dB LINE LOSS CALCULATION

CASCADE CHRISTIAN JR High

SPEAKERS

INT-50

50.00 WATTS AVAILABLE 12.50 WATTS USED 37.50 WATTS SPAR	DEVICE POWER (WATTS)	SIGNAL CIRCUIT 1 QTY	SIGNAL CIRCUIT 1 WATTS	SIGNAL CIRCUIT QTY	SIGNAL CIRCUIT WATTS	SIGNAL CIRCUIT QTY	SIGNAL CIRCUIT WATTS
Speaker 25V							
Speaker - 1/8 Watt Tap	0.13		0.00		0.00		0.00
Speaker - 1/4 Watt Tap	0.25		0.00		0.00		0.00
Speaker - 1/2 Watt Tap	0.50		0.00		0.00		0.00
Speaker - 1 Watt Tap	1.00		0.00		0.00		0.00
Speaker - 2 Watt Tap	2.00		0.00		0.00		0.00
Speaker - 4 Watt Tap	4.00		0.00		0.00		0.00
Speaker - 7.5 Watt Tap	7.50		0.00		0.00		0.00
Speaker - 8 Watt Tap	8.00		0.00		0.00		0.00
Speaker - 15 Watt Tap	15.00		0.00		0.00		0.00
Speaker 70.7V							
Speaker - 1/8 Watt Tap	0.13		0.00		0.00		0.00
Speaker - 1/4 Watt Tap	0.25	50	12.50	0	0.00		0.00
Speaker - 1/2 Watt Tap	0.50		0.00		0.00		0.00
Speaker - 1 Watt Tap	1.00		0.00		0.00		0.00
Speaker - 2 Watt Tap	2.00		0.00		0.00		0.00
Speaker - 4 Watt Tap	4.00		0.00		0.00		0.00
Speaker - 7.5 Watt Tap	7.50		0.00		0.00		0.00
Speaker - 8 Watt Tap	8.00		0.00		0.00		0.00
Speaker - 15 Watt Tap	15.00		0.00		0.00		0.00
TOTAL POWER ON CIRCUIT		12.50 WATTS		0.00 WATTS		0.00 WATTS	
LOAD RESISTANCE		400 OHMS		0 OHMS		0 OHMS	
TOTAL WIRE LENGTH		2500 FT.		FT.		FT.	
WIRE SIZE		16 AWG		16 AWG		16 AWG	
TOTAL WIRE RESISTANCE		25.4 OHMS		0 OHMS		0 OHMS	
POWER LINE LOSS (dB)		**-0.27** dB		dB		dB	
CIRCUIT LOCATION		LEVEL 1 & 2					

TOTAL WIRE RESISTANCE (WR)= (RESISTANCE / 1000) x DISTANCE

WIRE RESISTANCE (Ohms/Kft)*

18 AWG = 8.08
16 AWG = 5.08
14 AWG = 3.26
12 AWG = 2.05

LOAD RESISTANCE (LR)= (VOLTAGE x VOLTAGE) / POWER

POWER LINE LOSS (dB) = 10 x Log (1- (WR / (WR+LR))

*Values per NFPA 70

SIGNAL CIRCUIT		SIGNAL CIRCUIT		SIGNAL CIRCUIT		SIGNAL CIRCUIT		SIGNAL CIRC
QTY	WATTS	QTY	WATTS	QTY	WATTS	QTY	WATTS	QTY
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
0.00	WATTS	0.00	WATTS	0.00	WATTS	0.00	WATTS	0.00
0	OHMS	0	OHMS	0	OHMS	0	OHMS	0
	FT.		FT.		FT.		FT.	
16	AWG	16	AWG	16	AWG	16	AWG	16
0	OHMS	0	OHMS	0	OHMS	0	OHMS	0
	dB		dB		dB		dB	

CUIT	
	QTY
WATTS	TOTAL
0.00	0
0.00	0
0.00	0
0.00	0
0.00	0
0.00	0
0.00	0
0.00	0
0.00	0
0.00	0
0.00	50
0.00	0
0.00	0
0.00	0
0.00	0
0.00	0
0.00	0
0.00	0
WATTS	
OHMS	
FT.	
AWG	
OHMS	
dB	