

Application Note

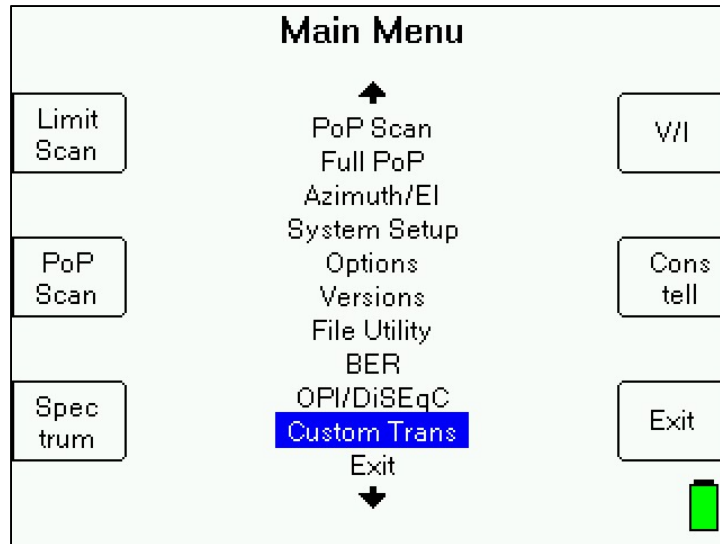


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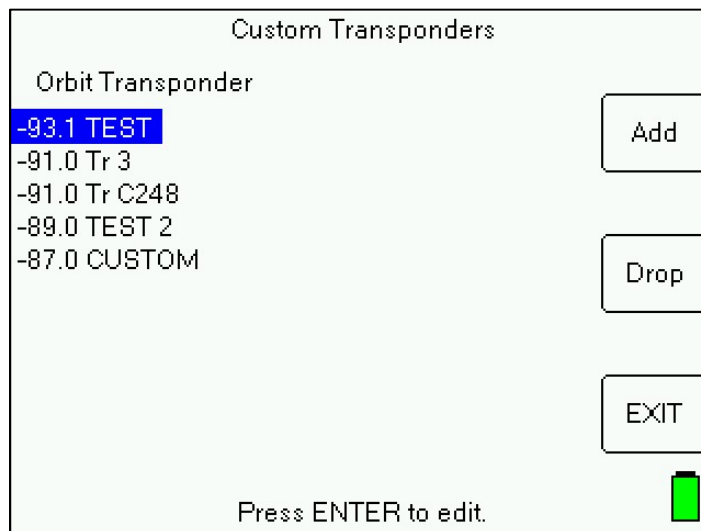
Adding Custom Satellite Transponders to the XR-3(W) Satellite Meter

Requirements: XR-3(W) base unit with a satellite module.

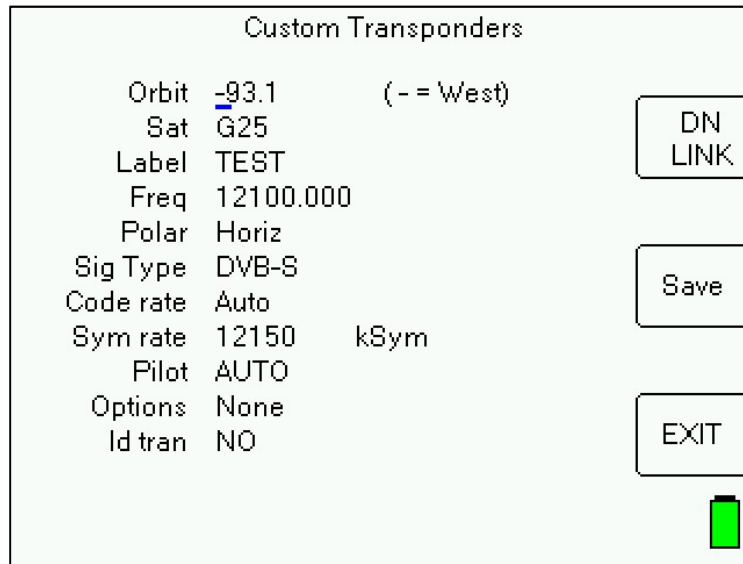
- You can define and permanently save up to 256 custom transponders in the database of the XR-3.
- To enter the Custom Transponder setup screen from the main Run screen, press MENU soft key (located near bottom right corner of LCD screen). Then use your Up or Down arrow buttons to select 'Custom Trans' near the bottom of the Main Menu list, and press the Enter button.



- Any saved custom transponders in the meters database will be shown. If none have been saved, meter will indicate that.



- If you wish to edit those already saved custom transponders, highlight a custom transponder and press Enter button.
- Press "Add" soft key (located near top right corner of LCD screen) to add a new custom transponder.
- If you wish to delete an already saved custom transponder, highlight a custom transponder and press "Drop" soft key (located near middle right side of LCD screen).
- If you wish to exit the Custom Transponders screen, press the EXIT soft key (located near bottom right corner of LCD screen) to return to the Main Menu.
- Add or edit will take you to a screen to define the transponder parameters. The layout of the Custom Transponder parameters screen is similar to the Manual Tune screen. Use alphanumeric keypad to type in field values. After entering a value, press the Enter button. Use Up and Down Arrow buttons to navigate to the next field.



Custom Transponder Parameters Fields editable by you:

- Orbit - Specify orbital location of satellite. For satellites located west of the Prime Meridian, type a "-" in front (i.e. -89.0 for 89.0°W)
- Sat - Specify name of satellite (i.e. Galaxy 28)
- Label - Specify transponder label (i.e. Tr 5)
- Freq - Specify frequency of transponder (i.e. 12149.625).*
- Polar - Using Left or Right arrow buttons, specify polarization of transponder (i.e. Horizontal or Vertical or Left or Right)
- Sig Type - Using Left or Right arrow buttons, specify signal type (i.e. DVB-S, DVB-S2, S2-ACM, Other, or DSS)
- Code rate - Using Left or Right arrow buttons, specify Code Rate / FEC (i.e. Auto or 1/2 or 2/3 or 3/4)
- Sym rate - Specify Symbol Rate (i.e. 2010 kSym)
- Pilot - Using Left or Right arrow buttons, if applicable, specify Pilot status (i.e. AUTO or OFF or ON)
- Optns - If applicable specify any other options relevant to the transponder
- Id - Using Left or Right arrow buttons, specify if you want this custom transponder to be used as an ID transponder for ID verification check on the satellite.**

*It is best to specify the downlink frequency (frequency direct from the satellite before down-conversion by LNB). If you wish to specify the L-Band frequency (frequency of the transponder after down-conversion by LNB), then press the "DN LINK" soft-key (located near top right corner of LCD screen) and you will see the soft-key label change to "IF Freq". Then enter the L-Band frequency. The meter will then calculate the downlink frequency based on your present LNB LO settings that have been defined in the System Setup menu. Modems often display the L-Band frequency of the carrier, but for this information to be useful, you must specify the LO frequency of the LNB in use for that system.

**If there is already an ID transponder for the satellite in the meter's database, then the custom transponder would become a 2nd ID transponder used for an additional level of checking. If there is not presently an ID transponder for the

satellite in the meter's database, then the custom transponder would become the default transponder and sole ID transponder for that satellite.

***Remember that the XR-3 satellite meter is only designed to measure the downlink / receive / outbound signal. Please do not enter any transponder parameters for the uplink / transmit / inbound signal, as the parameters will not be of any utility in the meter.

- Press "Save" to save the changes or the new transponder parameters.
- Press the "EXIT" soft key (located near bottom right corner of LCD screen) if you wish to exit the Custom Transponders editing screen without saving the changes or new transponder parameters.
- The custom transponders will appear in the meter as if they are part of the Field Guide. As such, they will be usable and viewable in the Limit Scan and Proof of Performance (PoP Scan) features.
- You can save up to 256 custom satellite transponders in the meter.
- If the custom transponder is not visible to the selected LNB and feed horn configuration, it will not appear (i.e. If you define a horizontal transponder and select a circular feed horn in the System Setup menu then you won't see it displayed. If you define a C-Band transponder and select a Ku Band LNB in the System Setup menu then you won't see it displayed)
- Custom transponders do not have any beam/footprint info so they are considered visible in all geographic regions and therefore will appear in the meter, regardless of which geographic Region is chosen in the System Setup menu and which Field Guide is loaded.

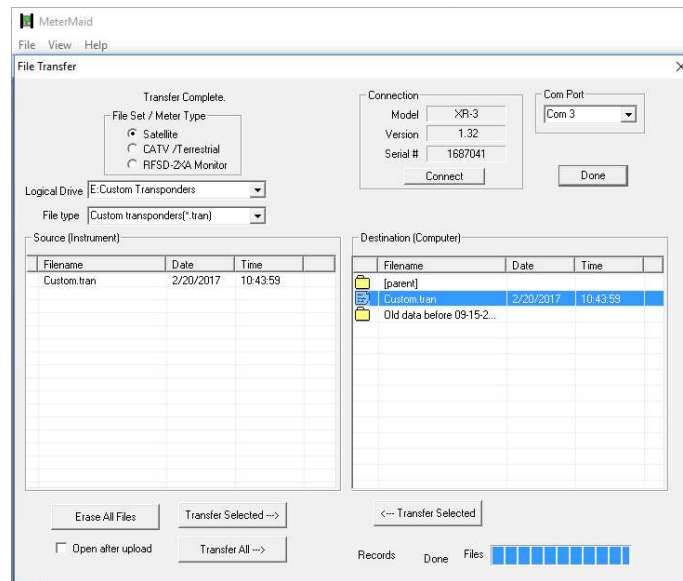
To transfer a Custom Transponder file from the PC to the XR-3:

1. Ensure that you are running the latest version of software in the XR-3. To check what version of software you are running, power on the XR-3. Press MENU. Select Versions from the Main Menu. Refer to the "Base Main" field. You should be running XR-3 Main V1.32 or later. If not, update the meter's software using the FlashUpdate program.
2. Ensure that you are running the latest version of the MeterMaid program. To check what version of MeterMaid you are running, open MeterMaid.exe from the C:\FlashUpdate folder. Click on 'Help.' Then click on 'About MeterMaid'. You should be running MeterMaid V1.11 or later. If not, visit http://www.appliedin.com/www/products/XR-3_Software_Updates.html and follow the instructions to download FlashUpdatezip, which contains the latest versions of FlashUpdate and MeterMaid.
3. Ensure that you have the custom Transponder file (Custom.tran) stored on PC in C:\FlashUpdate\Data. You may edit the raw text file stored in that location, if desired, but use caution with the changes you make and save the file in its original location. We do not recommend manually editing the text file. If you have a list of Custom Transponders that you want to transfer to an entire fleet of meters, then we recommend that you add all of the custom transponders in one XR-3 manually using the front panel keypad and the Custom Transponder feature, as described in the Custom Transponder application note. Then you can transfer the Custom.tran file from the XR-3 to the PC using the MeterMaid program. Then transfer the Custom.tran file from your PC to each of the satellite meters in your fleet, one by one, using the MeterMaid program, as described below.

Column	Type	Length	Places
Freq	Int	2	0
Tran	Char	8	0
Polar	Enum	1	7
Format	Enum	1	10
Baud	Int	2	0
Beam	Int	1	0
Prior	Int	1	0
Spot	Int	1	0
Set	Int	1	0
MaskH	Int	2	0
MaskV	Int	2	0
MaskB	Int	2	0
Code	Int	1	0
Sat	Int	1	0
Extend	Int	1	0
Options	Int	1	0
Option2	Int	1	0
Filler	Int	1	0
Orbit	Int	2	1
SatNam	Char	12	0

Freq	Tran	Polar	Format	Baud	Beam	Prior	Spot	Set	MaskH	MaskV	MaskB	Code	Sat	Extend	Options	Option2	Filler	Orbit	SatNam
3800	Tr 4	2	2	25000	0	1	0	0	0	-1	-1	10	0	0	0	8	76	-105.0	AMC 18
19990	Tr 25	4	5	30000	0	1	0	0	0	-1	-1	19	0	0	0	0	76	-103.0	SPACENWAY1
11850	Tr 14	1	0	27000	0	1	0	0	-1	0	-1	0	0	0	0	0	76	-101.0	SES-1
12100	Tr 12	2	1	16000	0	0	0	0	0	0	0	4	0	0	0	0	76	-97.0	GALAXY 19
12500	Tr 7	4	3	10000	0	0	0	0	0	0	0	19	0	0	0	0	76	-82.0	NIMIQ 4
12550	Tr 10	3	3	5000	0	0	0	0	0	0	0	21	0	0	0	0	76	-72.7	NIMIQ 5
12084	Tr 12	1	9	10835	0	0	0	0	0	0	0	30	0	91	0	0	76	-50.0	IS-29E

4. Connect your XR-3 meter to the PC using the USB cable.
5. Power on the XR-3.
6. In MeterMaid, select Com Port 'Auto' and click on 'Connect'. After confirming that the meter is connected, proceed with the following steps:
7. In MeterMaid, select 'E:Custom Transponders' from Logical Drive drop down menu.
8. In right column of MeterMaid, highlight the Custom Transponder file (Custom.tran) that you would like to transfer to the XR-3.
9. Then click on the 'Transfer Selected' button (located near bottom right corner) in MeterMaid to transfer the highlighted Custom Transponder file (Custom.tran) from the PC to the XR-3 instrument.
10. Refer to the file transfer status bar in the bottom right area of MeterMaid to monitor the file transfer progress. When it says 'Done', then you may disconnect the XR-3 from the PC. Restart the meter and then it is ready to use.



11. Refer to user operation manuals for more detailed information about viewing reports and scan results with MeterMaid.
Visit http://www.appliedin.com/www/products/XR-3_operation_manuals.html

To delete all files in a particular drive of the XR-3 instrument, select the Logical Drive (i.e. Drive F data files) from the drop down menu in MeterMaid, then press the 'Erase All Files' button. Please note that due to the way the flash memory works, it is not possible to erase only selected files; all files must be erased in a particular drive to free up the memory. After you have transferred all desired files from the XR-3 to the PC, in MeterMaid click "Erase All Files" to free up the flash storage space.