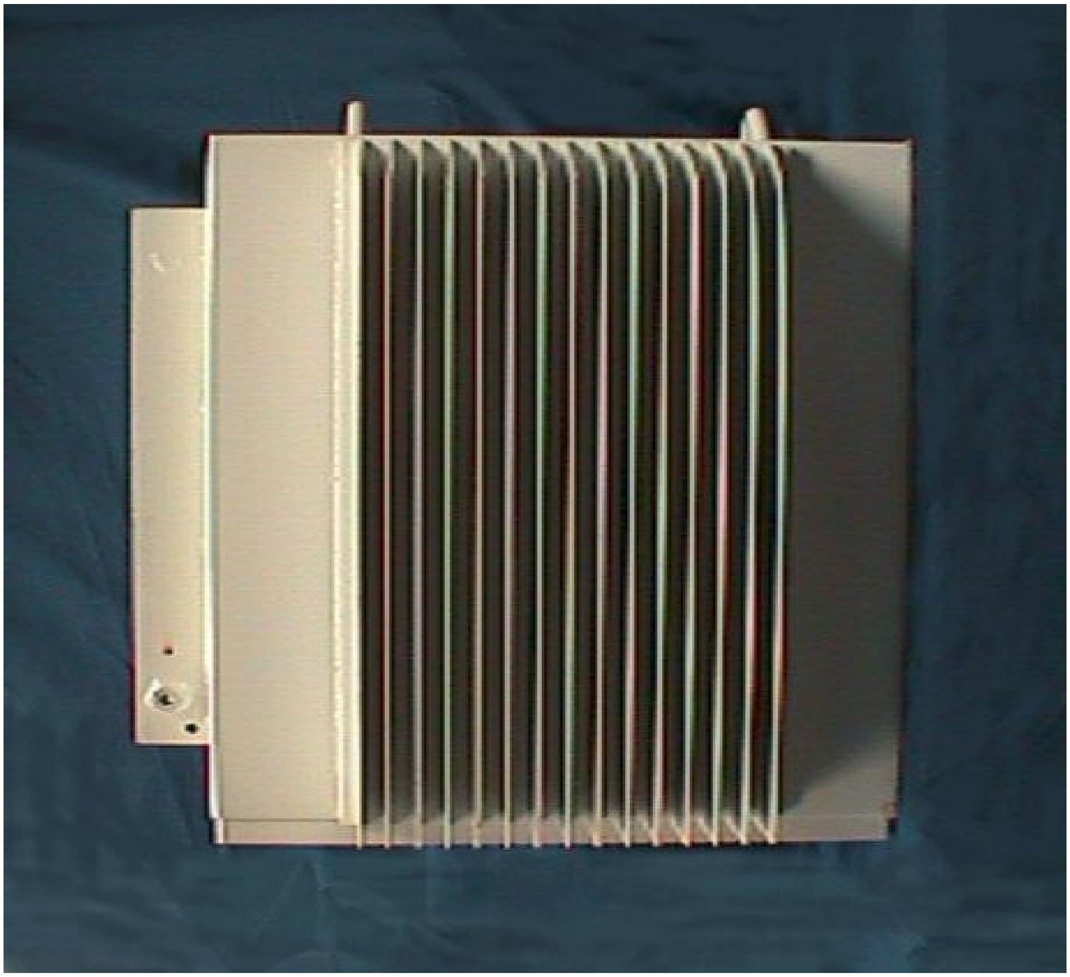
- 4.3.1 Front view, 605C Broadband Booster (Closed Door)
- 4.3.2 Front view, 605C Broadband Booster (Open Door).
- 4.3.3 Rear view, 605C Broadband Booster.
- 4.3.4 Bottom view, 605C Broadband Booster.
- 4.3.5 Top view, External Power Supply (Closed Door).
- 4.3.6 Top view, External Power Supply (Open Door).
- 4.3.7 Top view, +15 dB Preamplifier.
- 4.3.8 Top view, +25 dB Preamplifier.

4.3.1 Front view, 605C Broadband Booster (Closed Door)

4.3.2 Front view, 605C Broadband Booster (Open Door)

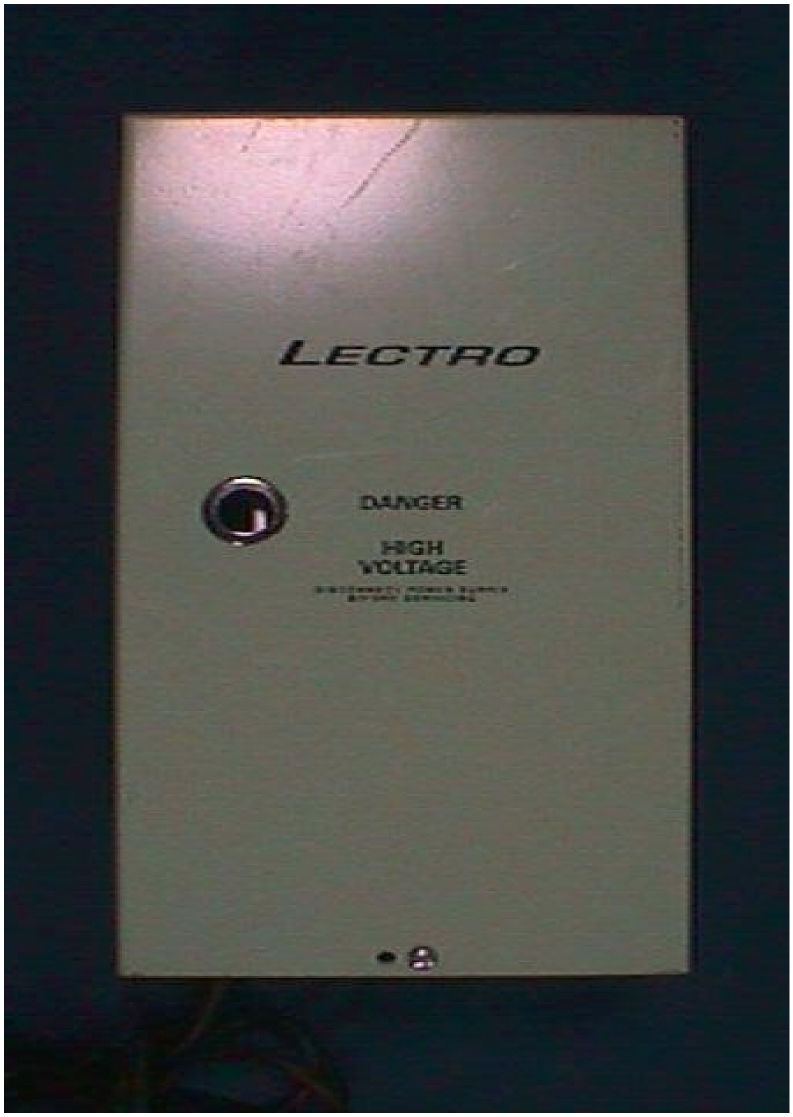


4.3.3 Rear view, 605C Broadband Booster



4.3.4 Bottom view, 605C Broad band Booster

4.3.5 Top view, External Power Supply (Closed Door)



4.3.6 Top view, External Power Supply (Open Door)

4.3.7 Top view, +15 dB Preamplifier

4.3.8 Top view, +25 dB Preamplifier

5.0 CERTIFICATION OF TEST DATA

This equipment has been tested in accordance with the requirements contained in the appropriate Commission regulation. To the best of my knowledge, these tests were performed using measurement procedures consistent with industry or Commission standards and demonstrate that the equipment complies with the appropriate standards. Each unit manufactured, imported or marketed, as defined in the Commission's regulations, will conform to the sample(s) tested within the variations that can be expected due to quantity production and testing on a statistical basis. I further certify that the necessary measurements were made by ADC Telecommunications., 102 Rahway Road, McMurray, Pennsylvania 15317.

David Urban 7/18/2000
Dave Urban, Chief Engineer

Todd Anderson 7/14/2000
Todd Anderson, Engineer