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| Title | TC/TM DATABASE FOR THE EPIC MOS CAMERA SYSTEM (EMCS) |
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EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K1 | Enter SSB Mode | 5 | 5 | N/A | N/A | N/A | 0 | NORMAL | | |

This TC is used to perform transition to Safe Stand-by Mode. In this Mode EMDH and EMCR memory loading can be performed. EMDH will switch off all the extraheating/HOPs heaters, set CCD temperature to a default value and close the FW, if not.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-------|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | 10 | K1008 | 40001 | 32 | 0 | 8 | Safe StandBy | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|---------------|------|-------|-----|-----|-----|------|----------|-----------|------------------|
| K10 | Exit BSW Mode | 5 | 2 | 252 | N/A | N/A | N/A | NORMAL | X4001 | SafeStandBy mode |

This TC is used to exit the EMDH Basic Software Maintenance Mode. EMDH will perform the a warm start and it will automatically enter the SAFE STAND-BY Mode.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K9 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K100 | PreAmp PW On/Off | 5 | 3 | 253 | 9 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to switch-on/off the preamplifiers in the EMCH. Parameters are used to include the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K101 | AnCha PW On/Off | 5 | 3 | 253 | 10 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to switch-on/off the analogue chains in the EMAE. Parameters are used to include the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K102 | Sensors On/Off | 5 | 3 | 253 | 11 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to switch-on/off the EMAE temperature control circuits and some sensors in the EMCH.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|---------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K103 | Load HBR4 BPT | 5 | 3 | 255 | 134 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load in the EMDH the bright pixels table for the HBR 4 channel.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K110 |

EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|---------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K104 | Load HBR5 BPT | 5 | 3 | 255 | 135 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load in the EMDH the bright pixels table for the HBR 5 channel.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K111 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|---------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K105 | Load HBR6 BPT | 5 | 3 | 255 | 136 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load in the EMDH the bright pixels table for the HBR 6 channel.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K112 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|---------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K106 | Load HBR7 BPT | 5 | 3 | 255 | 137 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load in the EMDH the bright pixels table for the HBR 7 channel.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K113 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|---------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K107 | Load HBR8 BPT | 5 | 3 | 255 | 138 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load in the EMDH the bright pixels table for the HBR 8 channel.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K114 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K108 | Report HBR2 BPT | 5 | 4 | 255 | 132 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to report from the EMDH the parameters loaded with the Load HBR2 Bright Pixel Table TC.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K12 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K109 | Report HBR3 BPT | 5 | 4 | 255 | 133 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to report from the EMDH the parameters loaded with the Load HBR3 Bright Pixel Table TC.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K13 |

EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------|------|-------|-----|-----|-----|------|----------|-----------|------------------|
| K11 | LOAD EMDH | 6 | 1 | N/A | N/A | 0 | N/A | HAZARDOU | X4001 | SafeStandBy mode |

This TC is used to load part of the EMDH RAM memory area. The parameters are used to specify respectively the start address and data to be loaded. This TC will be executed just in Safe Stand-By Mode with EMDH in Maintenance Mode.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K51 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K110 | Report HBR4 BPT | 5 | 4 | 255 | 134 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to report from the EMDH the parameters loaded with the Load HBR 4 Bright Pixel Table TC.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K103 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K111 | Report HBR5 BPT | 5 | 4 | 255 | 135 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to report from the EMDH the parameters loaded with the Load HBR 5 Bright Pixel Table TC.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K104 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K112 | Report HBR6 BPT | 5 | 4 | 255 | 136 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to report from the EMDH the parameters loaded with the Load HBR 6 Bright Pixel Table TC.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K105 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K113 | Report HBR7 BPT | 5 | 4 | 255 | 137 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to report from the EMDH the parameters loaded with the Load HBR 7 Bright Pixel Table TC.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K106 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K114 | Report HBR8 BPT | 5 | 4 | 255 | 138 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to report from the EMDH the parameters loaded with the Load HBR 8 Bright Pixel Table TC.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K107 |

EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|------------------|
| K115 | Ap./Rem. PW S.H. | 5 | 3 | 255 | 145 | N/A | N/A | NORMAL | X4006 | ExtraheatingMode |

This TC is used by EMDH to switch-on/off the relay which allows to apply primary power to the Shroud Heater.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K116 | Dload EMCR M PMT | 5 | 3 | 254 | 6 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to dump the Pattern/Masks table stored in the selected EMCR memory area to a dedicated memory area in the EMDH. Parameters are used to include the complete EMCR command dedicated to this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K72 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K117 | Dload EMCR M OST | 5 | 3 | 254 | 7 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to dump the Offset table stored in the selected EMCR memory area to a dedicated memory area in the EMDH. Parameters are used to include the complete EMCR command dedicated to this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K73 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K118 | Dload EMCR M Seq | 5 | 3 | 254 | 8 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to dump the Sequence Program stored in the selected EMCR memory area to a dedicated memory area in the EMDH. Parameters are used to include the complete EMCR command dedicated to this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K74 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K119 | Dload EMCR M TI | 5 | 3 | 254 | 9 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to dump the Test Image stored in the selected EMCR memory area to a dedicated memory area in the EMDH. Parameters are used to include the complete EMCR command dedicated to this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K75 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|---------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K12 | Load HBR2 BPT | 5 | 3 | 255 | 132 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load in the EMDH the bright pixel table for the HBR 2 channel.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K108 |

EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|------------------|
| K120 | Reboot EMCR RAMP | 5 | 3 | 254 | 16 | N/A | N/A | NORMAL | X4001 | SafeStandBy mode |

This TC is used, by EMCR, to perform a complete bootstrap of the EMCR S/W as performed at the EMCR switch-on. Parameters are used to load the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K121 | Load EMCR EDU WP | 5 | 3 | 254 | 40 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load in one of the 8 EMCR EDUs the observation window parameters to be used. Parameters are used to load the complete EMCR command foreseen for this function. Note that the 2 EDUs of the same group will have the same window parameters, therefore a single command for each group can be used.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|------------------|
| K122 | Start EMCR Obse. | 5 | 3 | 254 | 33 | N/A | N/A | NORMAL | X4003 | InFlightTestMode |

This TC is used to put the EMCR in Observation mode. EMCR will automatically provide to send to EMAE the right commands in order to start the observation. Parameters are used to load the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K123 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|------------------|
| K123 | Stop EMCR Obser. | 5 | 3 | 254 | 34 | N/A | N/A | NORMAL | X4003 | InFlightTestMode |

This TC is used to exit the EMCR from Observation mode. EMCR will automatically provide to send to EMAE the right commands in order to stop the observation. Parameters are used to load the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K122 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|------------------|
| K124 | EMCRStartTestIm. | 5 | 3 | 254 | 36 | N/A | N/A | NORMAL | X4003 | InFlightTestMode |

This TC is used to put the EMCR in Test mode. EMCR will send through the selected HBR I/F the built-in or the loaded test image. Parameters are used to load the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K125 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|------------------|
| K125 | EMCRStopTestIma. | 5 | 3 | 254 | 35 | N/A | N/A | NORMAL | X4003 | InFlightTestMode |

This TC is used to exit the EMCR from the Test mode. EMCR will stop to send test data through the previously selected HBR I/F. Parameters are used to load the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K124 |

EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|---------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K13 | Load HBR3 BPT | 5 | 3 | 255 | 133 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load in the EMDH the bright pixel table for the HBR 3 channel.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K109 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|------------------|
| K14 | Start Per. Task | 5 | 3 | 0 | 3 | N/A | N/A | NORMAL | X4003 | InFlightTestMode |

This TC is used to start the specified periodic task in the EMDH.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K16 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|------------------|
| K15 | Start Spor. Task | 5 | 3 | 1 | 3 | N/A | N/A | NORMAL | X4003 | InFlightTestMode |

This TC is used to start the specified sporadic task in the EMDH.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K14 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|----------------|------|-------|-----|-----|-----|------|----------|-----------|------------------|
| K16 | Stop Per. Task | 5 | 3 | 0 | 4 | N/A | N/A | NORMAL | X4003 | InFlightTestMode |

This TC is used to stop the specified periodic task in the EMDH.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K14 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|--------------|------|-------|-----|-----|-----|------|----------|-----------|------------------|
| K17 | Suspend Task | 5 | 5 | N/A | N/A | N/A | 32 | NORMAL | X4003 | InFlightTestMode |

This TC is used to suspend the specified task in the EMDH.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K18 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-------------|------|-------|-----|-----|-----|------|----------|-----------|------------------|
| K18 | Resume Task | 5 | 5 | N/A | N/A | N/A | 33 | NORMAL | X4003 | InFlightTestMode |

This TC is used to resume the specified task in the EMDH.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K17 |

EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|-----------------|
| K19 | Load Sp. T. APT | 5 | 3 | 1 | 1 | N/A | N/A | NORMAL | X4004 | SSB or IFT mode |

This TC is used to load the specified sporadic task of the EMDH in the APT.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K22 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K2 | Enter IDLE Mode | 5 | 5 | N/A | N/A | N/A | 1 | NORMAL | | |

This TC is used to perform transition to Idle Mode. In this Mode all the configuration commands can be executed (except the EMDH and EMCR critical operations as memory loading and testing) and transition to other modes can be performed.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-------|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | 10 | K1008 | 40001 | 32 | 0 | 8 | Idle | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|-----------------|
| K20 | Load Pe. T. PPT | 5 | 3 | 0 | 1 | N/A | N/A | NORMAL | X4004 | SSB or IFT mode |

This TC is used to load the specified periodic task of the EMDH in the PPT.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K21 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|-----------------|
| K21 | Unload P. T. PPT | 5 | 3 | 0 | 2 | N/A | N/A | NORMAL | X4004 | SSB or IFT mode |

This TC is used to unload the specified periodic task of the EMDH from the PPT.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K20 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|-----------------|
| K22 | Unload S. T. APT | 5 | 3 | 1 | 2 | N/A | N/A | NORMAL | X4004 | SSB or IFT mode |

This TC is used to unload the specified sporadic task of the EMDH from the APT.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K19 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K3 | Enter PRIME Mode | 5 | 5 | N/A | N/A | N/A | 2 | NORMAL | X4000 | Idle mode |

This TC is used to perform transition to PRIME Mode. In this mode, EMCS will start the CCD readout depending on the instrument configuration performed in IDLE Mode. Scientific TM packets will be generated with information regarding the incoming events.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-------|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | 10 | K1008 | 40001 | 32 | 0 | 8 | Prime | | | | | K2 |

EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|--------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K30 | Test Command | 13 | 1 | N/A | N/A | N/A | N/A | NORMAL | X4005 | SSB/IFT mode |

This TC is intended to have a confirmation that the link to the application is operational. EMDH will response to the TC issuing a Successful Command Acceptance Report (TM 3.2)

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K31 | Load HBR Config. | 5 | 3 | 255 | 128 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load in the EMDH the enable/disable status and the processing. End-effect is verified with H/K parameters from E1028 to E1035.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K37 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K32 | LoadHBR BuffSize | 5 | 3 | 255 | 129 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

Load HBR Buffer Size This TC is used to load in the EMDH the buffer allocation for each HBR channel to be used in the scientific processing of the incoming events.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K38 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K33 | Load HBR 1 BPT | 5 | 3 | 255 | 131 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load in the EMDH the bright pixel table for the HBR 1 channel.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K39 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K34 | LoadHBR Thr.Val. | 5 | 3 | 255 | 130 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

Load HBR Threshold Values. This TC is used to load in the EMDH the low/high threshold values for each HBR channel to be applied in the scientific processing of the incoming events. Even the pattern reference used in the pattern discrimination process will be loaded.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K40 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K35 | Load EXTH Conf. | 5 | 3 | 255 | 144 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

Load Extraheating Configuration. This TC is used to load in the EMDH the configuration of the relays to be used in the different extraheating submodes. Also the safety temperature limits checked by the EMDH during the different extraheating submodes are loaded.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K41 |

EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K36 | LoadTermMoniLim. | 5 | 3 | 255 | 160 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

Load Thermal Monitoring Limits. This TC is used to load in the EMDH the safety temperature limits checked by the EMDH when the normally operating thermal control of the focal plane is active.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K42 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K37 | Report HBR Conf. | 5 | 4 | 255 | 128 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to report, from the EMDH, the parameters loaded with the Load HBR Channel Configuration TC

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K31 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K38 | Rep.HBR BuffSize | 5 | 4 | 255 | 129 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to report, from the EMDH, the parameters loaded with the Load HBR Buffer Size TC

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K32 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K39 | Report HBR 1 BPT | 5 | 4 | 255 | 131 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to report, from the EMDH, the parameters loaded with the Load HBR 1 Bright Pixel Table

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K33 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K4 | Enter FAST Mode | 5 | 5 | N/A | N/A | N/A | 3 | NORMAL | X4000 | Idle mode |

This TC is used to perform transition to FAST Mode. In this mode, EMCS will start the CCD readout depending on the instrument configuration performed in IDLE Mode. Scientific TM packets will be generated with information regarding the incoming events.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-------|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | 10 | K1008 | 40001 | 32 | 0 | 8 | Fast | | | | | K2 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K40 | ReportHBR ThrVal | 5 | 4 | 255 | 130 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to report, from the EMDH, the parameters loaded with the Load Scientific Threshold Values TC.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K34 |

EMCS TC PACKET DETAILED LIST

EPIC-EST-TN-008 I.2
Appendix G

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K41 | ReportEXTH Conf. | 5 | 4 | 255 | 144 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to report, from the EMDH, the parameters loaded with the Load Extraheating Configuration TC

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K35 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K42 | ReportTermMonLim | 5 | 4 | 255 | 160 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to report, from the EMDH, the parameters loaded with the Load Thermal Monitoring Limits TC.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K36 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K43 | Arm PW Door HOP | 5 | 3 | 255 | 208 | N/A | N/A | NORMAL | X4000 | Idle mode |

This TC is used by EMDH to arm the switch-on of the relay which allows to apply primary power to the HOP in charge to open the Door. This TC will be correctly executed only if the Filter Wheel is in Open position. In order to remove the arming condition, without operating the HOP, it will be necessary to send the Enter EMCS Idle Mode TC.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-------|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | 10 | K1065 | 40001 | 108 | 0 | 8 | Armed | | K44 | | | K2 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K44 | Fire PW Door HOP | 5 | 3 | 255 | 209 | N/A | N/A | HAZARDOU | X4000 | Idle mode |

This TC is used by EMDH to fire the switch-on of the relay which allows to apply primary power to the HOP in charge to open the Door. This TC is executed only if the Arm Power Door HOP is previously executed. Power will be automatically removed after the specified time or when Remove Power TC is received.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-------|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | 10 | K1010 | 40001 | 35 | 2 | 1 | ON | K43 | K45 | | | K45 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K45 | Rem. PW Door HOP | 5 | 3 | 255 | 210 | N/A | N/A | NORMAL | X4000 | Idle mode |

This TC is used, by the EMDH, to switch-off the relay which allows to apply primary power to the HOP in charge to open the Door. This TC will be executed only if the Primary Power to Door HOP is presently applied.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-------|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | 10 | K1010 | 40001 | 35 | 2 | 1 | OFF | K44 | | | | K44 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K46 | Arm PW VenValHOP | 5 | 3 | 255 | 224 | N/A | N/A | NORMAL | X4000 | Idle mode |

TC used by the EMDH to arm the switch-on of the relay which allows to apply primary power to the HOP which opens the Venting Valve. In order to remove the arming condition, without operating the HOP, it will be necessary to send the Enter EMCS Idle Mode TC.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-------|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | 10 | K1066 | 40001 | 109 | 0 | 8 | Armed | | K47 | | | K2 |

EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K47 | Fire PW VenVaHOP | 5 | 3 | 255 | 225 | N/A | N/A | HAZARDOU | X4000 | Idle mode |

TC used by the EMDH to fire the switch-on of the relay which allows to apply primary power to the HOP which opens the Venting Valve. This TC is executed only if the Arm Venting Valve HOP is previously executed. Power will be automatically removed after the specified time or when Remove Power TC is received.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-------|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | 10 | K1011 | 40001 | 35 | 3 | 1 | ON | K46 | K48 | | | K48 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K48 | RemovePW VeVaHOP | 5 | 3 | 255 | 226 | N/A | N/A | NORMAL | X4000 | Idle mode |

This TC is used, by the EMDH, to switch-off the relay which allows to apply primary power to the HOP which opens the Venting Valve.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-------|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | 10 | K1011 | 40001 | 35 | 3 | 1 | OFF | K47 | | | | K47 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K49 | Apply Power F.W. | 5 | 3 | 255 | 241 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used, by the EMDH, to switch-on the relay which allows to apply primary power to the Filter Wheel. The parameter allows to select which coil of the Filter Wheel shall be powered. End-effect is verified with H/K parameters E1012-13.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K50 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|--------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K5 | Enter O Mode | 5 | 5 | N/A | N/A | N/A | 4 | NORMAL | X4000 | Idle mode |

This TC is used to perform transition to OFFSET and VARIANCE Mode. In this mode, EMCS will start the CCD readout of 1 frame in transparent mode. EMCS will reject the specified number of frames before to store the last one, compute the Offset and Variance, send to ground the result, update the EMDH Table.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-------|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | 10 | K1008 | 40001 | 32 | 0 | 8 | Offset | | | | | K2 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K50 | Remove PW F. W. | 5 | 3 | 255 | 242 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used, by the EMDH, to switch-off the relay which allows to apply primary power to the Filter Wheel. End-effect is verified with H/K parameters E1012-13.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K49 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K51 | Dump EMDH Memory | 6 | 2 | N/A | N/A | 0 | N/A | NORMAL | X4005 | SSB/IIFT mode |

This TC is used to dump some EMDH memory area (RAM + PROM). The parameters are used to specify respectively the start address and the length of the memory area to be dumped. One or more Memory Dump Reports (TM 6.2) will be sent by TM link.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K11 |

EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K52 | Cal. EMDH M. CES | 6 | 3 | N/A | N/A | 0 | N/A | NORMAL | X4005 | SSB/IIFT mode |

This TC is used to calculate checksum of the specified part of the EMDH PROM/RAM. The parameters are used to specify respectively the start address and length of the area to be checked.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K53 | LOAD EMDH TABLES | 6 | 1 | N/A | N/A | 1 | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load in a specific EMDH memory area the Offset, Sequence, Pattern Mask tables or Test Image to be loaded in EMCR. More TC will be used to load the complete table in the EMDH, start address and length will be opportunely set.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K54 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K54 | Dump EMDH Tables | 6 | 2 | N/A | N/A | 1 | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to dump a specific EMDH memory area where the Offset, Sequence, Pattern Mask tables and Test Image, are stored. This TC is used to dump a specific EMDH memory area where the Offset, Sequence and Pattern tables read from EMAE, EMCR EDU or EMCR Memory are stored. Start address will be fixed. One or more Memory Dump Reports (TM 6,2) will be sent by TM.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K53 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K55 | Rep. TMP Gen. S. | 9 | 1 | N/A | N/A | N/A | N/A | NORMAL | X4005 | SSB/IIFT mode |

This TC is used to trigger the report of the TM Packets Generation Status (TM 9,1).

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K56 | Enable Gen. ATMP | 9 | 2 | N/A | N/A | N/A | N/A | NORMAL | X4005 | SSB/IIFT mode |

This TC is used to enable the generation of all the TM Packets.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K57 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K57 | Disable Ge. ATMP | 9 | 3 | N/A | N/A | N/A | N/A | NORMAL | X4005 | SSB/IIFT mode |

This TC is used to disable the generation of all the TM Packets.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K56 |

EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K58 | Enable Gen. STMP | 9 | 4 | N/A | N/A | N/A | N/A | NORMAL | X4005 | SSB/IIFT mode |

This TC is used to enable the generation of the selected TM Packets.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K59 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K59 | Disable Ge. STMP | 9 | 5 | N/A | N/A | N/A | N/A | NORMAL | X4005 | SSB/IIFT mode |

This TC is used to disable the generation of the selected TM Packets.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K58 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K6 | Enter CCDD Mode | 5 | 5 | N/A | N/A | N/A | 5 | NORMAL | X4000 | Idle mode |

This TC is used to perform transition to Diagnostic Mode. EMCS will start the CCD readout of 1 frame in transparent mode. Scientific TM packets will be generated with the relevant pixel information. EMCS will reject the specified number of frames before to store the last one, send it to Ground and go to Idle mode.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-------|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | 10 | K1008 | 40001 | 32 | 0 | 8 | CCD Diagnos. | | | | | K2 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K60 | Enable OBT Sync. | 10 | 2 | N/A | N/A | N/A | N/A | NORMAL | X4005 | SSB/IIFT mode |

This TC is used to arm the time synchronization function in the EMDH.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|---------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K61 | Add Time Code | 10 | 3 | N/A | N/A | N/A | N/A | NORMAL | X4005 | SSB/IIFT mode |

This TC is used to add the received Time Code to the actual EMDH on-board time.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K62 | Enable OBT Veri. | 10 | 5 | N/A | N/A | N/A | N/A | NORMAL | X4005 | SSB/IIFT mode |

This TC is used to trigger the generation of the Time Verification Report (TM 10,5).

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K63 | Preset Time Cnt. | 5 | 3 | 255 | 176 | N/A | N/A | NORMAL | X4005 | SSB/I/IFT mode |

This TC is used to load the preset value of the counter used for the automatic generation of the reset pulse to the EMCR. The preset value can range from 1 s to 18 h.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K64 | Dump EMCR Memory | 6 | 2 | N/A | N/A | 16 | N/A | NORMAL | X4005 | SSB/I/IFT mode |

This TC is used to dump some EMCR memory area (RAM+PROM). The parameters are used to specify, respectively, the start address and the length of the memory area to be dumped. One or more Memory Dump Reports (TM 6,2) will be sent by TM link.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K70 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K65 | Cal. EMCR M CES | 6 | 3 | N/A | N/A | 16 | N/A | NORMAL | X4005 | SSB/I/IFT mode |

This TC is used to calculate checksum of the specified part of EMCR PROM/RAM memory area. The parameters are used to specify, respectively, the start address and length of the area to be checked.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K66 | Download EDU PMT | 5 | 3 | 254 | 12 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to dump the Pattern/Masks table stored in the selected EMCR EDU to a dedicated memory area in the EMDH. Parameters are used to include the complete EMCR command dedicated to this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K79 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K67 | Download EDU OST | 5 | 3 | 254 | 13 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to dump the Offset table stored in the selected EMCR EDU to a dedicated memory area in the EMDH. Parameters are used to include the complete EMCR command dedicated to this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K78 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K68 | Download Sequen. | 5 | 3 | 254 | 14 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to dump the Sequence Program stored in the selected EMAE Sequencer to a dedicated memory area in the EMDH. Parameters are used to include the complete EMCR command dedicated to this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K82 |

EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|------------------|
| K69 | Stop EMCR RAM Pr | 5 | 3 | 254 | 39 | N/A | N/A | NORMAL | X4001 | SafeStandBy mode |

This TC is used, by EMCR, to stop execution of the program stored in RAM Memory and start execution of Boot program. Parameters are used to include the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K71 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K7 | Enter EXTH Mode | 5 | 5 | N/A | N/A | N/A | 6 | NORMAL | X4000 | Idle mode |

This TC is used to perform transition to Extraheating Mode. The requested extraheating submode will be applied. The specified EMCR Thermal Control temperature setting will be applied (meaningful only when Annealing heater is used). This mode can be entered only if the Filter Wheel is in Open position.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-------|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | 10 | K1008 | 40001 | 32 | 0 | 8 | Extraheating | | | | | K2 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|-----------|------|-------|-----|-----|-----|------|----------|-----------|------------------|
| K70 | LOAD EMCR | 6 | 1 | N/A | N/A | 16 | N/A | HAZARDOU | X4001 | SafeStandBy mode |

This TC is used to load part of the EMCR RAM memory area. The parameters are used to specify respectively the start address and data to be loaded. Command will be executed only in Safe Stand-by mode with EMCR running the Boot program.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K64 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|------------------|
| K71 | Start EMCR RAM P | 5 | 3 | 254 | 17 | N/A | N/A | NORMAL | X4001 | SafeStandBy mode |

This TC is used, by EMCR, to start execution of the program stored in RAM Memory. Parameters are used to include the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K69 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K72 | Load EMCR M. PMT | 5 | 3 | 254 | 19 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load the Pattern/Masks Table in the addressed EMCR memory areas available for this scope. Parameters are used to load the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K116 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K73 | Upload EMCRM OST | 5 | 3 | 254 | 20 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load in the EMCR memory the complete Offset Table previously stored in the EMDH Tables area. Parameters are used to include the first part of the command to be delivered from EMDH to EMCR.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K117 |

EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K74 | Upload EMCRM Seq | 5 | 3 | 254 | 21 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load in the EMCR memory the complete Sequence Program previously stored in the EMDH Tables area. Parameters are used to include the first part of the command to be delivered from EMDH to EMCR.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K118 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K75 | Upload EMCR M TI | 5 | 3 | 254 | 22 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load in the EMCR memory the complete Test Image previously stored in a dedicated EMDH memory area. Parameters are used to include the first part of the EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K119 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K76 | Set EMCR EDU THR | 5 | 3 | 254 | 24 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to set the low threshold of the selected EMCR EDU. In case of EDU alternate working mode, both thresholds can be set. Parameters are used to include the complete EMCR command foreseen for this function. End-effect is verified via H/K parameters from E1398 to E1413.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|---------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K77 | Configure EDU | 5 | 3 | 254 | 27 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to set the operating mode (Transparent, Imaging, Timing, Threshold) and status (Stop, Run or Alternate) of each EDU. Parameters are used to include the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K78 | Load EDU OffsetT | 5 | 3 | 254 | 31 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load one of the eight Offset Tables stored in the EMCR memory in one of the eight EMCR EDUs. Parameters are used to include the complete EMCR command dedicated to this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K67 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K79 | Load EDU PMTable | 5 | 3 | 254 | 32 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load one of the eight Pattern/Masks tables stored in the EMCR EDUs. Parameters are used to include the complete EMCR command dedicated to this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K66 |

EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|----------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K8 | Enter IFT Mode | 5 | 5 | N/A | N/A | N/A | 16 | NORMAL | X4000 | Idle mode |

This TC is used to perform transition to IN-FLIGHT TEST Mode. EMCS or EMDH In-Flight Test will be activated depending on the parameter value. EMCS selection will allow to execute almost all the existing TCs without any on-board filtering or control.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-------|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | 10 | K1008 | 40001 | 32 | 0 | 8 | InFlightTest | | | | | K2 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K80 | Set EMAE MUX Pos | 5 | 3 | 254 | 23 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to configure Sequencers (including setting of Multiplexers position) in the EMAE. This TC allows to associate each CCD node to an EMCR EDU. Parameters are used to include the complete EMCR command foreseen for this function. The uploaded configuration is not applied till to the observation start.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K81 | Load EMAE Comman | 5 | 3 | 253 | 25 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to send one low level command to EMAE, through EMCR. Parameters are used to include the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K82 | Load EMAE Sequen | 5 | 3 | 254 | 26 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to load in one of the four EMAE Sequencers one of the four Sequence Programs stored in the EMCR memory.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K68 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K83 | Set EMCR Obs. T. | 5 | 3 | 254 | 30 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to set all the timings (integration time, readout delay time, etc.) needed for a correct observation cycle. Parameters are used to include the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K84 | Synchronize F.W. | 5 | 3 | 254 | 28 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to synchronize the Filter Wheel. The FW will be moved in the closed position (stop sensors aligned to hall sensors). Parameters are used to include the complete EMCR command foreseen for this function. In worst case, the synchronization can take up to 20 minutes.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K85 | Turn Filt. Wheel | 5 | 3 | 254 | 29 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to turn the Filter Wheel in one defined position. Parameters are used to include the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|----------------|------|-------|-----|-----|-----|------|----------|-----------|------------------|
| K9 | Enter BSW Mode | 5 | 1 | 252 | N/A | N/A | N/A | NORMAL | X4001 | SafeStandBy mode |

This TC is used to enter the EMDH Basic Software Maintenance Mode. This mode allows to load, dump and calculate checksum only. Furthermore any other EMDH activity will be stopped (including H/K generation).

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | K10 |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K91 | Set CCD1 Voltage | 5 | 3 | 253 | 0 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to set all the CCD1 voltages (bias and clock) in the EMAE. Parameters are used to include the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K92 | Set CCD2 Voltage | 5 | 3 | 253 | 1 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to set all the CCD2 voltages (bias and clock) in the EMAE. Parameters are used to include the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K93 | Set CCD3 Voltage | 5 | 3 | 253 | 2 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to set all the CCD3 voltages (bias and clock) in the EMAE. Parameters are used to include the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K94 | Set CCD4 Voltage | 5 | 3 | 253 | 3 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to set all the CCD4 voltages (bias and clock) in the EMAE. Parameters are used to include the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

EMCS TC PACKET DETAILED LIST

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K95 | Set CCD5 Voltage | 5 | 3 | 253 | 4 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to set all the CCD5 voltages (bias and clock) in the EMAE. Parameters are used to include the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K96 | Set CCD6 Voltage | 5 | 3 | 253 | 5 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to set all the CCD6 voltages (bias and clock) in the EMAE. Parameters are used to include the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K97 | Set CCD7 Voltage | 5 | 3 | 253 | 6 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to set all the CCD7 voltages (bias and clock) in the EMAE. Parameters are used to include the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K98 | Set FPT Main Con | 5 | 3 | 253 | 7 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to set the temperature used by main control of the EMAE for the Focal Plane thermal regulation. Parameters are used to include the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |

| MF_NO | NAME | TYPE | STYPE | TID | FID | MID | MODE | CATEGORY | CONDITION | CONDITION NAME |
|-------|------------------|------|-------|-----|-----|-----|------|----------|-----------|----------------|
| K99 | Set FPT Red. Con | 5 | 3 | 253 | 8 | N/A | N/A | NORMAL | X4002 | I or IFT mode |

This TC is used to set the temperature used by redundant control of the EMAE for the Focal Plane thermal regulation. Parameters are used to include the complete EMCR command foreseen for this function.

| ACC. | EXEC. | VERIF. TIME | VERIF. TM PREF | TPN | OFFSET | START | WIDTH | VERIF. TM VAL. | PREC. | FOLL. | ALT. | RED. | OPP. |
|------|-------|-------------|----------------|-----|--------|-------|-------|----------------|-------|-------|------|------|------|
| 10 | 10 | | | | | | | | | | | | |