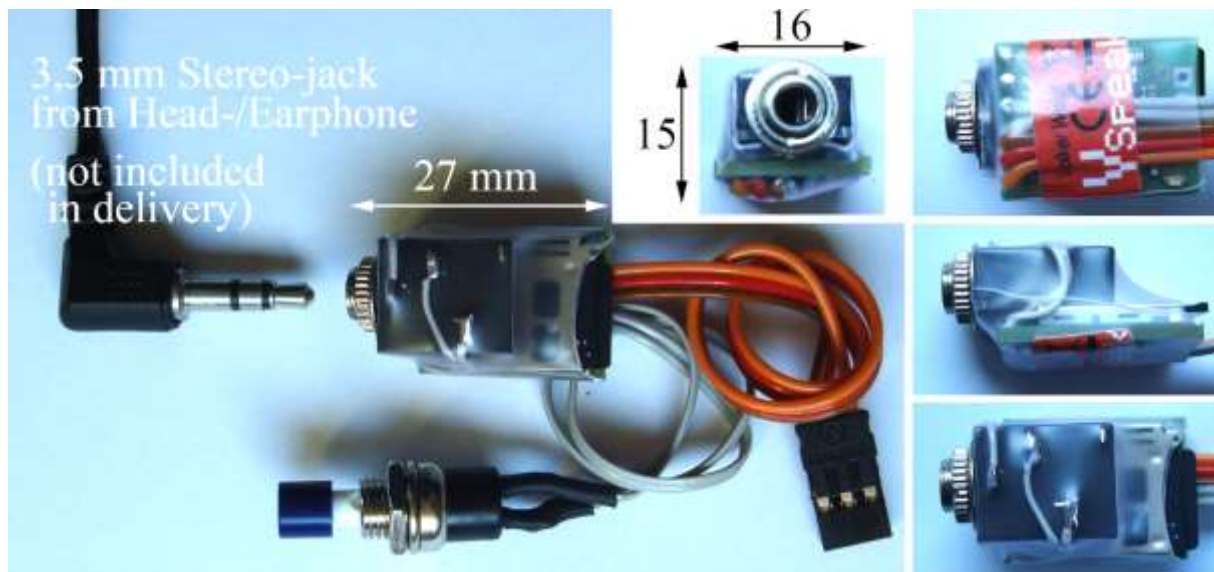




- for -

**MSB (Multiplex Sensor Bus)
Multiplex MLink
ACT S3D MBus**

Manual Version 1.6



Introduction

With this module, data that is detected by sensors on the MSB-compatible receiver side, can be output as speech on the transmitter.

Except multiplex (www.multiplex-rc.de) - which has developed the multiplex sensor bus (MSB) - the company ACT (www.acteurope.de) also uses this standard, to collect data in the model of sensors. The MSB protocol is disclosed by the company Multiplex, so that a variety of sensors from different manufacturers in the models can be used.

The multiplex sensor bus is disclosed only for the receiver side, the protocol for the data on the transmitter is another, both multiplex itself - as well as ACT.

VSpeak mastered all these protocols, i.e. the speech output module can be connected to Multiplex MLink transmitters and ACT S3D telemetry transmitters. In addition, the module can also be connected to the receiver-side MSB (but makes - except for testing purposes - no sense).

In the realization of the module the focus is on:

- **no** influence on the radio-/receiver-system
- minimum dimensions to have the module fit even to the smallest hand radio

The operation of the speech module is provided through a switch which is designed as a non-latching switch.

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Appendix: Multiplex - Compatibility information

1 Installation

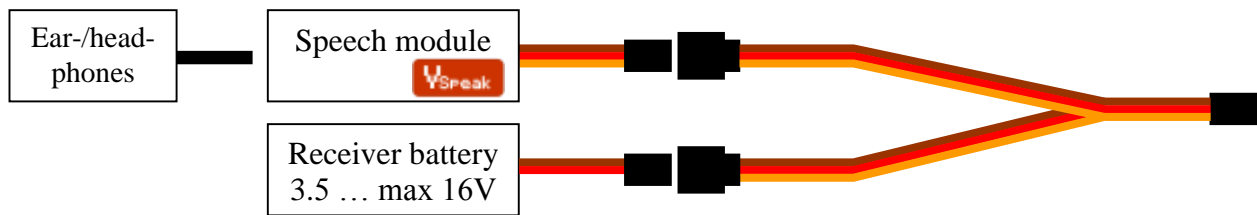
The speech module can be screwed on the male threads of the 3.5 mm stereo jack plug in the radio housing.

The switch is to be positioned in a good accessible place.

2 Connection

2.1 Testing the functionality

With a V-cable (Graupner/JR), a receiver battery and ear- or headphones, the speech module can be connected and tested for function according to the following diagram. The speech module will report the version as soon as the battery is connected.

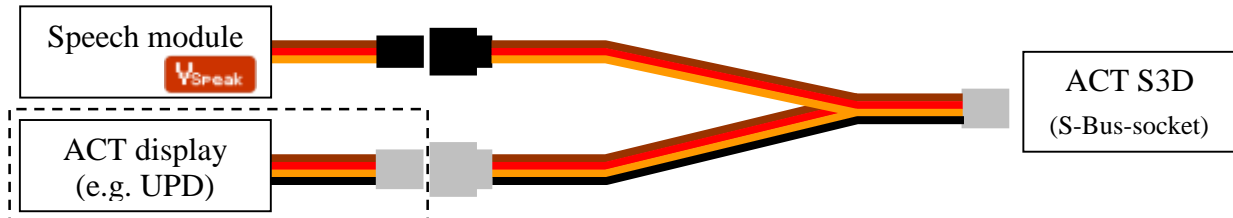


2.2 ACT-S3D-TX-Module (... für Telemetrie)

(tested on S-16T Universal S3D dual module, ACT Item no.: 526190U)

Using the "S-Bus-VSpeak-Adapter" - cable the speech module can be connected to the ACT transmitter module.

The speech module can be operated on the ACT system alone - over the "S-Bus-VSpeak-Adapter" the ACT display devices can also be operated in parallel (...dashed lines in the following diagram).



2.2.1 ACT-Features

ACT differs from Multiplex in the presentation of the sensor values in the following points:

Addresses: The addresses 0 and 1 are permanently assigned: 0... receiver voltage
1... connection (LQI)

Thus it makes no sense to use these addresses for sensors.

Alarms: The Alarms that are set in the sensors will be ignored by the ACT displays. Alarm thresholds MIN / MAX can be set separately for each sensor value in the display device.

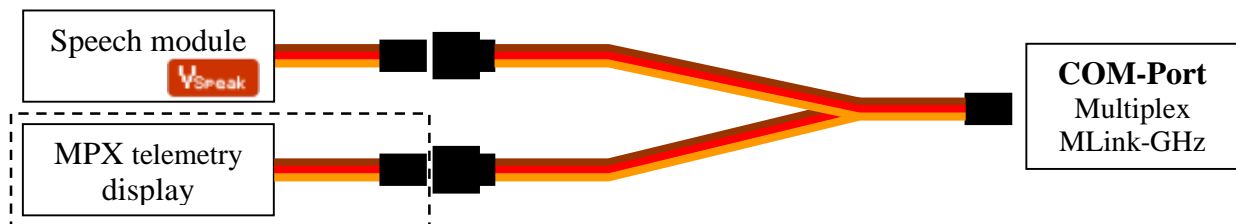
VSpeak responds only to alerts from sensors. Thus VSpeak cannot output the alarm for the addresses 0 (receiver voltage) and 1 (connection) because the so-called "alarm flag" is not set on the M-Bus!

2.3 Multiplex-MLink

(tested on: module HFMG2 M-LINK 2,4 GHz, MPX Item no.: 45615
module HFM4 M-LINK 2,4 GHz, MPX Item no.: 45611 in ROYALpro9)

The speech module can be connected to the Multiplex-MLink GHz modules, to the intended connection, COM port, of the telemetry displays (MPX Item-No. 45182) - either directly (without telemetry display - dashed line), or as in the following graphics shown parallel with the telemetry display with a V cable (Graupner/JR).

Whether the COM port of the present MLink RF module can be used for the connection of VSpeak - or an update / upgrade must be performed by multiplex is described in the "Compatibility Information" in the Appendix of this manual.



example:
HFMG2 M-LINK
(MPX-Art.-Nr.: 45615)

VSpeak is plugged into
the connector market
„COM“.

The connection can also
be used for the MPX-
telemetry display.

2.3.1 Multiplex-Radio ROYAL pro / evo M-LINK

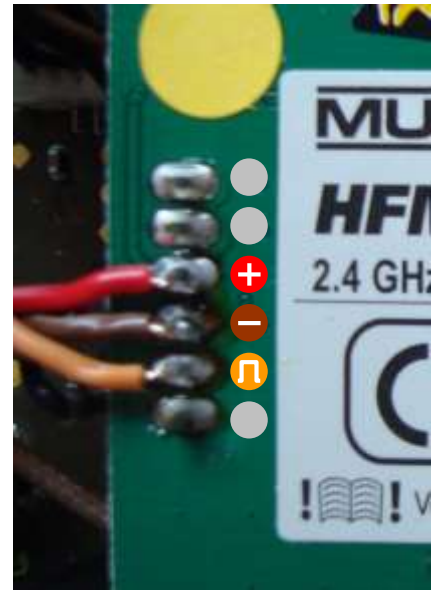
(tested on ROYALpro9 with module HFM4 M-LINK 2,4 GHz, MPX Item no.: 45611)

Who doesn't want to update/upgrade an old-HFM4 MLink module, can connect the speech module as an alternative, as seen in the pictures below.

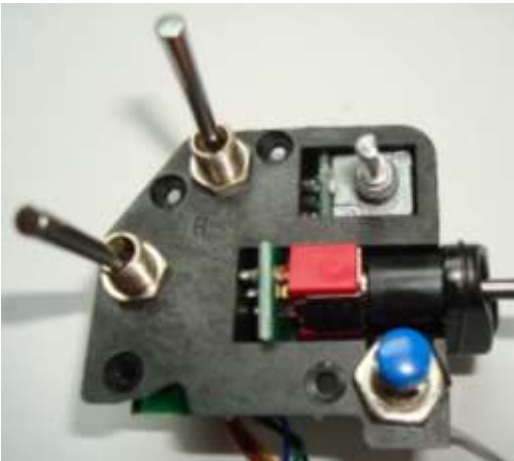
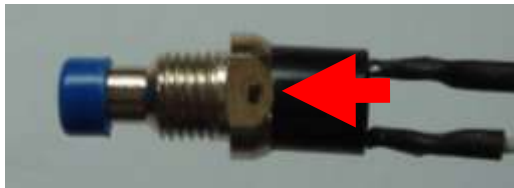
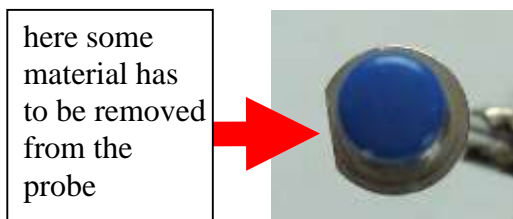
A Graupner / JR Servo counter cable is to be soldered to the GHZ module. The jack is plugged to the speech module VSpeak.

Comment company Multiplex:

In the instruction manual for transmitter ROYALpro the company Multiplex points out explicitly under the section "warranty" that they reject any warranty or other claims that may arise from the operation, in particular through the necessary technical intervention in the transmitter unit (soldering).



The VSpeak-button can be installed in a corner unit with a little reworking, "Retrofitting the switch K and / or P" according to the "MPX Manual" chapter.



2.4 Communication

If properly installed, the speech module does not affect the functionality of the transmission system.

The speech module does NOT interfere with the data exchange, i.e. there is no signal output to the transmission system. In a way, the speech module "listens" to the GHz module, interprets the data and transfers that as speech as described in the following sections.

2.5 Operation display

Error-free operation of the speech module is indicated by the "flashing" blue LED light.

3 Speech output

There are 3 types of the speech output:

3.1 Announcement of the sensor values

The start of the announcement of the sensor values is made either by key operation - or timed. Furthermore the announcements of capacity and altitude can be triggered if an adjustable difference is exceeded. The corresponding settings are described in section 5. It is possible to select the announced sensor values individually. Also ALL announcements can be switched ON / OFF.

The values are announced in accordance with its address in order from 0 to 15. Unused addresses are skipped (the address is equal to the display number).

3.2 Announcements of the alarms

For each measured value according to MSB specification, an alarm can be generated. The alarm thresholds are adjusted in the corresponding sensor or can there be programmed.

As soon as from the sensor an alarm has been triggered, occurs the announcement: "Alarm" + associated, triggering measured value.

To prevent a "permanent" active alarm (e.g. limit on power consumption has been exceeded), blocking the announcement, can the alarm be paused. For this time the alarm message for this sensor value is suppressed - only after the expiry **and** then - still / or again - pending alarm would this be announced again.

3.3 Announcement of the settings (Setup)

A variety of settings on the speech module can be made with the keys (see section 5.3), those will be announced.

4 Vario sound

As long as a sensor is connected, which outputs the values to a MSB value class 3 (see section 5.3, table "Multiplex Sensor Bus (MSB) value classes and ranges") on a address space, a measurement for rising / falling, then the speech module generates in the language breaks a Vario sound proportional in frequency to rising / falling.

In order to better distinguish between rising and falling, the tone for the rising is also interrupted. The interruption duration decreases with increasing climbing. The zero slide, neither rising nor falling, is soundless.

For the vario sound a number of settings can be made in the settings (see section 5.3):

Vario sound rising:	ON/OFF
Vario sound falling:	ON/OFF
Vario sensitivity	0.1 ...0.2 ... 0.3 m/s
Vario sound volume:	1, 2, 3, 15, 16, 15, 14,3, 2

For a long climb passages, e.g. E-gliders, F-trail, or just during "gymnastics" can the Vario-sound be switched OFF and the ON again by double-clicking (2x short activation).

5 Operation of the speech module

The speech module VSpeak is operated with the switch (non-latching switch). To check the function of the key a blue LED is lit for the duration of the operation.

The key can be pressed in four different ways:

5.0 "long key stroke"

If the key is pressed and held (> 2sec) the timed announcement is switched OFF or ON. The setting is announced, either:

"Timed announcement is OFF" - or - "timed announcement is ON"

Thus, only the cyclically recurring announcements of the reading is switched OFF / ON.

Using "single-click" the announcement can be started anytime. Also, the announcement of the alarms is done regardless of the setting made here.

The setting is saved.

5.1 "single click"

Using "single-clickv (Button 1 x pressed briefly) the "regular announcement" is started (see section 3.1).

Is the speech module in mode "settingsv (see section 5.3), then, by pressing the key, the reading-switching or changing takes place. In addition, the setting menu can also be stopped.

5.2 "double click"

By "double-clickingv (key 2 x pressed in quick succession) the vario tone is turned OFF or ON.

The setting is announced, either:

"Vario sound is OFF" - or - "Vario sound is ON"

The setting you make is NOT saved.

5.3 "triple click"

Using "triple-click" (key 3 x pressed in quick succession) you get into the mode "settings" of the speech module. You can configure 3 different parameter-sets, which can be changed quickly. During the announcement is the key on 'confirmed' always asked in the times that are stored in the table below "yellow", i.e. in the "value" AND "waiting time".

All settings are saved - except for the setting parameter No. 29, "wav test".

During the announcement of the "setting parameters" ("gray" background) the setup can be cancelled by pressing the key. The changes made until the abortion will be saved.

Table settings			
No	Setting parameter	Value	waiting time
1	"Vspeak: settings"	"1" "2" "3"	
2	"language"	< selection language >	
3	"voice of"	< selection voice >	
4	"volume"	< value >	
5	"stop timed announcements"	< value > "seconds"	
6	"announcement current consumption"	"ON"/"OFF" / "100"/ "200"/"500"/"1000" "mAh"	
7	"announcement altitude or short distance"	"OFF" "5"/"10"/"20"/"25"/"50"	
8	"break alarm"	< value > "seconds"	
9	"address announcement 0" < MSB – value class >	"ON" / "OFF"	
10	"address announcement 1" < MSB – value class >	"ON" / "OFF"	
..	...	"ON" / "OFF"	
23	"address announcement 14" < MSB – value class >	"ON" / "OFF"	
24	"address announcement 15" < MSB – value class >	"ON" / "OFF"	
25	"vario sound rising is"	"ON" / "OFF"	
26	"vario sound falling is"	"ON" / "OFF"	
27	"vario sensitivity"	"0.1" / "0.2" / "0.3" "m/s"	
28	"vario sound volume"	< value >	
29	"wav test"	"ON" / "OFF"	
30	"end of settingsv"		
31	"changes have been saved"		

To 1: < **VSpeak: settings** >

There are 3 sets of different parameters available. You can change the parameter sets here easily.

To 2: < **slection language** >

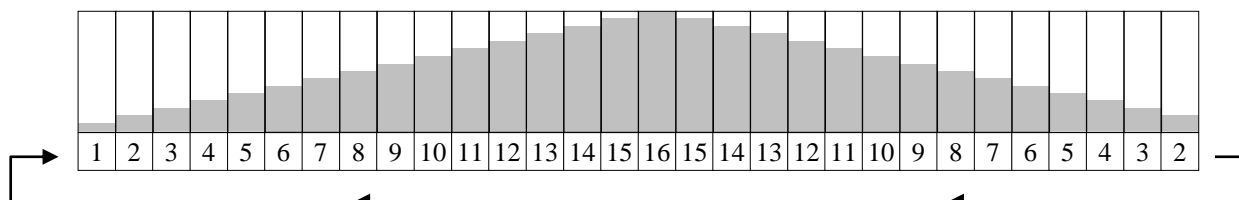
german, english, french, spanish, czech, Russian, portuguese, italian, dutch and hungarian

To 3: < *selection voice* >

(see section 6 "wav files") The voices are in each "Voice directory" in the directory "voice" saved. The directory "XYZ" (available in each "language directory") can be used for self-recorded wav files.

To 4: "*volume*"

The volume of the announcements can be adjusted in 16 steps.



To 5: "*stop timed announcements*" < *value* > "*seconds*"

The following values can be set for the interval time (in seconds):



To 6: "*announcement current consumption*"

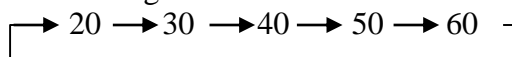
If you set the value to 100,200,500 or 1000 mAh, you will get an announcement if the consumption changes by the set value. For multiple capacitance values (e.g. monitoring of double power supplies) the capacity will be calculated by adding all values to a sum and announced.

To 7: "*announcement altitude or short distance*"

If you set the value to 5,10,20,25 or 50, you will get an announcement if the altitude changes by the set value. When multiple values of the class "altitude or short distance" are transmitted, only the value with the **smallest MSB address** for this type of announcement is active.

To 8: "*break alarm*" < *value* > "*seconds*"

The following values can be set for the interval time (in seconds):



To 9 ...24: "adress announcement <n>" < MSB – value class > "ON" / "OFF"

According to the definition MSB is each measured value on an address space and therefore display place a value class assigned, so that the transmitted numerical value can be displayed in an useful way.

< MSB – value class > will now be assembled from the following table:

< Description > "in" < Unit >

Multiplex Sensor Bus (MSB) value classes and ranges						
Value class	Description	Unit	MSB resolution	VSpeak resolution	Min value	Max value
0	no data					
1	voltage	V	0,1	1 0,1 1	20,0 -19,9 -60,0	60,0 19,9 -20,0
2	current	A	0,1	1 0,1 1	20,0 -19,9 -100,0	100,0 19,9 -20,0
3	rising or falling	m/s	0,1	1 0,1 1	10,0 -9,9 -50,0	50,0 9,9 -10,0
4	speed	km/h	0,1	10 1	100,0 0,0	600,0 99,9
5	rotation speed	rpm	100 10	100 10	2000 0	500000 1990
6	temperature	°C	0,1	10 1	150,0 -25,0	700,0 149,9
7	direction	° (Grad)	0,1	1	0,0	360,0
8	altitude or short distance	m	1	1	-500	2000
9	tank level	% of tank level	1	1	0	100
10	link quality indicator	% signal level	1	1	0	100
11	current consumption	mAh	1	100 10 1 10 100	1000 100 -99 -999 -16000	16000 999 99 -100 -1000
12	fluids	ml	1	100 10 1	1000 100 0	16000 999 99
13	long distance	km	0,1	0,1	0,0	1600,0
14						
15						

When delivered by VSpeak all addresses are on "ON". The value for "adress announcement <n> no data ON" does not need to be set to OFF: because this address has no assigned value, it will not be announced.

The announcement accuracy of VSpeak module may differ from the values displayed in accuracy because if a shorter duration announcement takes place a rounding of the measured values is made. The table above shows the possible display resolution of the data as well as the resolution of the VSpeak module to the value ranges.

To 27: *"vario sensitivity"*

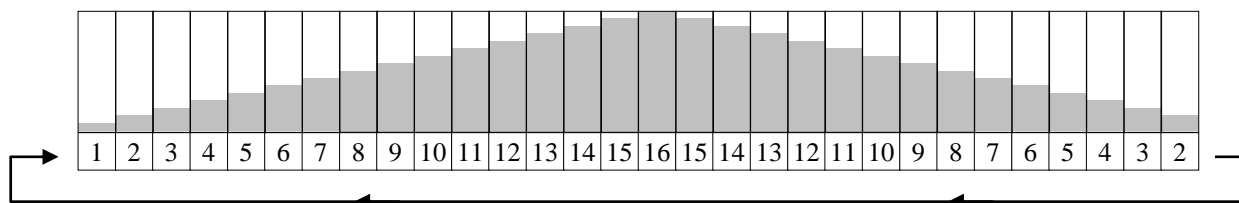
The sensors for the vario value "rising or falling" can have a different quality, so it may be that despite model at rest (e.g. on the ground - or in the home workshop), / the decimal point of the measured value "shakes" to 0.1 / 0.2 / 0.3 m/s or more. Because this generates the Vario sound, it would cause unnecessary vario sounds. To prevent this, the sensitivity for the vario sound generating in steps of 0.1 .. 0.3 m/s can be adjusted.

Context "Vario sound sensitivity" zero lift / max values (in m/s)			
sensitivity	zero lift (soundless)	max. falling	max. rising
0.1	0.0	- 2.0	+ 2.0
0.2	- 0.1... + 0.1	- 4.0	+ 4.0
0.3	- 0.2... + 0.2	- 6.0	+ 6.0

Rise and fall - values beyond the maximum values in the above mentioned table, they are no longer distinguished by the Vario sound, i.e. these are signaled by the respective Max Vario sound.

To 28: *"vario sound volume"*

The vario sound can be adjusted in 16 steps in its volume. While setting a tone is generated, which corresponds to the "least falling".



To 29: *"wav test"*

Is "wav Test ON" selected all wav files are played to the selected voice. This is an endless loop which can be stopped by pressing a key.

The wav-test serves "creative" users to test their self-recorded wav files.

The setting is not saved.

To 31: *"changes have been saved"*

If settings were made under the previous points they are only saved **now at this point** - if no changes were made - this announcement is not applicable.

Accidental - or - incorrect entries can thus be discarded by switching off the radio before reaching this announcement.

5.4 Notes on useful settings and operation

As described above, a number of settings can be made for the speech module VSpeak.

According to the selection (see section 5.3 6 ... No. 21), the sensor values are all announced at once (...without a break), according to their address in ascending order. The start of the announcements can optionally be time-controlled (after expiry of the time "stop timed announcements") or on request ("single-click").

Furthermore you can enable the announcement of altitude and current consumption on a set difference (and no other announcement is happening at this moment).

To avoid being distracted by too many announcements one should **only allow a few announcements** for the timed announcement or announcement to "single-click" (Immediate Start).

For sensors that e.g. show the battery capacity or level display, the corresponding alarms should be programmed. If an alarm condition sets in, then the corresponding alarm + measured value is announced and - if the alarm after the alarm is still active or is lined up again - repeated. Thus, it makes sense to relocate the alarm threshold "to the front". For battery capacity level or filling level one would have still a reserve (after the expiry of the alarm pause the current value will be announced again).

Alarm + measured value are always announced - even if the announcement for the respective address is turned to "OFF"!

Example: (E-) glider with Vario sensor and current-/voltage-Sensor (hence capacity)

For a glider the altitude - in addition to the Varioton - is the most interesting sensor value that one want to have announced. All other measured values come only to announcement when programmed alarm thresholds are reached.

1. Alarms are to be programmed for: current
voltage (/ receiver voltage)
current consumption
...
2. At "address announcement ..." up to "altitude or short distance" turn ALL connected sensors to OFF.

Now you can concentrate on the Vario sound. As long "timed announcement is ON" was selected, the Vario sound is only interrupted after the expiry of "stop timed announcements" with the announcement of the altitude - or – with "single click" with the announcement of the altitude.

If in the meanwhile an alarm condition, e.g. battery capacity occurs then the announcement "alarm" + current consumption measurement sets in.

6 wav files



The wav files (audio files of the announcements) are arranged in accordance with the adjacent picture in directories according to the country code (e.g. DE for German) and voices: (e.g., Robbi, Rolf, Silvia ...).

The directory "XYZ" is available in any language. The available wav files can be replaced by "diligent" users of the VSpeak module by own recordings, i.e. can be overwritten.

To create your own wav files there's useful information on the website: www.VSpeak-modell.de under downloads:

The self-generated wav files can be easily tested in VSpeak (see section 5.3):

1. Settings choose <language> and <voice>
2. settings "wav test ON"
(the wav files are played in an infinite loop)

"Creative self-generated voices" can be mailed for review and inclusion in the selection of voices by VSpeak at the address mentioned in section 13.

7 Update

The processor on the speech module contains a SD bootloader with a version counter.

If firmware updates are available they will be sent via mail. The information in the mail files are copied on the Micro SD card (formatted FAT or FAT16), this is inserted into the speech module and power turned on. The boot loader will recognize the new software version, boots (blue LED "flickers") and is now up to date.

Everytime with the first turning on the current version number is announced.

8 Accessories

The "S-Bus-VSpeak-Adapter" cable for ACT transmitt module must be ordered separately via www.vSpeak-modell.de.

Graupner/JR servo counter cable, V-cable and earphones are not included as these are often already present.

Suggestions for receiver / speaker / BT devices:

1. **Wired earphones** www.conrad.com article no.: 386308.
(in our opinion the best price-performance ratio)

2. Hama mini-speaker www.conrad.com article no.: 343151.

3. Wireless via Bluetooth transmitter "B-SPEECH TX2" from www.reichelt.de
The BT transmitter functions with just about every BT headsets except those devices specified in the manual (mobile phone accessories).

Note: In order to enable the B-SPEECH TX2 in pairing mode, hold down the On button until the red **AND** the blue LED flashes (about 7s). At this point, the manual is a bit "thin".

Position BSpeech module and active speaker at a sufficient distance to 2.4 GHz radio antenna!

9 Technical data

Power supply	3.5 ... max. 16V
Power usage	ca. 18 .. 30 mA
Dimensions	27 x 16 x 15 mm
Weight	7 g
Connections	3.5 mm stereo jack, short-circuit-proof output for earphone Graupner / JR servo plug input

10 Instructions for disposal



Equipment marked with the symbol should not be disposed of within household waste.

11 EG Declaration of Conformity

Manufacturer

VSpeak-Modellbau (Volker Weigt)
Priestewitz



We hereby declare that the product

Speech module VSpeak

complies with the following European directives:

2004/108/EC EMC Directive
2006/95/EC Low Voltage Directive (LVD)
2011/65/EC Restriction of Hazardous Substances (RoHS)

The presumption of conformity is taken by applying the following harmonized standards:

EN60065 Audio-, video- and similar electronic apparatus - Safety requirements
EN60332 Tests on electric and optical fibre cables under fire conditions
EN60950 Information technology equipment - Safety
EN61000-6-1 Electromagnetic compatibility (EMC)
EN61000-6-3
EN55022 Information technology equipment - Radio disturbance characteristics

Priestewitz, 2012/01/01

.....
Signature

Volker Weigt

Managing Director

12 Version history

Vers.-No	Date	Comment
1.0	01.2012	first retail version
1.1	02.2012	Adaption to MSB_V2, rotation speed also with 10 rpm resolution Possibility of connecting to COM port additional voices: Kathi and Bernd2
1.2	06.2012	additional voice: Gert Setup: - NEW: Volume control also for announcements - NEW: Setup abort by keystroke
1.3	06.2012	Error correction no 28 "vario sound volume" in Settings
1.4	11.2012	new voices in Czech and Russian
1.5	09.2013	evaluation of the checksum in multiplex MLink new voices in portuguese, italian, dutch and Hungarian
1.6	01.2015	Rounding the values for shorter announcements Evaluation of the checksum during ACT system Altitude and capacity difference triggered announcement is possible Support for 3 different parameter sets

13 Contact

Volker Weigt

www.VSpeak-modell.de

mail: volker.weigt@vspeak-modell.de

Telemetry-Display # 4 5182

→ **Compatibility information**

→ **Upgrade offer: M-LINK RF modules and COCKPIT SX**

February 2012



Dear customer,

We are delighted that you are interested in our new Telemetry-Display. The unit is basically compatible with all MULTIPLEX M-LINK RF modules (with the exception of the HFMx M-LINK, # 4 5612), including the COCKPIT SX transmitter. Depending on the hardware and software versions of your RF module or transmitter, it may be necessary to install a software update or a hardware upgrade in order to use the Display successfully.

This information sheet informs you which versions of your components you own, whether a software update or a hardware upgrade is required, and whether you can carry it out yourself, or have to ask a MULTIPLEX Service Centre to do it for you.

1. The following RF modules / transmitters can be used with the Telemetry Display without any update or upgrade:

- **HFMG1 M-LINK RF module # 4 5614** → see first page
- **HFMG2 M-LINK RF module # 4 5615** → see first page
- **HFMG3 M-LINK RF module # 4 5616** → see first page
- **HFMx V2 M-LINK RF module # 4 5613** → see first page

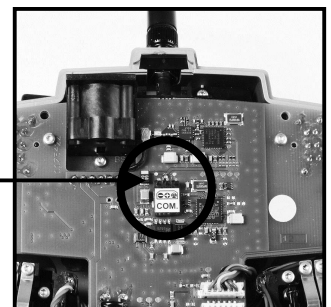
- **HFM3 M-LINK RF module # 4 5610**
→ with "COM." port
and
→ software version 0.43 or later ("SW 0.43" on the case)



- **HFM4 M-LINK # 4 5611**
→ with "COM." port
and
→ software version 0.44
(the version is displayed briefly in the second line of the ROYALpro or evo screen when the transmitter is switched on)



- **COCKPIT SX M-LINK transmitter**
→ with "COM." port
(serial number 784196 or later)
and
→ software V3.08 or later
(the transmitter software is displayed when the digi-adjuster is turned five clicks to the right after switching the transmitter on)
and
→ RF software V0.44 or later (serial number 812092 or later)
(RF SW version (0.44 or later) is printed on the case label on the rear of the COCKPIT SX)



2.1 A hardware upgrade is required if:

HFM3 M-LINK or HFM4 M-LINK RF module

→ there is no "COM." sticker on the module

COCKPIT SX M-LINK transmitter

→ the device is older than serial number: 784196

The hardware upgrade can only be carried out by an authorised MULTIPLEX Service Centre.

Please use the order form appended to this information sheet.

2.2 Just an RF software update is required if:

HFM3 M-LINK RF module

→ the "COM." port is present, but the module does not bear a "SW 0.43" sticker.

HFM4 M-LINK RF module

→ the "COM." port is present, but the RF software version is not V0.44 or higher

(ROYALpro or evo: this is displayed briefly in the second line of the screen when the transmitter is switched on)

COCKPIT SX M-LINK* transmitter

→ No "SW 0.44" sticker present on the back of the case (RF software)

* For use with the Telemetry-Display, the COCKPIT SX M-LINK transmitter must also be running transmitter software V3.08 or higher.

The update can either be installed by an authorised MULTIPLEX Service Centre (please use the order form appended to this information sheet), or by the user himself.

To update the software of your RF module or your transmitter you require the following items:

- **MULTIPLEX Launcher PC program:**
This is available as a free download from www.multiplex-rc.de.
Keep your copy of Launcher up-to-date using the "Online-Update" facility (menu point "Extras").

- **USB UNI PC lead # 8 5149**

This is the procedure for updating the RF software:

1. Switch the transmitter OFF, and connect the USB PC lead to the "COM." port on the RF module or transmitter. It is essential to connect the plug and socket correctly ("+" = red, "-" = black). Connect the USB PC lead to the PC.
2. Switch the transmitter ON. Open the MULTIPLEX Launcher PC program, select the correct COM (USB) port, and start the search.
3. Once MULTIPLEX Launcher has detected the RF module or transmitter RF section, select the latest update version and load it.
4. When the update is complete, switch the transmitter OFF and disconnect the USB PC lead.

To update the COCKPIT SX transmitter software you need the **USB transmitter PC lead # 8 5148**; connect this to the transmitter's multi-function (charge) socket and carry out the update process as described under points 2 to 4.

3. Service Check in conjunction with a hardware upgrade / software update

Just as you take your car to a garage for regular servicing, we recommend that you send your radio control system to our factory at regular two-year intervals for a check-up, as RC transmitters are subject to ageing effects and wear in the same way. Have your equipment checked, adjusted and worn parts replaced where necessary

➔ **SERVICE CHECK for GREATER SECURITY!**

If you are having an upgrade or update carried out, exploit the opportunity to have a complete system check - including stick calibration - at a special low price (except checking of the transmitter battery; additional cost of repair materials payable after quotation and separate order).

RF module / transmitter upgrade for Telemetry-Display**Order to:**

MULTIPLEX Modellsport GmbH & Co. KG
 Gewerbestraße 1
 D – 75015 Bretten-Gölshausen

Date: Name: No., street: Town / Country: E-mail:  **Methods of payment:**
 Credit card: Visa Master

Card number (16-digit PIN):

valid until (mm/yy):

Card security number (KPC/CVC):

(last three digits on reverse of card)

Card holder:

- PayPal** After receipt of the bill by e-mail
 Transfer After receipt of the bill by e-mail
 C.O.D. (within Germany only)

I am sending you the following item for conversion:

 HFM3 M-LINK module HFM4 M-LINK module COCKPIT SX M-LINK transmitter
 with:

I wish to order the following:

- # 90 2251 Upgrade / update without Telemetry-Display # 45182 **29.90 EUR***
 # 90 2252 Upgrade / update with Telemetry-Display # 45182** **99.90 EUR***
 # 90 2235 Additional Service Check (only in conjunction with above upgrades / updates) **30.00 EUR***

* Price incl. VAT plus freight

** Telemetry-Display # 4 5182 supplied in packet; display is not mounted!

Notes:

Customers outside of Germany order the upgrade/update from our service partners listed below. For availability / prices / conditions please consult directly:

Österreich	Heinz Hable Modellelektronik Seppengutweg 11 A – 4030 Linz ☎ +43 732 321100
Schweiz (Schweizer Kunden senden die Geräte bitte nicht nach Deutschland, wegen Zollabwicklung) Suisse (Les clients suisses n'envoient pas les appareils en Allemagne pour éviter les formalités de douanes) Svizzera (si prega i clienti svizzeri di non inviare gli apparecchi in Germania per via dello sdoganamento)	KEL-Modellbau Senn / RC-Service Basel Felsplattenstrasse 42 CH – 4055 Basel ☎ +41 61 3828282 ☎ +41 61 3828281 eMail: rc-service@kel-modellbau.ch
France	Jean-Marie Messe BP 12 Bât. at home, Etage nr.3 6, rue Usson du Pointou F – 57730 Folschwiller ☎ +33 3 87 94 62 58 eMail: sav-messe@wanadoo.fr
Netherlands	Jan van Mouwerik MULTIPLEX Service Slot de Houvelaan 30 NL– 3155 VT Maasland ☎ +31 105913594
U.K.	Michael Ridley C/O Mainly Planes 'N' Trains 6 Ashdown Road, Chandlers Ford U.K. – Eastleigh, SO 53 5RD ☎ +44 7708 436163 eMail: mike@modelradioworkshop.co.uk
Sverige	ORBO elektronik / hobby ab Box 6021 S-16206 Vällingby ☎ +46 8 832585
Australia	David Leigh 64 Koongarra Ave, Magill 5072, South Australia ☎ +61 88332 2627