

GPS Power Control Re-radiating Worksheet Antenna A1

	L1 (1575.42 MHz)		
Site Information			
Antenna ID	A1		
Location Description	West side of hangar, south of centerline		
Coordinates, NAD 83, ddd-mm-ss.s	37-39-56.6 N; 97-25-12.4 W		
Antenna - Receiving (RX)			
Make and Model	GPS Source L1A Active Antenna		
Gain (dBi) @ L1 (LNA included)	36		
Coax			
Type or Description	C-240		
Antenna - Re-radiating (TX)			
Make and Model	GPS Source L1P Passive Antenna		
Antenna Height AGL (ft)	25		
Gain (dBi) @ L1	3.0	Used in calculations in Amplifier/Power Controller section	
Distance to nearest outer wall (meters)	13.7	Used in calculations in Amplifier/Power Controller section	
Free Space Loss @ L1	69.20	$=20*\text{LOG10}(1575.42)+20*(\text{LOG10}((B17+30)/1000))+32.44$	
Amplifier/Power Controller			
Make and Model	GPS Source Metro-M-P110/6.8-NF (L1, Oscillation Detect, Antenna Alarm Monitor)		
Max Permissible EIRP Level P _{Tmax} (dBm)	-70.79	$=-140+20*\text{LOG10}(1575.42)+20*\text{LOG10}(30+B17)-27.55$	
Max Permissible ERP Level P _{Tmax} (with antenna gain) (dBm)	-72.94	$=B21-2.15$	
Controller Programmed ERP Setting (includes antenna gain) (dBm) Must be less than Max Permissible ERP Level	-73	Value is programmed into the controller and is the ERP level radiated from the antenna connected to the amplifier	
Controller Programmed ERP Setting (includes antenna gain) converted to pW	17.00	$=10*(B23/10+9)$	
Controller Programmed Setting (includes antenna gain) converted to EIRP dBm	-70.85	$=B23+2.15$	
Transmitter Power at Controller Terminals (dBm) ahead of antenna	-73.85	$=B25-B16$	
Transmit Power at Controller Terminals (pW)	16.15	$=10*(B26/10+9)$	
Calculated Signal Strength 30 meters Outside Building (dBm EIRP)	-140.06	$=B25-20*\text{LOG10}(1575.42)-20*\text{LOG10}(30+B17)+27.55$	

GPS Power Control Re-radiating Worksheet Antenna A2

	L1 (1575.42 MHz)		
Site Information			
Antenna ID	A2		
Location Description	West side of hangar, north of centerline		
Coordinates, NAD 83, ddd-mm-ss.s	37-39-57.5 N; 97-25-12.4 W		
Antenna - Receiving (RX)			
Make and Model	GPS Source L1A Active Antenna		
Gain (dBi) @ L1 (LNA included)	36		
Coax			
Type or Description	C-240		
Antenna - Re-radiating (TX)			
Make and Model	GPS Source L1P Passive Antenna		
Antenna Height AGL (ft)	25		
Gain (dBi) @ L1	3.0	Used in calculations in Amplifier/Power Controller section	
Distance to nearest outer wall (meters)	13.7	Used in calculations in Amplifier/Power Controller section	
Free Space Loss @ L1	69.20	=20*LOG10(1575.42)+20*(LOG10((B17+30)/1000))+32.44	
Amplifier/Power Controller			
Make and Model	GPS Source Metro-M-P110/6.8-NF (L1, Oscillation Detect, Antenna Alarm Monitor)		
Max Permissible EIRP Level P _{Tmax} (dBm)	-70.79	=-140+20*LOG10(1575.42)+20*LOG10(30+B17)-27.55	
Max Permissible ERP Level P _{Tmax} (with antenna gain) (dBm)	-72.94	=B21-2.15	
Controller Programmed ERP Setting (includes antenna gain) (dBm) Must be less than Max Permissible ERP Level	-73	Value is programmed into the controller and is the ERP level radiated from the antenna connected to the amplifier	
Controller Programmed ERP Setting (includes antenna gain) converted to pW	17.00	=10*(B23/10+9)	
Controller Programmed Setting (includes antenna gain) converted to EIRP dBm	-70.85	=B23+2.15	
Transmitter Power at Controller Terminals (dBm) ahead of antenna	-73.85	=B25-B16	
Transmit Power at Controller Terminals (pW)	16.15	=10*(B26/10+9)	
Calculated Signal Strength 30 meters Outside Building (dBm EIRP)	-140.06	=B25-20*LOG10(1575.42)-20*LOG10(30+B17)+27.55	

GPS Power Control Re-radiating Worksheet Antenna A3

	L1 (1575.42 MHz)		
Site Information			
Antenna ID	A3		
Location Description	Center of hangar, south of centerline		
Coordinates, NAD 83, ddd-mm-ss.s	37-39-56.6 N; 97-25-11.9 W		
Antenna - Receiving (RX)			
Make and Model	GPS Source L1A Active Antenna		
Gain (dBi) @ L1 (LNA included)	36		
Coax			
Type or Description	C-240		
Antenna - Re-radiating (TX)			
Make and Model	GPS Source L1P Passive Antenna		
Antenna Height AGL (ft)	25		
Gain (dBi) @ L1	3.0	Used in calculations in Amplifier/Power Controller section	
Distance to nearest outer wall (meters)	13.7	Used in calculations in Amplifier/Power Controller section	
Free Space Loss @ L1	69.20	=20*LOG10(1575.42)+20*(LOG10((B17+30)/1000))+32.44	
Amplifier/Power Controller			
Make and Model	GPS Source Metro-M-P110/6.8-NF (L1, Oscillation Detect, Antenna Alarm Monitor)		
Max Permissible EIRP Level P _{Tmax} (dBm)	-70.79	=-140+20*LOG10(1575.42)+20*LOG10(30+B17)-27.55	
Max Permissible ERP Level P _{Tmax} (with antenna gain) (dBm)	-72.94	=B21-2.15	
Controller Programmed ERP Setting (includes antenna gain) (dBm) Must be less than Max Permissible ERP Level	-73	Value is programmed into the controller and is the ERP level radiated from the antenna connected to the amplifier	
Controller Programmed ERP Setting (includes antenna gain) converted to pW	17.00	=10*(B23/10+9)	
Controller Programmed Setting (includes antenna gain) converted to EIRP dBm	-70.85	=B23+2.15	
Transmitter Power at Controller Terminals (dBm) ahead of antenna	-73.85	=B25-B16	
Transmit Power at Controller Terminals (pW)	16.15	=10*(B26/10+9)	
Calculated Signal Strength 30 meters Outside Building (dBm EIRP)	-140.06	=B25-20*LOG10(1575.42)-20*LOG10(30+B17)+27.55	

GPS Power Control Re-radiating Worksheet Antenna A4

	L1 (1575.42 MHz)		
Site Information			
Antenna ID	A4		
Location Description	Center of hangar, north of centerline		
Coordinates, NAD 83, ddd-mm-ss.s	37-39-57.5 N; 97-25-12.0 W		
Antenna - Receiving (RX)			
Make and Model	GPS Source L1A Active Antenna		
Gain (dBi) @ L1 (LNA included)	36		
Coax			
Type or Description	C-240		
Antenna - Re-radiating (TX)			
Make and Model	GPS Source L1P Passive Antenna		
Antenna Height AGL (ft)	25		
Gain (dBi) @ L1	3.0	Used in calculations in Amplifier/Power Controller section	
Distance to nearest outer wall (meters)	13.7	Used in calculations in Amplifier/Power Controller section	
Free Space Loss @ L1	69.20	=20*LOG10(1575.42)+20*(LOG10((B17+30)/1000))+32.44	
Amplifier/Power Controller			
Make and Model	GPS Source Metro-M-P110/6.8-NF (L1, Oscillation Detect, Antenna Alarm Monitor)		
Max Permissible EIRP Level P _{Tmax} (dBm)	-70.79	=-140+20*LOG10(1575.42)+20*LOG10(30+B17)-27.55	
Max Permissible ERP Level P _{Tmax} (with antenna gain) (dBm)	-72.94	=B21-2.15	
Controller Programmed ERP Setting (includes antenna gain) (dBm) Must be less than Max Permissible ERP Level	-73	Value is programmed into the controller and is the ERP level radiated from the antenna connected to the amplifier	
Controller Programmed ERP Setting (includes antenna gain) converted to pW	17.00	=10*(B23/10+9)	
Controller Programmed Setting (includes antenna gain) converted to EIRP dBm	-70.85	=B23+2.15	
Transmitter Power at Controller Terminals (dBm) ahead of antenna	-73.85	=B25-B16	
Transmit Power at Controller Terminals (pW)	16.15	=10*(B26/10+9)	
Calculated Signal Strength 30 meters Outside Building (dBm EIRP)	-140.06	=B25-20*LOG10(1575.42)-20*LOG10(30+B17)+27.55	

GPS Power Control Re-radiating Worksheet Antenna A5

	L1 (1575.42 MHz)		
Site Information			
Antenna ID	A5		
Location Description	East side of hangar, south of center line		
Coordinates, NAD 83, ddd-mm-ss.s	37-39-56.6 N; 97-25-11.3 W		
Antenna - Receiving (RX)			
Make and Model	GPS Source L1A Active Antenna		
Gain (dBi) @ L1 (LNA included)	36		
Coax			
Type or Description	C-240		
Antenna - Re-radiating (TX)			
Make and Model	GPS Source L1P Passive Antenna		
Antenna Height AGL (ft)	25		
Gain (dBi) @ L1	3.0	Used in calculations in Amplifier/Power Controller section	
Distance to nearest outer wall (meters)	13.7	Used in calculations in Amplifier/Power Controller section	
Free Space Loss @ L1	69.20	=20*LOG10(1575.42)+20*(LOG10((B17+30)/1000))+32.44	
Amplifier/Power Controller			
Make and Model	GPS Source Metro-M-P110/6.8-NF (L1, Oscillation Detect, Antenna Alarm Monitor)		
Max Permissible EIRP Level P _{Tmax} (dBm)	-70.79	=-140+20*LOG10(1575.42)+20*LOG10(30+B17)-27.55	
Max Permissible ERP Level P _{Tmax} (with antenna gain) (dBm)	-72.94	=B21-2.15	
Controller Programmed ERP Setting (includes antenna gain) (dBm) Must be less than Max Permissible ERP Level	-73	Value is programmed into the controller and is the ERP level radiated from the antenna connected to the amplifier	
Controller Programmed ERP Setting (includes antenna gain) converted to pW	17.00	=10*(B23/10+9)	
Controller Programmed Setting (includes antenna gain) converted to EIRP dBm	-70.85	=B23+2.15	
Transmitter Power at Controller Terminals (dBm) ahead of antenna	-73.85	=B25-B16	
Transmit Power at Controller Terminals (pW)	16.15	=10*(B26/10+9)	
Calculated Signal Strength 30 meters Outside Building (dBm EIRP)	-140.06	=B25-20*LOG10(1575.42)-20*LOG10(30+B17)+27.55	

GPS Power Control Re-radiating Worksheet Antenna A6

	L1 (1575.42 MHz)		
Site Information			
Antenna ID	A6		
Location Description	East side of hangar, north of center line		
Coordinates, NAD 83, ddd-mm-ss.s	37-39-57.5 N; 97-25-11.4 W		
Antenna - Receiving (RX)			
Make and Model	GPS Source L1A Active Antenna		
Gain (dBi) @ L1 (LNA included)	36		
Coax			
Type or Description	C-240		
Antenna - Re-radiating (TX)			
Make and Model	GPS Source L1P Passive Antenna		
Antenna Height AGL (ft)	25		
Gain (dBi) @ L1	3.0	Used in calculations in Amplifier/Power Controller section	
Distance to nearest outer wall (meters)	13.7	Used in calculations in Amplifier/Power Controller section	
Free Space Loss @ L1	69.20	=20*LOG10(1575.42)+20*(LOG10((B17+30)/1000))+32.44	
Amplifier/Power Controller			
Make and Model	GPS Source Metro-M-P110/6.8-NF (L1, Oscillation Detect, Antenna Alarm Monitor)		
Max Permissible EIRP Level P _{Tmax} (dBm)	-70.79	=-140+20*LOG10(1575.42)+20*LOG10(30+B17)-27.55	
Max Permissible ERP Level P _{Tmax} (with antenna gain) (dBm)	-72.94	=B21-2.15	
Controller Programmed ERP Setting (includes antenna gain) (dBm) Must be less than Max Permissible ERP Level	-73	Value is programmed into the controller and is the ERP level radiated from the antenna connected to the amplifier	
Controller Programmed ERP Setting (includes antenna gain) converted to pW	17.00	=10*(B23/10+9)	
Controller Programmed Setting (includes antenna gain) converted to EIRP dBm	-70.85	=B23+2.15	
Transmitter Power at Controller Terminals (dBm) ahead of antenna	-73.85	=B25-B16	
Transmit Power at Controller Terminals (pW)	16.15	=10*(B26/10+9)	
Calculated Signal Strength 30 meters Outside Building (dBm EIRP)	-140.06	=B25-20*LOG10(1575.42)-20*LOG10(30+B17)+27.55	