GNS 5892R ADS-B module

1 COMMAND INTERFACE

Write Commands

- Commands consist always of minimum 2 ASCII characters
- 2 ASCII characters compose 1 binary command or parameter value
- Command and parameter values as well as consecutive parameter values are separated by a delimiter character '-'
- Every command starts with '#'
- Every command is finished by 'Carriage Return' (0x0D)

1.1 GNS 5892R commands

command	value	parameter	example	description
Reset Device	FF	None	#FF<CR>	HW-reset of GNS 5892R is performed
ADS-B mode 0	49	00	#49-00<CR>	Set mode 0 (stop data output)
ADS-B mode 2	49	02	#49-02<CR>	Set mode 2 (output ALL DF – Data)
ADS-B mode 3	49	03	#49-03<CR>	Set mode 3 (output DF17 / DF18 / DF19 – Data only)
ADS-B mode 2+	49	82	#49-82<CR>	Set mode 2 (output ALL DF – Data) with additional Signal Strength Indicator
ADS-B mode 3+	49	83	#49-83<CR>	Set mode 3 (output DF17 / DF18 / DF19 – Data only) with additional Signal Strength Indicator

Command Replies

- Replies consist always of 16 binary values, each value formed of 2 ASCII characters
- Consecutive values are separated by a delimiter character '-'
- Every reply starts with '#'
- Every reply is finished by 'Line Feed + Carriage Return' (0x0A 0x0D)
- 1st and following reply values represent the echo of the previous command. Unused values are padded with '00'
- In case of command error the 1st value is 'FF'

1.2 GNS 5892R command reply examples

prev. Command	Reply	Note
#49-02<CR>	#49-02-00-00-00-00-00-00-00-00-00-00-00-00-00-00-<LF CR>	Command accepted
#55<CR>	#FF-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-<LF CR>	Unknown command

ADS-B data reception example (mode 2)

In case of ADS-B mode 2 (reception of all DF-Data) the 56bit or 112bit raw data frames are output as 14 bytes ASCII frames , or 7 bytes ASCII frames, MSB first.
Every ASCII frame begins with an '*' and is finished by ';' + <CR><LF>.

*8D…. is DF18 **Extended squitter**
*5D…. is DF11 **All-call reply**
…
*8D4B1621994420C18804887668F9;
*02E1991058EF31;
*20000CB10D89FB;
*20001196553C25;
*02E198BFAF8676;
*02C18CB14E2D98;
*02E198BFAF8676;
*200015301CB296;
*20000F971E4582;
*200015B3EF4577;
*583E1BDABC2735;
*280008006C738F;
*8D4CA27A608145305B0B09EAD8B5;
*02E19838575F0A;
*A0001014BC900030A8000038ED68;
*200015301CB296;
*8D400A6658AB0540C701D9CA672E;
*02001690DD3BEE;
*0281861FAE97F2;
*A0001838FFDCE52FA004DFDD1EAA;
*A0001196FE963F3EBFF4DEE49B7C;
*A0000CB0958000316C00004D38CA;
*8D3C66059944B824985400CD3182;
*02E1941016FC9E;
*02061690F1CB68;
*8D400B839911DA8B400490F465E9;
*02C60CB069E472;
*8D40041B90C381906B8516503C0B;
*5D3C5961BAAB6C;
*02E198BFAF8589;
*02E19218468AE;
……

ADS-B data reception example (mode 2+)

In case of ADS-B mode 2+ (reception of all DF-Data with additional Signal Strenght Indicator) the 56bit or 112bit raw data frames are output as 15 bytes ASCII frames , or 8 bytes ASCII frames, MSB first.
Every ASCII frame begins with an '#' and is finished by ';' + <CR><LF>.
The first byte following the '#' is the signal strength indicator of the current ADS-B frame.
The following bytes represent the received ADS-B data.

#**1B**5D3DDDD1707EA1;
#**1A**A800023AC4600030A80000FB50EB;
#**1A**80E1969158B51233C9445A63D2C7;
#**1C**A00002340008D70AFFC800EB0AEC;
#**1B**A00002340008D70AFFC800EB0AEC;
#**1A**80E1969158B51233C544583A3DD0;
#**1B**5D3DDDD1707EA1;
#**1A**5DC03ABCB09F16;
#**1B**020502344DA06C;
#**1B**A0000234200903F2CA0820AD4526;
#**19**A0001691FA81C100000000BBB0E0;
#**1A**200016917CBBF2;
#**1A**200016917CBBF2;
#**19**A0001691FA81C100000000BBB0E0;
#**1A**02E61691A25E5B;
#**1A**5DC03ABCB09F16;
#**19**02E196917A63B8;
#**18**5D3CCD4B9AF88F;
#**1B**20000234A0B9D0;
#**1A**20000234A0B9D0;
#**1A**A0001691C4600030A80000EBA589;
#**1A**8DC03ABC58B51233A9445A329207;
#**1A**A800023AC4600030A80000FB50EB;
#**1A**A0001691AA4A1331201400F416FB;
#**1A**8DC03ABC9901939CA00706079C17;
#**19**5DC03ABCB09F1C;
…

Important note

The Signal Strenght Indicator preceded by the data is only an indicator of the field strength of the received frame and not a measured value from which the distance to the transmitter can be derived. The range of the value is approximately between 0x18(far distance signals) and 0x2d (near distance signals).